IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

JOE ANDREW SALAZAR, *Plaintiff*, v. AT&T MOBILITY LLC, SPRINT UNITED MANAGEMENT COMPANY, T-MOBILE USA INC, CELLCO PARTNERSHIP, INC. D/B/A VERIZON WIRELESS, INC., *Defendants*.	§ § § § § § § § § § §	CIVIL ACTION NO. 2:20-CV-00004-JRG

FINAL JUDGMENT

A jury trial commenced in the above-captioned case on August 2, 2021, and on August 9, 2021, the jury reached and returned its unanimous verdict finding that Defendants AT&T Mobility LLC; Sprint United Management Company; T-Mobile USA, Inc.; Cellco Partnership d/b/a Verizon Wireless, Inc. ("Defendants") did not infringe any of Claims 1–7, 29–30, and 34 of U.S. Patent No. 5,802,467 (collectively, the "Asserted Claims"); and that none of the Asserted Claims are invalid. (Dkt. No. 239).

Pursuant to Rule 58 of the Federal Rules of Civil Procedure, and in accordance with the jury's unanimous verdict and the entirety of the record, the Court hereby **ORDERS** and **ENTERS JUDGMENT** as follows:

1. Defendants did not infringe any of the Asserted Claims;

2. None of the Asserted Claims are invalid;

3. Pursuant to Federal Rule of Civil Procedure 54(d), Local Rule CV-54, and 28 U.S.C. § 1920, Defendants are the prevailing party in this case and shall recover their costs from Plaintiff Joe Andrew Salazar; and

4. All other requests for relief now pending and requested by either party but not specifically addressed herein are **DENIED**.

All other requests for relief regarding the above-captioned case, including but not limited to Motions pursuant to 35 U.S.C. § 285, shall be filed within 28 days of this Judgment.

The Clerk of the Court is directed to **CLOSE** the above-captioned case.

So ORDERED and SIGNED this 17th day of August, 2021.

RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE

APPEAL,JRG3,JURY,PATENT/TRADEMARK,PROTECTIVE-ORDER

U.S. District Court
Eastern District of TEXAS [LIVE] (Marshall)
CIVIL DOCKET FOR CASE #: 2:20-cv-00004-JRG

Salazar v. AT&T Mobility LLC et al
Assigned to: District Judge Rodney Gilstrap
Case in other court: USCA - Federal Circuit, 21-02376
Cause: 35:271 Patent Infringement

Date Filed: 06/18/2019
Date Terminated: 08/17/2021
Jury Demand: Both
Nature of Suit: 830 Patent
Jurisdiction: Federal Question

Mediator

Hon. David Folsom (Ret.)

Technical Advisor

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Plaintiff

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Counter Claimant

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Counter Defendant

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Geoffrey Patton Culbertson
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Date Filed	#	Docket Text
06/18/2019	1	COMPLAINT against All Defendants (Filing fee $ 400 receipt number 0540-7316100.), filed by Joe Andrew Salazar. (Attachments: # 1 Civil Cover Sheet Civil Cover Sheet, # 2 Exhibit 1)(Culbertson, Geoffrey) (Entered: 06/18/2019)

06/18/2019	2	Notice of Filing of Patent/Trademark Form (AO 120). AO 120 mailed to the Director of the U.S. Patent and Trademark Office. (Culbertson, Geoffrey) (Entered: 06/18/2019)
06/18/2019		Case Assigned to District Judge Robert W. Schroeder, III. (slo,) (Entered: 06/19/2019)
06/18/2019		In accordance with the provisions of 28 USC Section 636(c), you are hereby notified that a U.S. Magistrate Judge of this district court is available to conduct any or all proceedings in this case including a jury or non-jury trial and to order the entry of a final judgment. The form Consent to Proceed Before Magistrate Judge is available on our website. All signed consent forms, excluding pro se parties, should be filed electronically using the event *Notice Regarding Consent to Proceed Before Magistrate Judge*. (slo,) (Entered: 06/19/2019)
07/19/2019	3	AMENDED COMPLAINT against All Defendants, filed by Joe Andrew Salazar. (Attachments: # 1 Exhibit A)(Culbertson, Geoffrey) (Entered: 07/19/2019)
07/22/2019	4	SUMMONS Issued as to AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Summons- Cellco, # 2 Summons- Sprint, # 3 Summons- T-Mobile)(slo,) (Entered: 07/22/2019)
08/06/2019	5	NOTICE of Attorney Appearance by Fred Irvin Williams on behalf of T-Mobile USA Inc (Williams, Fred) (Entered: 08/06/2019)
08/06/2019	6	Defendant's Unopposed First Application for Extension of Time to Answer Complaint re T-Mobile USA Inc.(Williams, Fred) (Entered: 08/06/2019)
08/07/2019		Defendant's Unopposed FIRST Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for T-Mobile USA Inc to 9/16/2019. 30 Days Granted for Deadline Extension.(slo,) (Entered: 08/07/2019)
08/07/2019	7	SUMMONS Returned Executed by Joe Andrew Salazar. AT&T Mobility LLC served on 7/25/2019, answer due 8/15/2019. (Culbertson, Geoffrey) (Entered: 08/07/2019)
08/07/2019	8	SUMMONS Returned Executed by Joe Andrew Salazar. Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc. served on 7/29/2019, answer due 8/19/2019. (Culbertson, Geoffrey) (Entered: 08/07/2019)
08/07/2019	9	SUMMONS Returned Executed by Joe Andrew Salazar. T-Mobile USA Inc served on 7/26/2019, answer due 9/16/2019. (Culbertson, Geoffrey) (Entered: 08/07/2019)
08/07/2019	10	SUMMONS Returned Executed by Joe Andrew Salazar. Sprint United Management Company served on 7/26/2019, answer due 8/16/2019. (Culbertson, Geoffrey) (Entered: 08/07/2019)
08/07/2019	11	NOTICE of Attorney Appearance by Fred Irvin Williams on behalf of Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc. (Williams, Fred) (Entered: 08/07/2019)
08/07/2019	12	Defendant's Unopposed First Application for Extension of Time to Answer Complaint re Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc..(Williams, Fred) (Entered: 08/07/2019)
08/07/2019	13	NOTICE of Attorney Appearance by Fred Irvin Williams on behalf of Sprint United Management Company (Williams, Fred) (Entered: 08/07/2019)
08/07/2019	14	Defendant's Unopposed First Application for Extension of Time to Answer Complaint re Sprint United Management Company.(Williams, Fred) (Entered: 08/07/2019)
08/08/2019		Defendant's Unopposed FIRST Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for Cellco Partnership, Inc. d/b/a Verizon

		Wireless, Inc. to 9/18/2019. 30 Days Granted for Deadline Extension.(slo,) (Entered: 08/08/2019)
08/08/2019		Defendant's Unopposed FIRST Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for Sprint United Management Company to 9/16/2019. 30 Days Granted for Deadline Extension.(slo,) (Entered: 08/08/2019)
08/08/2019	15	Defendant's Unopposed First Application for Extension of Time to Answer Complaint re AT&T Mobility LLC.(Gillam, Harry) (Entered: 08/08/2019)
08/08/2019		Defendant's Unopposed FIRST Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for AT&T Mobility LLC to 9/16/2019. 30 Days Granted for Deadline Extension.(slo,) (Entered: 08/08/2019)
08/19/2019	16	NOTICE of Attorney Appearance - Pro Hac Vice by Dariush Keyhani on behalf of Joe Andrew Salazar. Filing fee $ 100, receipt number 0540-7399532. (Keyhani, Dariush) (Entered: 08/19/2019)
08/19/2019	17	NOTICE of Attorney Appearance - Pro Hac Vice by Frances H. Stephenson on behalf of Joe Andrew Salazar. Filing fee $ 100, receipt number 0540-7399657. (Stephenson, Frances) (Entered: 08/19/2019)
09/10/2019	18	Defendant's Unopposed Second Application for Extension of Time to Answer Complaint re T-Mobile USA Inc.(Williams, Fred) (Entered: 09/10/2019)
09/10/2019	19	Defendant's Unopposed Second Application for Extension of Time to Answer Complaint re Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc.(Williams, Fred) (Entered: 09/10/2019)
09/10/2019	20	Defendant's Unopposed Second Application for Extension of Time to Answer Complaint re Sprint United Management Company.(Williams, Fred) (Entered: 09/10/2019)
09/10/2019		Defendant's Unopposed SECOND Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for T-Mobile USA Inc to 10/1/2019. 15 Days Granted for Deadline Extension.(slo,) (Entered: 09/10/2019)
09/10/2019		Defendant's Unopposed SECOND Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc. to 10/1/2019. 13 Days Granted for Deadline Extension.(slo,) (Entered: 09/10/2019)
09/10/2019		Defendant's Unopposed SECOND Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for Sprint United Management Company to 10/1/2019. 15 Days Granted for Deadline Extension.(slo,) (Entered: 09/10/2019)
09/11/2019	21	NOTICE of Attorney Appearance by Harry Lee Gillam, Jr on behalf of Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc (Gillam, Harry) (Entered: 09/11/2019)
09/11/2019	22	NOTICE of Attorney Appearance by Fred Irvin Williams on behalf of AT&T Mobility LLC (Williams, Fred) (Entered: 09/11/2019)
09/11/2019	23	Defendant's Unopposed Second Application for Extension of Time to Answer Complaint re AT&T Mobility LLC.(Williams, Fred) (Entered: 09/11/2019)
09/12/2019		Defendant's Unopposed SECOND Application for Extension of Time to Answer Complaint is GRANTED pursuant to Local Rule CV-12 for AT&T Mobility LLC to 10/1/2019. 15 Days Granted for Deadline Extension.(slo,) (Entered: 09/12/2019)

10/01/2019	24	NOTICE of Attorney Appearance by Todd Eric Landis on behalf of All Defendants (Landis, Todd) (Entered: 10/01/2019)
10/01/2019	25	NOTICE of Attorney Appearance by Parker Douglas Hancock on behalf of All Defendants (Hancock, Parker) (Entered: 10/01/2019)
10/01/2019	26	Unopposed MOTION for Leave to File *Under Seal Defendants' Joint Motion to Dismiss Under Rule 12(b)(6)* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 10/01/2019)
10/01/2019	27	SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6)* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 10/01/2019)
10/01/2019	28	MOTION for Intra-District Transfer to the Marshall Division by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 10/01/2019)
10/03/2019	29	REDACTION to 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6)* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Williams, Fred) (Entered: 10/03/2019)
10/07/2019	30	ORDER granting 26 Motion for Leave to File Under Seal its Joint Motion to Dismiss. The Clerk of the Court is hereby instructed to seal Defendants Joint Motion to Dismiss Under Rule 12(b)(6). Signed by District Judge Robert W. Schroeder, III on 10/7/2019. (slo,) (Entered: 10/07/2019)
10/07/2019	31	Joint MOTION for Briefing Schedule re 28 MOTION for Intra-District Transfer to the Marshall Division , 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6)* by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Order)(Culbertson, Geoffrey) (Entered: 10/07/2019)
10/09/2019	32	NOTICE of Readiness for Scheduling Conference by Joe Andrew Salazar (Culbertson, Geoffrey) (Entered: 10/09/2019)
10/11/2019	33	ORDER granting 31 Joint Motion for Entry of Breifing Schedule re 27 Motion to Dismiss; and 28 Motion for Intra-District Transfer to the Marshall Division. Responses due 10/30/2019; Replies due 11/20/2019; and Sur-Replies due 12/4/2019. Signed by District Judge Robert W. Schroeder, III on 10/11/2019. (slo,) (Entered: 10/11/2019)
10/16/2019	34	ORDER (Scheduling Conference set for 11/7/2019 02:30 PM in Ctrm 319 (Texarkana) before District Judge Robert W. Schroeder III.) Signed by District Judge Robert W. Schroeder, III on 10/16/2019. (slo,) (Entered: 10/16/2019)
10/30/2019	35	RESPONSE in Opposition re 28 MOTION for Intra-District Transfer to the Marshall Division *filed by Joe Andrew Salazar*. (Attachments: # 1 Declaration of Frances H. Stephenson, # 2 Exhibit A, # 3 Exhibit B)(Culbertson, Geoffrey) (Additional attachment(s) added on 10/31/2019: # 4 Text of Proposed Order) (slo,). (Entered: 10/30/2019)
10/30/2019	36	Unopposed MOTION for Extension of Time to File Response/Reply as to 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6)* by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Order)(Culbertson, Geoffrey) (Entered: 10/30/2019)
10/31/2019	37	Joint MOTION for Extension of Time to File *Agreed Protective Order* by AT&T

		Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order) (Williams, Fred) (Entered: 10/31/2019)
10/31/2019	38	Joint MOTION Entry of Discovery Order [Disputed] by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order Discovery Order [Disputed]) (Williams, Fred) (Entered: 11/01/2019)
11/01/2019	39	Joint MOTION Motion for Entry of Docket Control Order by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order Proposed Docket Control Order)(Williams, Fred) (Entered: 11/01/2019)
11/01/2019	40	RESPONSE in Opposition re 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6) filed by Joe Andrew Salazar*. (Attachments: # 1 Declaration of Frances H. Stephenson, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit F, # 7 Exhibit H, # 8 Exhibit I, # 9 Exhibit J, # 10 Exhibit K, # 11 Exhibit L, # 12 Exhibit M, # 13 Exhibit N, # 14 Text of Proposed Order Order)(Culbertson, Geoffrey) (Entered: 11/01/2019)
11/01/2019	41	Unopposed MOTION Leave to File Under Seal by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Order)(Culbertson, Geoffrey) (Entered: 11/01/2019)
11/01/2019	42	SEALED ADDITIONAL ATTACHMENTS to Main Document: 40 Response in Opposition to Motion,. (Attachments: # 1 Exhibit E, # 2 Exhibit G, # 3 Exhibit O) (Culbertson, Geoffrey) (Entered: 11/01/2019)
11/04/2019	43	ORDER granting 36 Motion for Extension of Time to File Response to Defendant's Joint Motion to Dismiss. It is ORDERED that deadline to respond to Defendants Joint Motion to Dismiss is extended up to and including November 1, 2019. Signed by District Judge Robert W. Schroeder, III on 11/4/2019. (slo,) (Entered: 11/04/2019)
11/04/2019	44	ORDER granting 37 Joint MOTION for Extension of Time to File *Agreed Protective Order* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc. Parties shall have up to and including 11/7/2019 tosubmit their agreed proposed protective order. Scheduling Conference RESET for 11/21/2019 10:45 AM in Ctrm 319 (Texarkana) before District Judge Robert W. Schroeder III. Signed by District Judge Robert W. Schroeder, III on 11/4/2019. (slo,) (Entered: 11/04/2019)
11/07/2019	45	Joint MOTION for Extension of Time to File *Agreed Protective Order (Second)* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order) (Williams, Fred) (Entered: 11/07/2019)
11/08/2019	46	ORDER granting 45 Joint MOTION for Extension of Time to File *Agreed Protective Order (Second)* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc. It is ORDERED that the Parties shall have up to and including 11/14/2019 to submit their agreed proposed protective order. Signed by District Judge Robert W. Schroeder, III on 11/8/2019. (slo,) (Entered: 11/08/2019)
11/13/2019	47	ORDER granting 41 Motion for Leave to File Under Seal. It is ORDERED that Plaintiff may file Exhibits E, G and O to its response in opposition to Defendants Joint Motion to Dismiss under seal. Signed by District Judge Robert W. Schroeder, III on 11/13/2019. (slo,) (Entered: 11/13/2019)

11/13/2019	48	Joint MOTION to Amend/Correct 39 Joint MOTION Motion for Entry of Docket Control Order by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 11/13/2019)
11/14/2019	49	Joint MOTION for Extension of Time to File *Agreed Protective Order (Third)* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order) (Williams, Fred) (Entered: 11/14/2019)
11/15/2019	50	ORDER granting 49 Motion for Extension of Time to Submit Protective Order. It is ORDERED that the Parties shall have up to and including 11/19/2019 to submit their agreed proposed protective order.Signed by District Judge Robert W. Schroeder, III on 11/15/2019. (slo,) (Entered: 11/15/2019)
11/19/2019	51	Joint MOTION for Entry of (Disputed) Protective Order by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A - Protective Order [Disputed])(Williams, Fred) (Entered: 11/19/2019)
11/20/2019	52	NOTICE of Attorney Appearance by Fred Irvin Williams on behalf of HTC Corp., HTC America, Inc. (Williams, Fred) (Entered: 11/20/2019)
11/20/2019	53	NOTICE of Attorney Appearance by Todd Eric Landis on behalf of HTC America, Inc., HTC Corp. (Landis, Todd) (Entered: 11/20/2019)
11/20/2019	54	NOTICE of Attorney Appearance by Parker Douglas Hancock on behalf of HTC America, Inc., HTC Corp. (Hancock, Parker) (Entered: 11/20/2019)
11/20/2019	55	MOTION to Intervene by HTC America, Inc., HTC Corp.. (Attachments: # 1 Exhibit A - Complaint in Intervention, # 2 Text of Proposed Order)(Williams, Fred) (Entered: 11/20/2019)
11/20/2019	56	REPLY to Response to Motion re 28 MOTION for Intra-District Transfer to the Marshall Division *filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc*. (Williams, Fred) (Entered: 11/20/2019)
11/20/2019	57	REPLY to Response to Motion re 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6) filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc*. (Williams, Fred) (Entered: 11/20/2019)
11/21/2019		Scheduling Conference held on 11/21/2019 before District Judge Robert W. Schroeder III. Counsel in attendance were Dariush Keyhani,Frances Stephenson, and Gil Gillam. (bas) (Entered: 11/21/2019)
11/21/2019	58	DOCKET CONTROL ORDER (Amended Pleadings due by 11/16/2020. Dispositive Motion Hearing set for 2/9/2021 10:00 AM in Ctrm 319 (Texarkana) before District Judge Robert W. Schroeder III. Markman Hearing set for 7/15/2020 10:00 AM in Ctrm 319 (Texarkana) before District Judge Robert W. Schroeder III. Motions in Limine due by 2/16/2021. Joint Pretrial Order due by 2/16/2021. Jury Selection set for 3/22/2021 09:00 AM in Ctrm 319 (Texarkana) before District Judge Robert W. Schroeder III. Jury Trial set for 3/22/2021 09:00 AM in Ctrm 319 (Texarkana) before District Judge Robert W. Schroeder III., Pretrial Conference set for 3/2/2021 10:00 AM in Ctrm 319 (Texarkana) before District Judge Robert W. Schroeder III.) Signed by District Judge Robert W. Schroeder, III on 11/21/2019. (slo,) (Entered: 11/22/2019)
11/21/2019	59	PROTECTIVE ORDER. Signed by District Judge Robert W. Schroeder, III on

		11/21/2019. (slo,) (Entered: 11/22/2019)
11/27/2019	60	NOTICE by Joe Andrew Salazar *Plaintiff Joe Andrew Salazar's Notice of Compliance With P.R. 3-1 and 3-2* (Culbertson, Geoffrey) (Entered: 11/27/2019)
12/03/2019	61	NOTICE by Joe Andrew Salazar *Regarding Motion to Intervene* (Culbertson, Geoffrey) (Entered: 12/03/2019)
12/05/2019	62	SUR-REPLY to Reply to Response to Motion re 28 MOTION for Intra-District Transfer to the Marshall Division *filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 12/05/2019)
12/05/2019	63	SUR-REPLY to Reply to Response to Motion re 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6) filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 12/05/2019)
12/11/2019	64	Unopposed MOTION for Extension of Time to File *(Serve) Initial and Additional Disclosures* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 12/11/2019)
12/13/2019	65	ORDER granting 64 Motion for Extension of Time to File. The Parties shall have up to and including 12/19/2019 to serve their initial and additional disclosures. Signed by District Judge Robert W. Schroeder, III on 12/13/19. (hma,) (Entered: 12/13/2019)
12/13/2019	66	DISCOVERY ORDER, re: 38 Joint MOTION Entry of Discovery Order [Disputed] filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc. Signed by District Judge Robert W. Schroeder, III on 12/13/19. (hma) (Entered: 12/13/2019)
12/13/2019	67	ORDER granting 55 Motion to Intervene. Signed by District Judge Robert W. Schroeder, III on 12/13/19. (hma,) (Entered: 12/13/2019)
12/13/2019	68	**FILED IN ERROR PER CLERK. PLEASE IGNORE. Document has been refiled. See Dkt. 70.** HTC CORP. AND HTC AMERICA, INC.'S COMPLAINT IN INTERVENTION filed by HTC Corp. and HTC America, Inc.(hma,) Modified on 12/17/2019 (slo,). (Entered: 12/13/2019)
12/13/2019	69	Unopposed MOTION for Hearing re 28 MOTION for Intra-District Transfer to the Marshall Division , 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6)* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 12/13/2019)
12/17/2019	70	HTC CORP. AND HTC AMERICA, INC.S COMPLAINT IN INTERVENTION filed by HTC CORP. AND HTC AMERICA, INC.(slo,) (Entered: 12/17/2019)
12/17/2019		***FILED IN ERROR, PER CLERK. Document # 68, Complaint in Intervention. PLEASE IGNORE. Document has been refiled. See Dkt #70. *** (slo,) (Entered: 12/17/2019)
12/17/2019	71	Unopposed MOTION for Extension of Time to File *a Motion for Mediation or a Notice of No Mediation* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 12/17/2019)
12/18/2019	72	ORDER granting 71 Motion for Extension of Time to File a motion to mediate or a notice that the parties do not agree to mediation. It is, therefore,ORDERED that the

		Parties shall have up to and including December 24, 2019 to file a motion to mediate or a notice that the parties do not agree to mediation. Signed by District Judge Robert W. Schroeder, III on 12/18/19. (lfs,) (Entered: 12/18/2019)
12/20/2019	73	NOTICE by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc *Regarding Mediation (Joint)* (Williams, Fred) (Entered: 12/20/2019)
12/20/2019	74	NOTICE by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc *of Compliance Regarding Service of Initial and Additional Disclosures* (Williams, Fred) (Entered: 12/20/2019)
12/31/2019	75	NOTICE of Change of Address by Fred Irvin Williams (Williams, Fred) (Entered: 12/31/2019)
01/02/2020	76	NOTICE of Attorney Appearance by Harry Lee Gillam, Jr on behalf of HTC America, Inc., HTC Corp. (Gillam, Harry) (Entered: 01/02/2020)
01/07/2020	77	ORDER granting 28 Motion for Intra-District Transfer. It is ORDERED that this matter is TRANSFERRED to the Marshall Division of this Court. Signed by District Judge Robert W. Schroeder, III on 1/7/2020. (slo,) (Entered: 01/07/2020)
01/07/2020	78	*Plaintiff Joe Andrew Salazar's* ANSWER to 70 Intervenor Complaint by Joe Andrew Salazar.(Culbertson, Geoffrey) (Entered: 01/07/2020)
01/21/2020	79	Unopposed MOTION to Withdraw *Parker Hancock* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 01/21/2020)
01/23/2020	80	ORDER granting 79 Motion to Withdraw. Signed by District Judge Rodney Gilstrap on 1/22/2020. (nkl,) (Entered: 01/23/2020)
01/29/2020	81	Unopposed MOTION for Extension of Time to Complete Discovery *Serve Invalidity Contentions and Accompanying Document Production* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Williams, Fred) (Additional attachment(s) added on 1/29/2020: # 1 Text of Proposed Order) (nkl,). (Entered: 01/29/2020)
01/30/2020	82	Unopposed MOTION to Amend/Correct 58 Order,,,, Terminate Motions,,,, Set Deadlines/Hearings,,, by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Amended Docket Control Order)(Culbertson, Geoffrey) (Entered: 01/30/2020)
02/04/2020	83	FIRST AMENDED DOCKET CONTROL ORDER re 82 Unopposed MOTION to Amend/Correct 58 Order,,,, Terminate Motions,,,, Set Deadlines/Hearings,,, filed by Joe Andrew Salazar, 81 Unopposed MOTION for Extension of Time to Complete Discovery *Serve Invalidity Contentions and Accompanying Document Production* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp.., SCHEDULING ORDER:(Pretrial Conference set for 12/28/2020 09:00 AM before District Judge Rodney Gilstrap., Amended Pleadings due by 5/6/2020., Jury Selection set for 2/1/2021 09:00AM before District Judge Rodney Gilstrap., Markman Hearing set for 7/22/2020 01:30 PM before District Judge Rodney Gilstrap., Motions in Limine due by 12/7/2020., Proposed Pretrial Order due by 12/21/2020.). Signed by District Judge Rodney Gilstrap on 2/4/2020. (nkl,) (Entered: 02/04/2020)
02/25/2020	84	NOTICE of Attorney Appearance by John Wittenzellner on behalf of AT&T Mobility

		LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc (Wittenzellner, John) (Entered: 02/25/2020)
03/19/2020	85	NOTICE by Joe Andrew Salazar *Notice of Compliance Local Patent Rule 4-1* (Culbertson, Geoffrey) (Entered: 03/19/2020)
04/08/2020	86	NOTICE by Joe Andrew Salazar *Notice of Compliance Local Patent Rule 4-2* (Culbertson, Geoffrey) (Entered: 04/08/2020)
04/10/2020	87	CORPORATE DISCLOSURE STATEMENT filed by T-Mobile USA Inc identifying Corporate Parent T-Mobile US, Inc. for T-Mobile USA Inc. (Williams, Fred) (Entered: 04/10/2020)
04/18/2020	88	CORPORATE DISCLOSURE STATEMENT filed by Sprint United Management Company identifying Corporate Parent Sprint Corporation, Inc. for Sprint United Management Company. (Williams, Fred) (Entered: 04/18/2020)
04/29/2020	89	Unopposed MOTION for Extension of Time to File *Joint Claim Construction Statement* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 04/29/2020)
04/30/2020	90	ORDER granting 89 Motion for Extension of Time to Comply with Patent Rule 4-3. Signed by District Judge Rodney Gilstrap on 4/30/2020. (nkl,) (Entered: 04/30/2020)
05/01/2020	91	Joint Claim Construction and Prehearing Statement by Joe Andrew Salazar. (Attachments: # 1 Exhibit A - US Patent 5,802.467, # 2 Exhibit B - Plaintiff's Proposed Constructions and Evidence, # 3 Exhibit C - Defendants and Intervenor's Proposed Constructions and Evidence)(Culbertson, Geoffrey) (Entered: 05/01/2020)
05/08/2020		NOTICE of Hearing:Markman Hearing RESET for 7/24/2020 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. ***Please note that the DATE and TIME for the hearing have changed.***(jml) (Entered: 05/08/2020)
05/27/2020	92	Unopposed MOTION to Amend/Correct 59 Protective Order, Terminate Motions by Joe Andrew Salazar. (Attachments: # 1 First Amended Protective Order)(Culbertson, Geoffrey) (Entered: 05/27/2020)
05/29/2020	93	FIRST AMENDED PROTECTIVE ORDER. Signed by District Judge Rodney Gilstrap on 5/29/2020. (nkl,) (Entered: 05/29/2020)
06/03/2020	94	MOTION for Leave to File *Supplemental Brief in Support of Their Motion to Dismiss* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A, # 2 Text of Proposed Order)(Williams, Fred) (Entered: 06/03/2020)
06/03/2020	95	Additional Attachments to Main Document: 94 MOTION for Leave to File *Supplemental Brief in Support of Their Motion to Dismiss*.. (Attachments: # 1 Exhibit 1)(Williams, Fred) (Entered: 06/03/2020)
06/10/2020	96	ORDER - The Court hereby appoints Mr. Donald Tiller as the Courts technical advisor in the above-captioned case. Signed by District Judge Rodney Gilstrap on 6/9/2020. (nkl,) (Entered: 06/10/2020)
06/10/2020	97	CLAIM CONSTRUCTION BRIEF filed by Joe Andrew Salazar. (Attachments: # 1 Declaration of Anya Engel, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, #

		6 Exhibit E, # 7 Exhibit F, # 8 Exhibit G, # 9 Exhibit H, # 10 Exhibit I)(Culbertson, Geoffrey) (Entered: 06/10/2020)
06/17/2020	98	RESPONSE in Opposition re 94 MOTION for Leave to File *Supplemental Brief in Support of Their Motion to Dismiss filed by Joe Andrew Salazar*. (Attachments: # 1 Declaration of Frances H. Stephenson)(Culbertson, Geoffrey) (Entered: 06/17/2020)
06/19/2020	99	Unopposed MOTION Leave to Amend First Amended Docket Control Order re 83 Order,,,, Terminate Motions,,,, Scheduling Order,,, by Joe Andrew Salazar. (Attachments: # 1 Declaration of Anya Engel, # 2 Text of Proposed Order Second Amended Docket Control Order)(Culbertson, Geoffrey) (Entered: 06/19/2020)
06/23/2020	100	ORDER re 99 Unopposed MOTION Leave to Amend First Amended Docket Control Order re 83 Order,,,, Terminate Motions,,,, Scheduling Order,,, filed by Joe Andrew Salazar., Pretrial Conference set for 1/19/2021 09:00 AM before District Judge Rodney Gilstrap., Motions in Limine due by 12/14/2020. Signed by District Judge Rodney Gilstrap on 6/22/2020. (nkl,) (Entered: 06/23/2020)
06/24/2020	101	REPLY to Response to Motion re 94 MOTION for Leave to File *Supplemental Brief in Support of Their Motion to Dismiss filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Williams, Fred) (Entered: 06/24/2020)
06/24/2020	102	CLAIM CONSTRUCTION BRIEF filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Affidavit Declaration of John Wittenzellner, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C)(Landis, Todd) (Entered: 06/24/2020)
07/01/2020	103	REPLY to 102 Claim Construction Brief, *filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 07/01/2020)
07/02/2020	104	SUR-REPLY to Reply to Response to Motion re 94 MOTION for Leave to File *Supplemental Brief in Support of Their Motion to Dismiss filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 07/02/2020)
07/07/2020		NOTICE of Hearing:Markman Hearing RESET for 7/24/2020 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. (jml) (Entered: 07/07/2020)
07/08/2020	105	Joint Claim Construction Chart Pursuant to Patent Rule 4-5(d) by Joe Andrew Salazar. (Attachments: # 1 Exhibit A)(Culbertson, Geoffrey) (Entered: 07/08/2020)
07/15/2020	106	Unopposed MOTION Motion to Reset Markman Hearing for Video Conference by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 07/15/2020)
07/17/2020		NOTICE of Hearing:Markman Hearing RESET for 7/24/2020 09:00 AM before District Judge Rodney Gilstrap. ***PLEASE NOTE that the hearing will be conducted via VIDEO CONFERENCE.*** Instructions will be emailed to counsel.(jml) (Entered: 07/17/2020)
07/21/2020	107	ORDER - The Court issues this Order sua sponte re 105 Claim Construction Chart or Claim Construction and Prehearing Statement filed by Joe Andrew Salazar. Signed by District Judge Rodney Gilstrap on 7/21/2020. (nkl,) (Entered: 07/21/2020)
07/22/2020	108	Revised Joint Claim Construction Chart Pursuant to Patent Rule 4-5(d) by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A)(Williams, Fred) (Entered: 07/22/2020)

07/24/2020	109	**FILED IN ERROR** Minute Entry for proceedings held before District Judge Rodney Gilstrap: Markman Hearing held on 7/24/2020. (Court Reporter Shelly Holmes, CSR-TCRR.) (jml) Modified on 7/24/2020 (nkl,). (Entered: 07/24/2020)
07/24/2020	110	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Markman Hearing held on 7/24/2020. (Court Reporter Shelly Holmes, CSR-TCRR.) (jml) (Entered: 07/24/2020)
07/30/2020	111	Unopposed MOTION Leave to Supplement Claim Construction Record by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 07/30/2020)
07/30/2020	112	SUPPLEMENTAL CLAIM CONSTRUCTION BRIEF filed by Joe Andrew Salazar. (Culbertson, Geoffrey) (Entered: 07/30/2020)
08/05/2020	113	Unopposed MOTION for Leave to File *Concise Response to Plaintiff's Supplemental Claim Construction Brief* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 08/05/2020)
08/05/2020	114	RESPONSE TO PLAINTIFF'S SUPPLEMENTAL CLAIM CONSTRUCTION BRIEF filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A)(Williams, Fred) (Entered: 08/05/2020)
08/13/2020	115	Unopposed MOTION for Leave to File Reply to Further Supplement the Claim Construction Record re 114 Claim Construction Brief, by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 08/13/2020)
08/13/2020	116	Plaintiff's REPLY to Defendants' and Intervenors' Supplemental Claim Construction Response 114 Claim Construction Brief, *filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 08/13/2020)
08/19/2020	117	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Proceedings held on 7/24/20 (Claim Construction Hearing) before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shelly Holmes, CSR, TCRR,Telephone number: (903) 923-7464 (Shelly_Holmes@txed.uscourts.gov). <P>**NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov<P>** Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER.. Motion to Redact due 9/9/2020. Release of Transcript Restriction set for 11/17/2020. (sholmes,) (Entered: 08/19/2020)
08/25/2020	118	ORDER granting 111 Motion Leave to Supplement Claim Construction Record ; granting 113 Motion for Leave to File Concise Response to Plaintiffs Supplemental Claim Construction Brief; granting 115 Motion for Leave to File Reply to Further Supplement the Claim Construction Record. Signed by District Judge Rodney Gilstrap on 8/25/2020. (nkl,) (Entered: 08/25/2020)
08/28/2020	119	Joint MOTION for Entry of Covid-19 Addendum to First Amended Protective Order by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Covid-19 Addendum to

		First Amended Protective Order)(Culbertson, Geoffrey) (Entered: 08/28/2020)
08/28/2020	120	**FILED IN ERROR PER ATTORNEY** Unopposed MOTION for Leave to Amend Docket Control Order (Dkt. 100) re 100 Order,, Terminate Motions,, Scheduling Order, by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Proposed Amended Docket Control Order)(Culbertson, Geoffrey) Modified on 8/31/2020 (nkl,). (Entered: 08/28/2020)
08/28/2020	121	Unopposed MOTION for Leave to Amend Docket Control Order (Dkt. 100) re 100 Order,, Terminate Motions,, Scheduling Order, *(Corrected)* by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Corrected Amended Docket Control Order) (Culbertson, Geoffrey) (Entered: 08/28/2020)
08/31/2020		*****FILED IN ERROR PER ATTORNEY. Document # 120, Unopposed MOTION for Leave to Amend Docket Control Order. PLEASE IGNORE.***** (nkl,) (Entered: 08/31/2020)
08/31/2020	122	COVID-19 ADDENDUM TO FIRST AMENDED PROTECTIVE ORDER. Signed by District Judge Rodney Gilstrap on 8/31/2020. (nkl,) (Entered: 08/31/2020)
08/31/2020	123	**WITHDRAWN PER ORDER 188** **First MOTION to Compel *Document Production* by Joe Andrew Salazar. (Attachments: # 1 Exhibit A, # 2 Text of Proposed Order)(Culbertson, Geoffrey) Modified on 2/11/2021 (nkl,). (Entered: 08/31/2020)**
09/04/2020	124	NOTICE by Joe Andrew Salazar re 123 First MOTION to Compel *Document Production Notice of Corrected Certificate of Service* (Attachments: # 1 Exhibit A- Corrected Certificate of Service)(Culbertson, Geoffrey) (Entered: 09/04/2020)
09/04/2020	125	THIRD AMENDED DOCKET CONTROL ORDER re 121 Motion for Leave to Amend Docket Control Order. Signed by District Judge Rodney Gilstrap on 9/4/2020. (nkl,) (Entered: 09/04/2020)
09/04/2020	126	**WITHDRAWN PER ORDER 188** Second MOTION to Compel *Document Production* by Joe Andrew Salazar. (Attachments: # 1 Exhibit A-Discovery Letter, # 2 Text of Proposed Order)(Culbertson, Geoffrey) Modified on 2/11/2021 (nkl,). (Entered: 09/04/2020)
09/15/2020	127	Joint MOTION To Take Rule 30(b)(6) Depositions Out of Time by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 09/15/2020)
09/15/2020	128	*****FILED IN ERROR***** RESPONSE to Motion re 123 First MOTION to Compel *Document Production filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Text of Proposed Order)(Williams, Fred) Modified on 9/16/2020 (ch,). (Entered: 09/15/2020)
09/16/2020	129	ORDER granting 127 Motion To Take Rule 30(b)(6) Depositions Out of Time. Signed by District Judge Rodney Gilstrap on 9/16/2020. (nkl,) (Entered: 09/16/2020)
09/16/2020		*****FILED IN ERROR. PER ATTORNEY Document # 128, Response to Motion.**

		PLEASE IGNORE.*** (ch,) (Entered: 09/16/2020)
09/16/2020	130	RESPONSE to Motion re 123 First MOTION to Compel *Document Production filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 Exhibit A, # 2 Text of Proposed Order)(Gillam, Harry) (Entered: 09/16/2020)
09/18/2020	131	CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER. Signed by District Judge Rodney Gilstrap on 9/18/2020. (ch,) (Entered: 09/18/2020)
09/18/2020	132	RESPONSE to Motion re 126 Second MOTION to Compel *Document Production filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 09/18/2020)
09/22/2020	133	MOTION to Compel *Responses to Interrogatories and Requests for Admission* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A, # 2 Text of Proposed Order)(Williams, Fred) (Entered: 09/22/2020)
09/23/2020	134	ORDER to Pay Technical Advisor. Signed by District Judge Rodney Gilstrap on 9/22/2020. (nkl,) (Entered: 09/23/2020)
09/30/2020	135	RESPONSE to Motion re 133 MOTION to Compel *Responses to Interrogatories and Requests for Admission filed by Joe Andrew Salazar*. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 09/30/2020)
10/05/2020	136	NOTICE by Joe Andrew Salazar *Joint Notice Regarding Mediation* (Culbertson, Geoffrey) (Entered: 10/05/2020)
10/08/2020	137	NOTICE by Joe Andrew Salazar *Notice of Compliance Regarding Disclosures for Expert Witnesses* (Culbertson, Geoffrey) (Entered: 10/08/2020)
10/09/2020	138	MOTION To Sever and Stay by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Text of Proposed Order)(Williams, Fred) (Entered: 10/09/2020)
10/23/2020	139	SEALED RESPONSE in Opposition to Motion re 138 MOTION To Sever and Stay filed by Joe Andrew Salazar. (Culbertson, Geoffrey) (Entered: 10/23/2020)
10/28/2020	140	Unopposed MOTION for Leave to Take the Deposition of Chris Bakewell Outside of the Discovery Period by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Gillam, Harry) (Entered: 10/28/2020)
10/29/2020	141	ORDER granting 140 Motion for Leave to Take the Deposition of Chris Bakewell Outside of the Discovery Period. Signed by District Judge Rodney Gilstrap on 10/28/2020. (nkl,) (Entered: 10/29/2020)
11/02/2020	142	REPLY to Response to Motion re 138 MOTION To Sever and Stay *filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc*. (Williams, Fred) (Entered: 11/02/2020)
11/03/2020	143	SEALED MOTION *for Summary Judgment of Non-Infringement of the Asserted Claims of the '497 Patent* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon

		Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Declaration of John Wittenzellner, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Exhibit G, # 9 Exhibit H, # 10 Exhibit I, # 11 Exhibit J, # 12 Exhibit K, # 13 Exhibit L, # 14 Exhibit M, # 15 Text of Proposed Order)(Williams, Fred) (Entered: 11/03/2020)
11/03/2020	144	SEALED MOTION *FOR PARTIAL SUMMARY JUDGMENT THAT 35 U.S.C. § 287(a) IS NOT APPLICABLE IN THIS CASE* by Joe Andrew Salazar. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H)(Culbertson, Geoffrey) (Entered: 11/03/2020)
11/03/2020	145	Opposed SEALED MOTION *Daubert Motion to Exclude Portions of the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 J. Wittenzellner Declaration, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Exhibit G, # 9 Exhibit H, # 10 Exhibit I, # 11 Text of Proposed Order)(Williams, Fred) (Entered: 11/03/2020)
11/03/2020	146	SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judicata* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A, # 2 Text of Proposed Order)(Williams, Fred) (Entered: 11/03/2020)
11/03/2020	147	Opposed SEALED MOTION *to Exclude Certain Testimony for Mr. Dennis M. Giuffre* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Text of Proposed Order)(Williams, Fred) (Entered: 11/03/2020)
11/10/2020	148	SEALED PATENT SUR-REPLY to Reply to Response to PATENT Motion re 138 MOTION To Sever and Stay *filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 11/10/2020)
11/12/2020	149	REDACTION to 148 Sealed PATENT Sur-Reply to Reply to Response to PATENT Motion by Joe Andrew Salazar. (Culbertson, Geoffrey) (Entered: 11/12/2020)
11/12/2020	150	REDACTION to 139 Sealed Response to Motion *to Sever and Stay Claims* by Joe Andrew Salazar. (Culbertson, Geoffrey) (Entered: 11/12/2020)
11/12/2020	151	REDACTION to 144 SEALED MOTION *FOR PARTIAL SUMMARY JUDGMENT THAT 35 U.S.C. § 287(a) IS NOT APPLICABLE IN THIS CASE* by Joe Andrew Salazar. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, # 7 Exhibit G, # 8 Exhibit H)(Culbertson, Geoffrey) (Entered: 11/12/2020)
11/13/2020	152	Sealed Plaintiff's Motion to Strike or, Alternatively, to Deny as Moot Defendants' and Intervenors' Motion for Summary Judgment Under the Kessler Doctrine and Res Judicata (Culbertson, Geoffrey) (Entered: 11/13/2020)
11/16/2020	153	Unopposed MOTION for Extension of Time to File Response to Defendants' and Intervenors' Motion to Exclude Certain Testimony of Guiffre re 147 Opposed SEALED MOTION *to Exclude Certain Testimony for Mr. Dennis M. Giuffre* by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 11/16/2020)
11/16/2020	154	SEALED RESPONSE to Motion re 144 SEALED MOTION *FOR PARTIAL SUMMARY JUDGMENT THAT 35 U.S.C. § 287(a) IS NOT APPLICABLE IN THIS CASE* filed by

		AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Affidavit of J. Wittenzellner, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Exhibit G, # 9 Exhibit H, # 10 Exhibit I, # 11 Exhibit J, # 12 Exhibit L, # 13 Exhibit M, # 14 Exhibit N, # 15 Exhibit O, # 16 Exhibit P, # 17 Exhibit K, # 18 Text of Proposed Order)(Williams, Fred) (Entered: 11/16/2020)
11/17/2020	155	MOTION for Extension of Time to File Response to Defendants' and Intervenors' Motion for Summary Judgment Under the Kessler Doctrine and Res Judicata re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judicata* by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 11/17/2020)
11/17/2020	156	SEALED RESPONSE to Motion re 143 SEALED MOTION *for Summary Judgment of Non-Infringement of the Asserted Claims of the '497 Patent* filed by Joe Andrew Salazar. (Attachments: # 1 Declaration of Anya Engel, # 2 Exhibit A, # 3 Exhibit B, # 4 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 11/17/2020)
11/17/2020	157	SEALED RESPONSE to Motion re 145 Opposed SEALED MOTION *Daubert Motion to Exclude Portions of the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman* filed by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 11/17/2020)
11/18/2020	158	SEALED PATENT ADDITIONAL ATTACHMENTS to Main Document: 157 Sealed Response to Motion,. (Attachments: # 1 Declaration of Anya Engel, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Exhibit G, # 9 Exhibit H, # 10 Exhibit I)(Culbertson, Geoffrey) (Entered: 11/18/2020)
11/18/2020	159	Unopposed MOTION for Leave to Exceed the Deadline to File Plaintiff's Response in Opposition to Defendants' and Intervenors' Daubert Motion to Exclude the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 11/18/2020)
11/18/2020	160	REDACTION to 152 Sealed Document *Plaintiff's Motion to Strike or, Alternatively, to Deny as Moot Defendants' and Intervenors' Motion for Summary Judgment Under the Kessler Doctrine and Res Judicata* by Joe Andrew Salazar. (Culbertson, Geoffrey) (Entered: 11/18/2020)
11/19/2020	161	RESPONSE in Opposition re 155 MOTION for Extension of Time to File Response to Defendants' and Intervenors' Motion for Summary Judgment Under the Kessler Doctrine and Res Judicata re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judi filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 11/19/2020)*
11/19/2020	162	RESPONSE to 152 Sealed Document *filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 Text of Proposed Order) (Williams, Fred) (Entered: 11/19/2020)
11/20/2020	163	ORDER - Jury Selection set for 5/10/2021 09:00AM before District Judge Rodney Gilstrap. Signed by District Judge Rodney Gilstrap on 11/20/2020. (nkl,) (Entered: 11/20/2020)
11/20/2020	164	SEALED RESPONSE to Motion re 147 Opposed SEALED MOTION *to Exclude Certain Testimony for Mr. Dennis M. Giuffre* filed by Joe Andrew Salazar. (Attachments:

		# 1 Declaration of Frances H. Stephenson, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C, # 5 Exhibit D, # 6 Exhibit E, # 7 Exhibit F, # 8 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 11/20/2020)
11/24/2020	165	Unopposed MOTION for Leave to Exceed Page Limit by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 11/24/2020)
11/24/2020	166	REPLY to Response to Motion re 144 SEALED MOTION *FOR PARTIAL SUMMARY JUDGMENT THAT 35 U.S.C. § 287(a) IS NOT APPLICABLE IN THIS CASE filed by Joe Andrew Salazar*. (Attachments: # 1 Declaration of Frances H. Stephenson, # 2 Exhibit A, # 3 Exhibit B, # 4 Exhibit C)(Culbertson, Geoffrey) (Entered: 11/24/2020)
11/24/2020	167	SEALED ADDITIONAL ATTACHMENTS to Main Document: 166 Reply in Support of His Motion for Partial Summary Judgment (Attachments: # 1 Exhibit D)(Culbertson, Geoffrey) (Entered: 11/24/2020)
11/25/2020	168	ORDER granting 165 Motion for Leave to Exceed Page Limit. Signed by District Judge Rodney Gilstrap on 11/25/2020. (nkl,) (Entered: 11/25/2020)
11/25/2020	169	REPLY to Response to Motion re 155 MOTION for Extension of Time to File Response to Defendants' and Intervenors' Motion for Summary Judgment Under the Kessler Doctrine and Res Judicata re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judi filed by Joe Andrew Salazar. (Culbertson, Geoffrey) (Entered: 11/25/2020)*
11/25/2020	170	REPLY to Response to Motion re 147 Opposed SEALED MOTION *to Exclude Certain Testimony for Mr. Dennis M. Giuffre filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 Exhibit F)(Williams, Fred) (Entered: 11/25/2020)
11/25/2020	171	REPLY to Response to Motion re 145 Opposed SEALED MOTION *Daubert Motion to Exclude Portions of the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Williams, Fred) (Entered: 11/25/2020)
11/25/2020	172	REPLY to Response to Motion re 143 SEALED MOTION *for Summary Judgment of Non-Infringement of the Asserted Claims of the '497 Patent filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 J. Wittenzellner Declaration, # 2 Exhibit N)(Williams, Fred) (Entered: 11/25/2020)
11/27/2020	173	REPLY to Response to Motion re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judicata Plaintiff's Reply in Support of his Motion to Strike Dkt. 146 filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 11/27/2020)
12/01/2020	174	SUR-REPLY to Reply to Response to Motion re 144 SEALED MOTION *FOR PARTIAL SUMMARY JUDGMENT THAT 35 U.S.C. § 287(a) IS NOT APPLICABLE IN THIS CASE filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 Declaration of John Wittenzellner, # 2 Exhibit Q)(Williams, Fred) (Entered: 12/01/2020)
12/01/2020	175	SEALED CORRECTED ATTACHMENT to Main Document: 164 Sealed Response to Motion,. (Attachments: # 1 Exhibit D)(Culbertson, Geoffrey) (Entered: 12/01/2020)
12/01/2020	176	SUR-REPLY to Reply to Response to Motion re 155 MOTION for Extension of Time to File Response to Defendants' and Intervenors' Motion for Summary Judgment Under the

		Kessler Doctrine and Res Judicata re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judi filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Williams, Fred) (Entered: 12/01/2020)*
12/02/2020	177	SUR-REPLY to Reply to Response to Motion re 145 Opposed SEALED MOTION *Daubert Motion to Exclude Portions of the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman filed by Joe Andrew Salazar*. (Attachments: # 1 Declaration of Anya Engel, # 2 Exhibit A, # 3 Exhibit B)(Culbertson, Geoffrey) (Entered: 12/02/2020)
12/02/2020	178	SUR-REPLY to Reply to Response to Motion re 143 SEALED MOTION *for Summary Judgment of Non-Infringement of the Asserted Claims of the '497 Patent filed by Joe Andrew Salazar*. (Attachments: # 1 Declaration of Frances H. Stephenson, # 2 Exhibit C) (Culbertson, Geoffrey) (Entered: 12/02/2020)
12/02/2020	179	SUR-REPLY to Reply to Response to Motion re 147 Opposed SEALED MOTION *to Exclude Certain Testimony for Mr. Dennis M. Giuffre filed by Joe Andrew Salazar*. (Attachments: # 1 Exhibit G)(Culbertson, Geoffrey) (Entered: 12/02/2020)
12/03/2020	180	RESPONSE to 152 Sealed Document *Sur-Reply in Opposition to Plaintiff's Motion to Strike or, Alternatively, to Deny as Moot Defendants' and Intervenors' Motion for Summary Judgement Under the Kessler Doctrine and Res Judicata filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Williams, Fred) (Entered: 12/03/2020)
12/09/2020	181	**DEFICIENT DOCUMENT** Joint MOTION for Leave to Amend Docket Control Order (Dkt. 125) by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Proposed Amended Docket Control Order)(Culbertson, Geoffrey) Modified on 12/9/2020 (nkl,). (Entered: 12/09/2020)
12/09/2020		NOTICE of Deficiency regarding the Joint MOTION for Leave to Amend Docket Control Order submitted document 181 does not contain a Certificate of Conference. Correction should be made by one business day. (nkl,) (Entered: 12/09/2020)
12/09/2020	182	Joint MOTION for Leave to Amend Docket Control Order (Dkt. 125) by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Proposed Amended Docket Control Order)(Culbertson, Geoffrey) (Entered: 12/09/2020)
01/06/2021		NOTICE of Hearing: Pretrial Conference **RESET** for 4/13/2021 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. (aeb) (Entered: 01/06/2021)
02/02/2021	183	NOTICE by Joe Andrew Salazar *Notice of Compliance* (Culbertson, Geoffrey) (Entered: 02/02/2021)
02/03/2021	184	AMENDED DOCKET CONTROL ORDER re 182 Joint MOTION for Leave to Amend Docket Control Order (Dkt. 125) filed by Joe Andrew Salazar., Pretrial Conference set for 4/13/2021 09:00 AM before District Judge Rodney Gilstrap., Motions in Limine due by 2/26/2021., Proposed Pretrial Order due by 3/5/2021. Signed by District Judge Rodney Gilstrap on 2/3/2021. (nkl,) (Entered: 02/03/2021)
02/04/2021	185	ORDER granting 153 Motion for Extension of Time to File Response to Defendants and Intervenors Motion to Exclude Certain Testimony of Mr. Dennis M. Guiffre. Signed by District Judge Rodney Gilstrap on 2/4/2021. (nkl,) (Entered: 02/04/2021)
02/04/2021	186	ORDER granting 159 Motion Unopposed MOTION for Leave to Exceed the Deadline to

		File Plaintiff's Response in Opposition to Defendants' and Intervenors' Daubert Motion to Exclude the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman. Signed by District Judge Rodney Gilstrap on 2/4/2021. (ch,) (Entered: 02/04/2021)
02/10/2021	187	NOTICE by Joe Andrew Salazar *Notice of Withdrawal Regarding Dkt. Nos. 123 & 126* (Culbertson, Geoffrey) (Entered: 02/10/2021)
02/11/2021	188	ORDER re 187 Notice (Other) filed by Joe Andrew Salazar withdrawing 126 Second MOTION to Compel *Document Production* filed by Joe Andrew Salazar, 123 First MOTION to Compel *Document Production* filed by Joe Andrew Salazar. Signed by District Judge Rodney Gilstrap on 2/11/2021. (nkl,) (Entered: 02/11/2021)
02/26/2021	189	NOTICE by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc *Request for Daily Transcripts and Realtime Feed for Court Proceedings* (Williams, Fred) (Entered: 02/26/2021)
02/26/2021	190	NOTICE by Joe Andrew Salazar *Request for Daily Transcripts of Court Proceedings* (Culbertson, Geoffrey) (Entered: 02/26/2021)
02/26/2021	191	Opposed SEALED MOTION *in Limine* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 02/26/2021)
02/26/2021	192	STIPULATION *of Agreed Motions in Limine* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 02/26/2021)
02/26/2021	193	MOTION in Limine by Joe Andrew Salazar. (Culbertson, Geoffrey) (Additional attachment(s) added on 3/1/2021: # 1 Text of Proposed Order) (nkl,). (Entered: 02/26/2021)
03/05/2021	194	RESPONSE to Motion re 191 Opposed SEALED MOTION *in Limine filed by Joe Andrew Salazar*. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 03/05/2021)
03/05/2021	195	Joint MOTION for Leave to Amend Docket Control Order re 184 Order,, Terminate Motions,, Scheduling Order, by Joe Andrew Salazar. (Attachments: # 1 Text of Proposed Order Proposed Amended Docket Control Order)(Culbertson, Geoffrey) (Entered: 03/05/2021)
03/05/2021	196	RESPONSE to Motion re 193 MOTION in Limine *filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc*. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 03/05/2021)
03/09/2021	197	FOURTH AMENDED DOCKET CONTROL ORDER granting 195 Joint MOTION for Leave to Amend Docket Control Order re 184 Order. Pretrial Conference set for 4/13/2021 09:00 AM before District Judge Rodney Gilstrap., Jury Selection set for 5/10/2021 09:00AM before District Judge Rodney Gilstrap., Proposed Pretrial Order due by 3/10/2021. Signed by District Judge Rodney Gilstrap on 3/9/2021. (ch,) (Entered: 03/10/2021)
03/10/2021	198	Proposed Pretrial Order *Joint Final Pretrial Order* by Joe Andrew Salazar. (Attachments: # 1 Exhibit A, # 2 Exhibit B, # 3 Exhibit C, # 4 Exhibit D, # 5 Exhibit E, # 6 Exhibit F, #

		7 Exhibit G, # 8 Exhibit H, # 9 Exhibit I, # 10 Exhibit J, # 11 Exhibit K, # 12 Exhibit L) (Culbertson, Geoffrey) (Entered: 03/10/2021)
03/22/2021	199	ORDER - The Court issues this Order sua sponte. The Court ORDERS the parties to mediate in this case promptly and at a mutually agreeable date, but no later than thirty (30) days from the date of this Order. Signed by District Judge Rodney Gilstrap on 3/22/2021. (nkl,) (Entered: 03/22/2021)
03/24/2021	200	ORDER granting 94 Motion for Leave to File Supplemental Brief in Support of Their Motion to Dismiss. Signed by District Judge Rodney Gilstrap on 3/23/2021. (nkl,) (Entered: 03/24/2021)
04/01/2021		Set/Reset Hearings: The Pretrial Conference originally set for 4/13/2021 at 9:00 AM is RESET for 4/26/2021 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. (aeb) (Entered: 04/01/2021)
04/01/2021	201	ORDER - Court issues this Order sua sponte. Mediation Completion due by 4/30/2021. Signed by District Judge Rodney Gilstrap on 4/1/2021. (ch,) (Entered: 04/05/2021)
04/08/2021	202	MOTION for Leave to Extend Deadline to Respond to Dkt. 146 re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judicata* by Joe Andrew Salazar. (Attachments: # 1 Declaration of Geoffrey Culbertson, # 2 Exhibit A, # 3 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 04/08/2021)
04/08/2021	203	RESPONSE in Opposition re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judicata filed by Joe Andrew Salazar*. (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 04/08/2021)
04/09/2021	204	**FILED IN ERROR PER ATTORNEY. PLEASE IGNORE** Joint MOTION *for Submission of Juror Questionnaire* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Exhibit A)(Williams, Fred) Modified on 4/12/2021 (klc,). (Entered: 04/09/2021)
04/12/2021		***FILED IN ERROR. Document # 204,. PLEASE IGNORE.*** (klc,) (Entered: 04/12/2021)
04/15/2021	205	SEALED REPLY to Response to Motion re 146 SEALED MOTION for Summary Judgment Under the Kessler Doctrine and Res Judicata filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Williams, Fred) (Entered: 04/15/2021)
04/19/2021	206	NOTICE of Attorney Appearance by Andrew Thompson (Tom) Gorham on behalf of AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc (Gorham, Andrew) (Entered: 04/19/2021)
04/22/2021		NOTICE of CANCELLATION OF PRETRIAL CONFERENCE: The Pretrial Conference set for 4/26/2021 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap is CANCELLED.(aeb) (Entered: 04/22/2021)
04/23/2021	207	SUR-REPLY to Reply to Response to Motion re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judicata filed by Joe Andrew Salazar*. (Culbertson, Geoffrey) (Entered: 04/23/2021)
04/23/2021	208	RESPONSE to Motion re 202 MOTION for Leave to Extend Deadline to Respond to Dkt. 146 re 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine*

		and Res Judicata filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Text of Proposed Order)(Williams, Fred) (Entered: 04/23/2021)
04/26/2021		NOTICE of Hearing: Pretrial Conference RESET for 5/11/2021 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. (aeb) (Entered: 04/26/2021)
04/26/2021		NOTICE of Jury Selection set for 6/4/2021 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. (aeb) (Entered: 04/26/2021)
05/03/2021		NOTICE of Jury Selection previously set for 6/4/2021 09:00 AM has been RESET for 6/3/2021 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. (aeb) (Entered: 05/03/2021)
05/04/2021	209	ORDER TO PURCHASE JURY MEALS. Signed by District Judge Rodney Gilstrap on 5/4/2021. (nkl,) (Entered: 05/05/2021)
05/04/2021	210	ORDER REGARDING EXHIBITS. Signed by District Judge Rodney Gilstrap on 5/4/2021. (nkl,) (Entered: 05/05/2021)
05/06/2021	211	REPORT of Mediation by David Folsom (Ret.). Mediation result: suspended (HTC Corp. and HTC America, Inc.)(Folsom, David) (Entered: 05/06/2021)
05/07/2021		NOTICE of Hearing: Pretrial Conference RESET for 5/11/2021 10:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. ***Please note that only the TIME for the hearing has changed.***(aeb) (Entered: 05/07/2021)
05/10/2021	212	NOTICE of Attorney Appearance - Pro Hac Vice by Adam Livingston on behalf of AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc. Filing fee $ 100, receipt number 0540-8404974. (Livingston, Adam) (Entered: 05/10/2021)
05/11/2021	213	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Initial Pretrial Conference held on 5/11/2021. (Court Reporter Shawn McRoberts, RMR, CRR.) (Attachments: # 1 Attorney Attendance Sheet) (aeb) (Entered: 05/11/2021)
05/12/2021	214	PAPER TRANSCRIPT REQUEST by Joe Andrew Salazar for proceedings held on May 11, 2021 Pretrial Hearing before Judge Rodney Gilstrap. (Culbertson, Geoffrey) (Forwarded to Shawn McRoberts) Modified on 5/12/2021 (ch,). (Entered: 05/12/2021)
05/12/2021	215	PAPER TRANSCRIPT REQUEST by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc for proceedings held on May 11, 2021 before Judge Rodney Gilstrap. (Forwarded to Shawn McRoberts) (Williams, Fred) Modified on 5/13/2021 (nkl,). (Entered: 05/12/2021)
05/17/2021	216	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Pretrial Conference Proceedings held on 05/11/2021 before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shawn McRoberts, RMR, CRR,Telephone number: (214) 753-2349. **NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov**

		Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Motion to Redact due 6/7/2021. Release of Transcript Restriction set for 8/15/2021. (klc,) (Entered: 05/17/2021)
05/21/2021	217	NOTICE by Joe Andrew Salazar *Notice of Proposed Agreed Order on Motions in Limine* (Attachments: # 1 Text of Proposed Order)(Culbertson, Geoffrey) (Entered: 05/21/2021)
05/21/2021	218	NOTICE by Joe Andrew Salazar *Notice of Revised Exhibit List* (Attachments: # 1 Exhibit Salazar Revised Exhibit List)(Culbertson, Geoffrey) (Entered: 05/21/2021)
05/21/2021	219	NOTICE by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC America, Inc., HTC Corp., Sprint United Management Company, T-Mobile USA Inc *Notice of Revised Exhibit List* (Attachments: # 1 Exhibit E - Defendants' and Intervenors' Revised Exhibit List)(Williams, Fred) (Entered: 05/21/2021)
05/21/2021	220	ORDER ON PRETRIAL MOTIONS AND MOTIONS IN LIMINE re 143 SEALED MOTION *for Summary Judgment of Non-Infringement of the Asserted Claims of the '497 Patent* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp., 147 Opposed SEALED MOTION *to Exclude Certain Testimony for Mr. Dennis M. Giuffre* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp., 193 MOTION in Limine filed by Joe Andrew Salazar, 133 MOTION to Compel *Responses to Interrogatories and Requests for Admission* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp., 27 SEALED MOTION *Joint Motion to Dismiss Under Rule 12(b)(6)* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., 144 SEALED MOTION *FOR PARTIAL SUMMARY JUDGMENT THAT 35 U.S.C. § 287(a) IS NOT APPLICABLE IN THIS CASE* filed by Joe Andrew Salazar, 146 SEALED MOTION *for Summary Judgment Under the Kessler Doctrine and Res Judicata* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp., 138 MOTION To Sever and Stay filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., 145 Opposed SEALED MOTION *Daubert Motion to Exclude Portions of the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp., 191 Opposed SEALED MOTION *in Limine* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp... Signed by District Judge Rodney Gilstrap on 5/21/2021. (nkl,) (Entered: 05/21/2021)
05/28/2021	221	ORDER re 138 MOTION To Sever and Stay filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc.. Signed by District Judge Rodney Gilstrap on 5/26/2021. (nkl,) (Entered: 05/28/2021)
05/28/2021	222	ORDER re 144 SEALED MOTION *FOR PARTIAL SUMMARY JUDGMENT THAT 35 U.S.C. § 287(a) IS NOT APPLICABLE IN THIS CASE* filed by Joe Andrew Salazar. Signed by District Judge Rodney Gilstrap on 5/25/2021. (nkl,) (Entered: 05/28/2021)
06/01/2021	223	ANSWER to 3 Amended Complaint , COUNTERCLAIM against Joe Andrew Salazar by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc..(Williams, Fred) (Entered: 06/01/2021)

06/21/2021	224	*Plaintiff Joe Andrew Salazar's* ANSWER to 223 Answer to Amended Complaint, Counterclaim by Joe Andrew Salazar.(Culbertson, Geoffrey) (Entered: 06/21/2021)
06/25/2021		NOTICE: Jury Selection set for 8/2/2021 09:00 AM in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. Jury Trial set for 8/2/2021 immediately following Jury Selection in Ctrm 106 (Marshall) before District Judge Rodney Gilstrap. (aeb) (Entered: 06/25/2021)
07/16/2021	225	ORDER denying as moot 155 MOTION for Extension of Time to File Response to Defendants' and Intervenors' Motion for Summary Judgment Under the Kessler Doctrine and Res Judicata re 146 SEALED MOTION for Summary Judgment Under the Kessler Doctrine and Res Judicata. Signed by District Judge Rodney Gilstrap on 7/16/2021. (ch,) (Entered: 07/16/2021)
07/21/2021		Sever Civil Action 2:21cv274 (nkl,) (Entered: 07/21/2021)
07/28/2021	226	ORDER re 147 Opposed SEALED MOTION *to Exclude Certain Testimony for Mr. Dennis M. Giuffre* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp.. Signed by District Judge Rodney Gilstrap on 7/28/2021. (nkl,) (Entered: 07/28/2021)
07/28/2021	227	ORDER re 145 Opposed SEALED MOTION *Daubert Motion to Exclude Portions of the Expert Report and Proffered Testimony of Plaintiff's Expert Witness, Dr. Oded Gottesman* filed by Sprint United Management Company, AT&T Mobility LLC, T-Mobile USA Inc, HTC America, Inc., Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., HTC Corp.. Signed by District Judge Rodney Gilstrap on 7/28/2021. (nkl,) (Entered: 07/28/2021)
07/29/2021	228	NOTICE of Attorney Appearance by Alan Joseph Robertson on behalf of Joe Andrew Salazar (Robertson, Alan) (Entered: 07/29/2021)
08/01/2021	229	STIPULATION *Joint Proposed Trial Management Procedures* by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Williams, Fred) (Entered: 08/01/2021)
08/02/2021	230	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Jury Selection held on 8/2/2021, Jury Trial Day 1 held on 8/2/2021. (Court Reporter Shawn McRoberts, RMR, CRR.) (Attachments: # 1 Attorney Attendance Sheet) (aeb) (Entered: 08/02/2021)
08/03/2021	231	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Jury Trial Day 2 held on 8/3/2021. (Court Reporter Shawn McRoberts, RMR, CRR.) (Attachments: # 1 Attorney Attendance Sheet) (aeb) (Entered: 08/03/2021)
08/04/2021	232	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Jury Trial Day 3 held on 8/4/2021. (Court Reporter Shawn McRoberts, RMR, CRR.) (Attachments: # 1 Attorney Attendance Sheet) (aeb) (Entered: 08/04/2021)
08/05/2021	233	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Jury Trial Day 4 held on 8/5/2021. (Court Reporter Shawn McRoberts, RMR, CRR.) (Attachments: # 1 Attorney Attendance Sheet) (aeb) (Entered: 08/05/2021)
08/06/2021		Minute Entry for proceedings held before District Judge Rodney Gilstrap: Informal Charge Conference held on 8/6/2021. No court reporter. (aeb) (Entered: 08/06/2021)
08/06/2021	234	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Jury Trial Day 5 held on 8/6/2021. (Court Reporter Shawn McRoberts, RMR, CRR.) (Attachments: # 1 Attorney Attendance Sheet) (aeb) (Entered: 08/08/2021)
08/09/2021	235	Defendants' Final Exhibit List for Jury Trial. (aeb) (Entered: 08/09/2021)

08/09/2021		NOTICE of Deficiency regarding the 236 submitted NO CERTIFICATE OF AUTHORIZATION TO FILE UNDER SEAL. Correction should be made by one business day (ch,) (Entered: 08/09/2021)
08/09/2021	238	SEALED Jury Notes. (aeb) (Entered: 08/09/2021)
08/09/2021	239	JURY VERDICT. (aeb) (Entered: 08/09/2021)
08/09/2021	240	SEALED Jury Verdict. (aeb) (Entered: 08/09/2021)
08/09/2021	241	Minute Entry for proceedings held before District Judge Rodney Gilstrap: Jury Trial Day 6 completed on 8/9/2021. (Court Reporter Shawn McRoberts, RMR, CRR.) (Attachments: # 1 Attorney Attendance Sheet) (aeb) (Entered: 08/09/2021)
08/17/2021	242	FINAL JUDGMENT. Signed by District Judge Rodney Gilstrap on 8/17/2021. (nkl,) (Entered: 08/17/2021)
08/17/2021	243	Notice of Filing of Patent/Trademark Form (AO 120) at termination of case. AO 120 mailed to the Director of the U.S. Patent and Trademark Office. (nkl,) (Entered: 08/17/2021)
08/31/2021	244	PROPOSED BILL OF COSTS filed by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Appendix A)(Williams, Fred) (Entered: 08/31/2021)
08/31/2021	245	**DEFICIENT DOCUMENT** MOTION for Bill of Costs by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Appendix A, # 2 Text of Proposed Order)(Williams, Fred) Modified on 9/1/2021 (nkl,). (Entered: 08/31/2021)
09/01/2021		NOTICE of Deficiency regarding the MOTION for Bill of Costs submitted document 245 does not contain a Certificate of Conference. Correction should be made by one business day. (nkl,) (Entered: 09/01/2021)
09/01/2021	246	MOTION for Bill of Costs by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. (Attachments: # 1 Appendix A, # 2 Text of Proposed Order)(Williams, Fred) (Entered: 09/01/2021)
09/14/2021	247	ORDER granting 246 Motion for Bill of Costs. Court ORDERS entry of Bill of Costs. Signed by District Judge Rodney Gilstrap on 9/14/2021. (ch,) (Entered: 09/14/2021)
09/14/2021	248	BILL OF COSTS by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. Costs Taxed in the amount of $43271.07. (ch,) (Entered: 09/14/2021)
09/15/2021	249	NOTICE OF APPEAL - FEDERAL CIRCUIT as to 242 Judgment by Joe Andrew Salazar. Filing fee $ 505, receipt number 0540-8584431. Appeal Record due by 9/29/2021. (Keyhani, Dariush) (Entered: 09/15/2021)
09/16/2021		Transmission of Notice of Appeal, Order and Docket Sheet to US Court of Appeals, Federal Circuit by separate email. re 249 Notice of Appeal - FEDERAL CIRCUIT (ch,) (Entered: 09/16/2021)
09/16/2021	250	NOTICE of Docketing Notice of Appeal from USCA re 249 Notice of Appeal - FEDERAL CIRCUIT filed by Joe Andrew Salazar. USCA Case Number 2021-2320 (klc,) (Entered: 09/16/2021)

09/17/2021	251	NOTICE of Docketing Notice of Appeal from USCA re 249 Notice of Appeal - FEDERAL CIRCUIT filed by Joe Andrew Salazar. USCA Case Number 21-2320 (ch,) (Entered: 09/17/2021)
09/20/2021	252	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Trial (Volume 1) Proceedings held on 08/02/2021 before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shawn McRoberts,Telephone number: (903) 923-7464. <P>**NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov<P>** Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Motion to Redact due 10/11/2021. Release of Transcript Restriction set for 12/19/2021. (smm,) (Entered: 09/20/2021)
09/20/2021	253	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Trial (Volume 2) Proceedings held on 08/03/2021 before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shawn McRoberts,Telephone number: (903) 923-7464. <P>**NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov<P>** Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Motion to Redact due 10/11/2021. Release of Transcript Restriction set for 12/19/2021. (smm,) (Entered: 09/20/2021)
09/20/2021	254	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Trial (Volume 3) Proceedings held on 08/04/2021 before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shawn McRoberts,Telephone number: (903) 923-7464. <P>**NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov<P>** Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Motion to Redact due 10/11/2021. Release of Transcript Restriction set for 12/19/2021. (smm,) (Entered: 09/20/2021)
09/20/2021	255	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Trial (Volume 4) Proceedings held on 08/05/2021 before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shawn McRoberts,Telephone number: (903) 923-7464. <P>**NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov<P>** Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Motion to Redact due 10/11/2021. Release of Transcript Restriction set for 12/19/2021. (smm,) (Entered: 09/20/2021)

09/20/2021	256	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Trial (Volume 5) Proceedings held on 08/06/2021 before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shawn McRoberts,Telephone number: (903) 923-7464. <P>**NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov<P>** Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Motion to Redact due 10/11/2021. Release of Transcript Restriction set for 12/19/2021. (smm,) (Entered: 09/20/2021)
09/20/2021	257	NOTICE OF FILING OF OFFICIAL TRANSCRIPT of Trial (Volume 6) Proceedings held on 08/09/2021 before Judge Rodney Gilstrap. Court Reporter/Transcriber: Shawn McRoberts,Telephone number: (903) 923-7464. <P>**NOTICE RE REDACTION OF TRANSCRIPTS: The parties have seven (7) days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.txed.uscourts.gov<P>** Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Motion to Redact due 10/11/2021. Release of Transcript Restriction set for 12/19/2021. (smm,) (Entered: 09/20/2021)
09/22/2021	258	TRANSCRIPT REQUEST by Joe Andrew Salazar (Attachments: # 1 Certificate of Service)(Keyhani, Dariush) (Entered: 09/22/2021)
09/29/2021	259	NOTICE OF CROSS APPEAL - FEDERAL CIRCUIT as to 220 Order,,,,,,,,,, Terminate Motions,,,,,,,,, 242 Judgment by AT&T Mobility LLC, Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc., Sprint United Management Company, T-Mobile USA Inc. Filing fee $ 505, receipt number 0540-8604446. (Williams, Fred) (Entered: 09/29/2021)
09/30/2021		Transmission of Notice of Cross Appeal, Order and Docket Sheet to US Court of Appeals, Federal Circuit by separate email. FEDERAL CIRCUIT (ch,) (Entered: 09/30/2021)
09/30/2021	260	NOTICE of Docketing Notice of Cross Appeal from USCA re 249 Notice of Appeal - FEDERAL CIRCUIT filed by Joe Andrew Salazar. USCA Case Number 21-2376 (Attachments: # 1 Notice of Cross Appeal)(ch,) (Entered: 09/30/2021)

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US005802467A

United States Patent [19]

Salazar et al.

[11] **Patent Number: 5,802,467**

[45] **Date of Patent: Sep. 1, 1998**

[54] **WIRELESS AND WIRED COMMUNICATIONS, COMMAND, CONTROL AND SENSING SYSTEM FOR SOUND AND/OR DATA TRANSMISSION AND RECEPTION**

[75] Inventors: **Joe Andrew Salazar**, Lompoc, Calif.; **Luis Molero-Castro**, Madrid, Spain

[73] Assignee: **Innovative Intelcom Industries**, Lompoc, Calif.

[21] Appl. No.: **535,801**

[22] Filed: **Sep. 28, 1995**

[51] **Int. Cl.**[6] **H04M 11/00**

[52] **U.S. Cl.** **455/420**; 455/419; 340/825.72

[58] **Field of Search** 379/56, 102, 96, 379/58, 67; 455/89, 231, 420, 556, 566, 402

[56] **References Cited**

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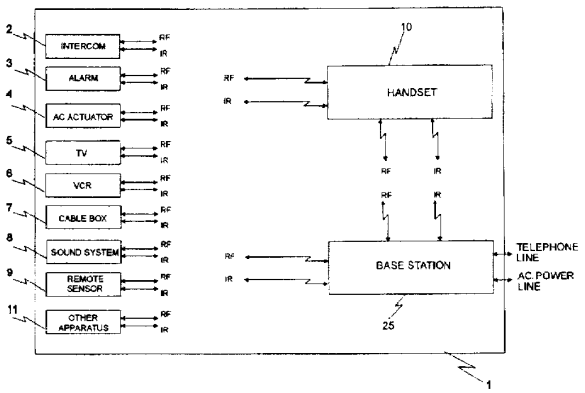
Primary Examiner—Dwayne D. Bost
Assistant Examiner—Myran K. Wyche
Attorney, Agent, or Firm—Sofer & Haroun, LLP

[57] **ABSTRACT**

An interactive microprocessor based wireless communication device includes sound and data transceivers, signal detection and coupling devices, signal conversion device, voice recording, playback and storage device, voice activated device, display device, touch screen or similar device, sensors, frequency generation device, sound detection and reproduction devices and power source to concurrently perform generalized two way wireless communications, command, control and sensing functions utilizing radio and infra-red frequency communication links. A microprocessor receives signals from the touch screen and generates a digital data, command/or control signal for transmission to external devices such as home appliances and remote sensors. The microprocessor also responds to voice signal commands received via microphone and a voice processor. The microprocessor uses this signal to generate data, command/or control signals for transmission to external devices such as telephone, paging and intercom systems. Sound signals may be stored in a voice recorder and playback IC for subsequent message processing and coupling to a transceiver and/or a speaker. Telephone ringer signals are generated by the microprocessor and are coupled to a ringer for audio output. In response to certain commands, the wireless communication device establishes a communication link with external devices using radio frequency or infra-red frequency transmission and/or reception. Sensor signals are created by sensors that can detect physical differential changes and that can convert the changes into measurements. These signals are coupled to the microprocessor for further processing, display and/or transmission.

34 Claims, 10 Drawing Sheets



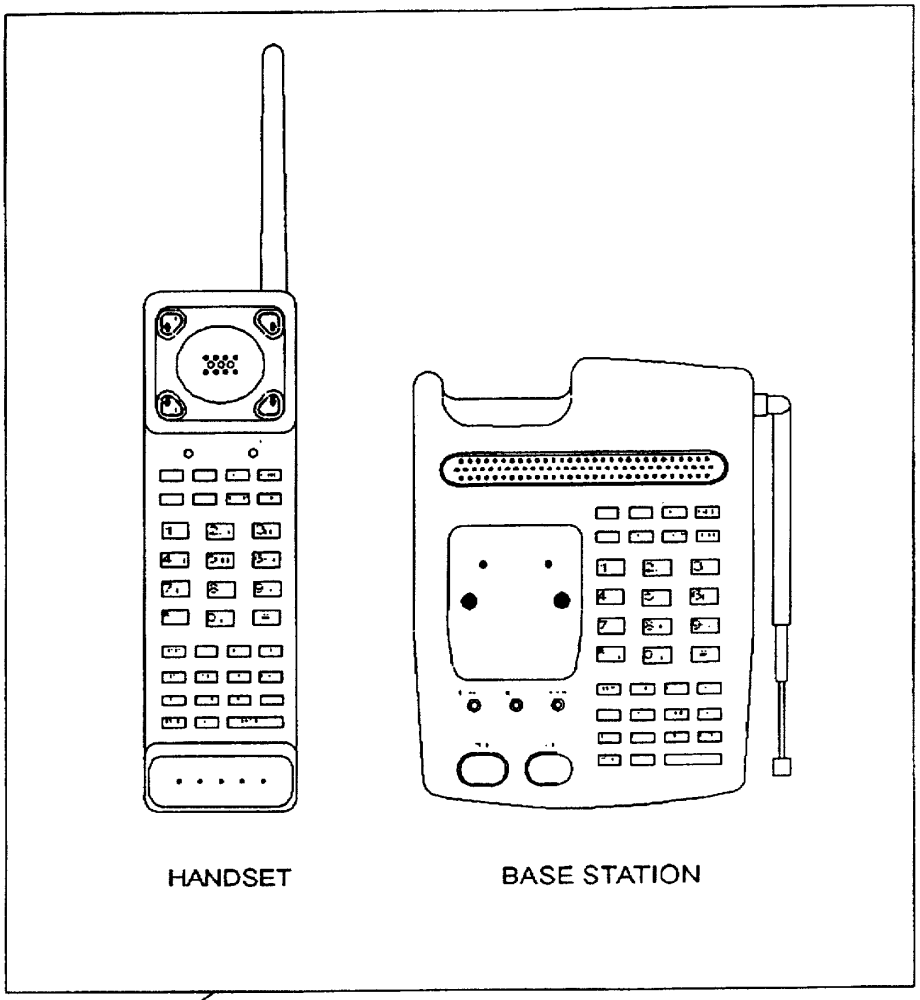


FIG. 1a

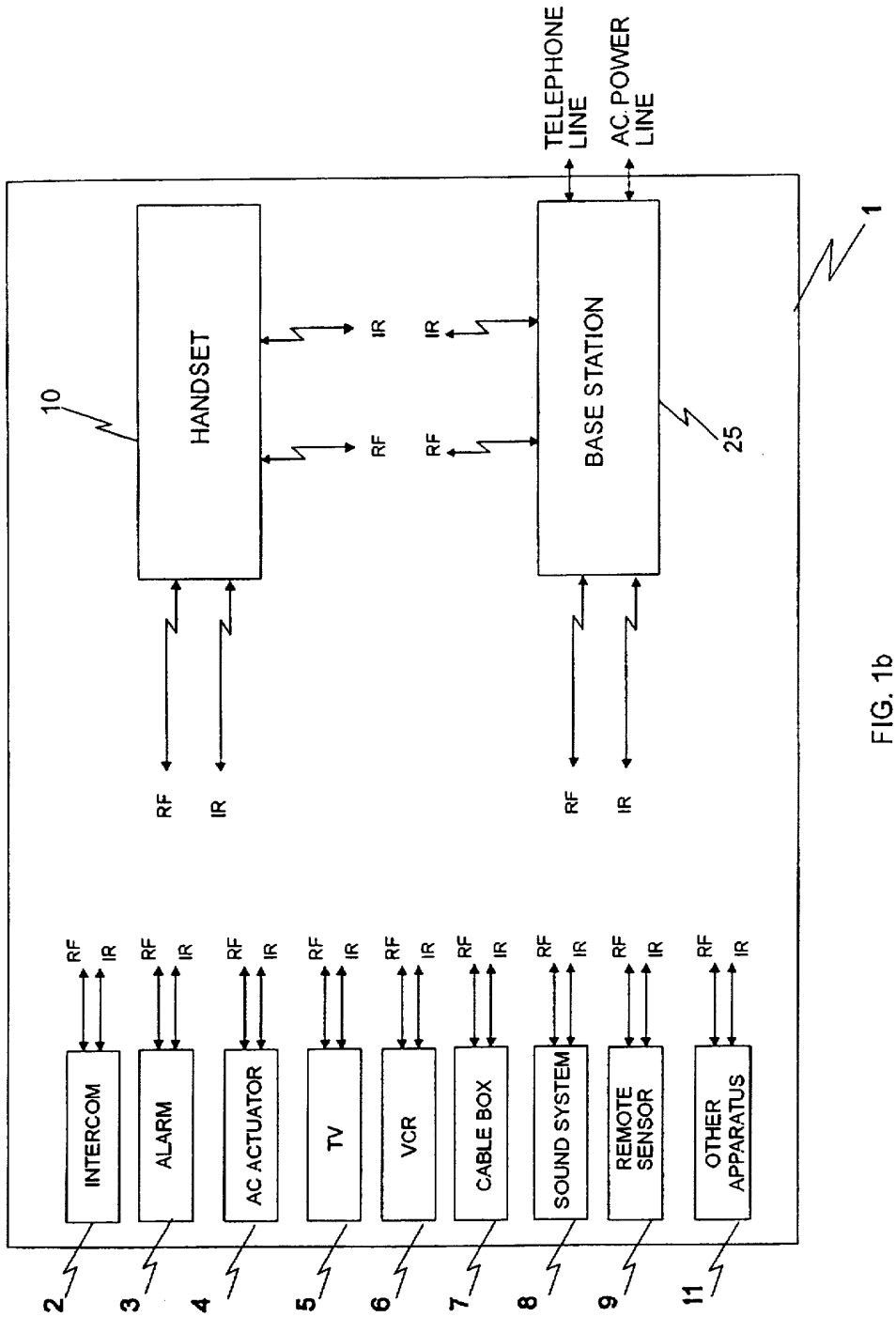

TELEPHONE LINE
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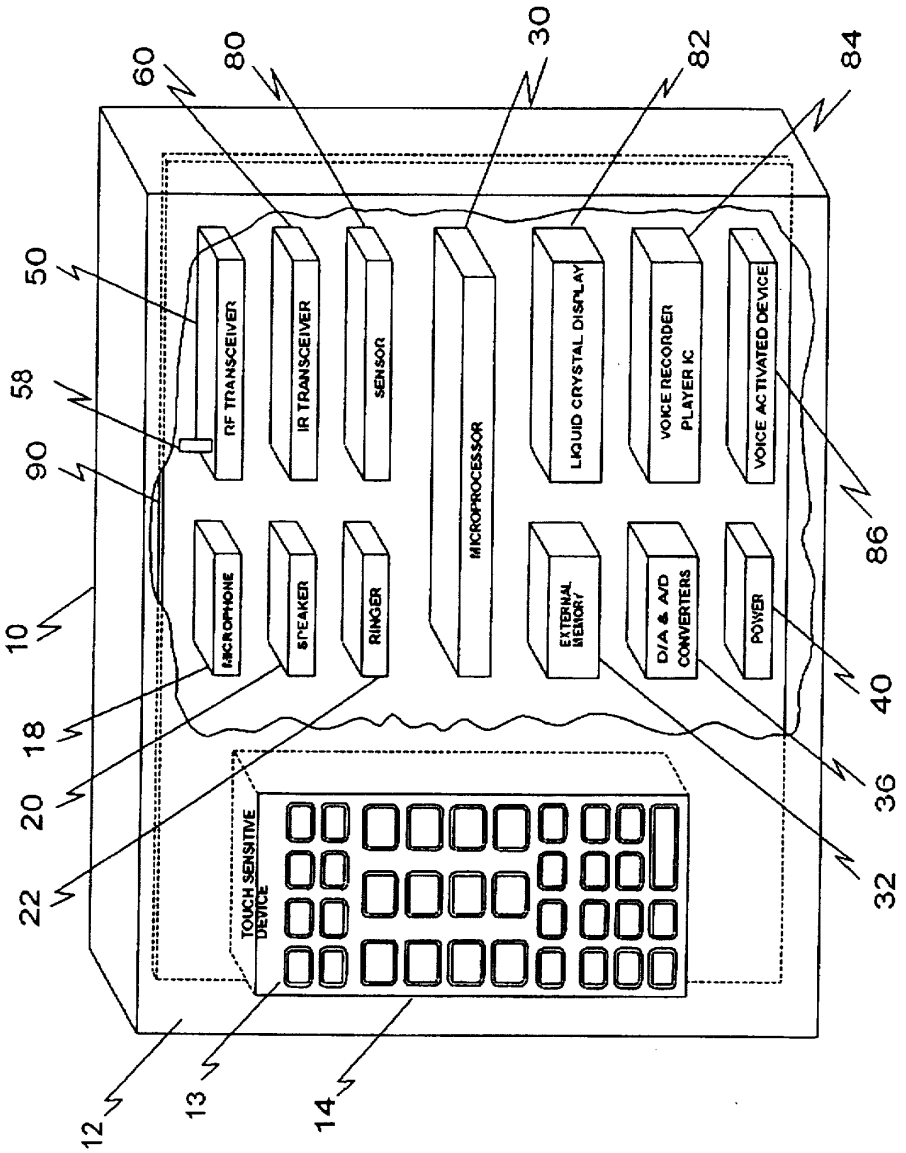
FIG. 1b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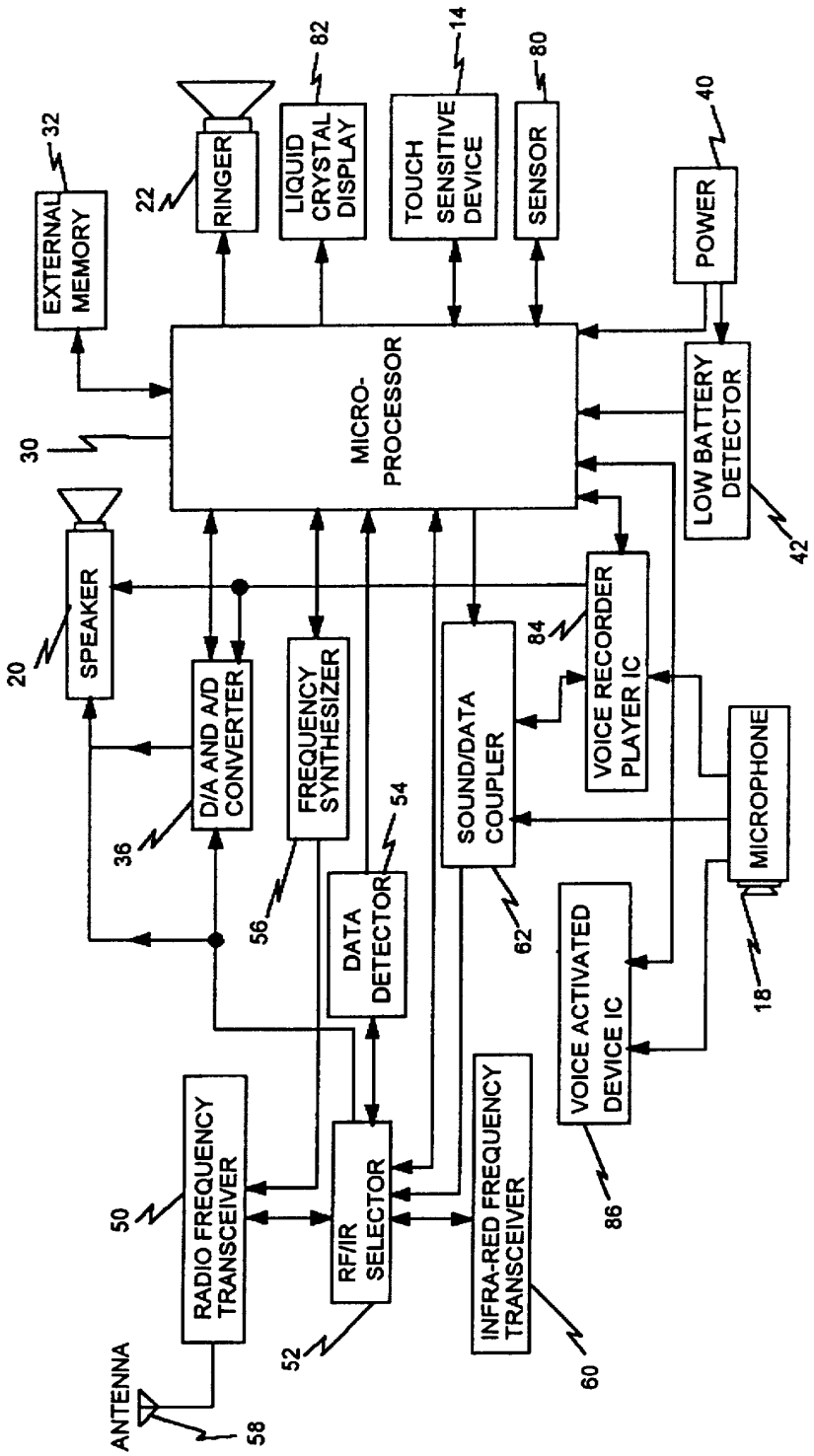
RF TRANSCEIVER
IR TRANSCEIVER
SENSOR
MICROPROCESSOR
LIQUID CRYSTAL DISPLAY
VOICE RECORDER PLAYER IC
VOICE ACTIVATED DEVICE
MICROPHONE
SPEAKER
RINGER
EXTERNAL MEMORY
D/A & A/D CONVERTERS
POWER
TOUCH SENSITIVE DEVICE

FIG. 2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MICRO-PROCESSOR
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LOW BATTERY DETECTOR
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SPEAKER
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D/A AND A/D CONVERTER
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FREQUENCY SYNTHESIZER
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DATA DETECTOR
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SOUND/DATA COUPLER
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VOICE RECORDER PLAYER IC
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MICROPHONE
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VOICE ACTIVATED DEVICE IC
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RADIO FREQUENCY TRANSCEIVER
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RF/IR SELECTOR
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INFRA-RED FREQUENCY TRANSCEIVER
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ANTENNA
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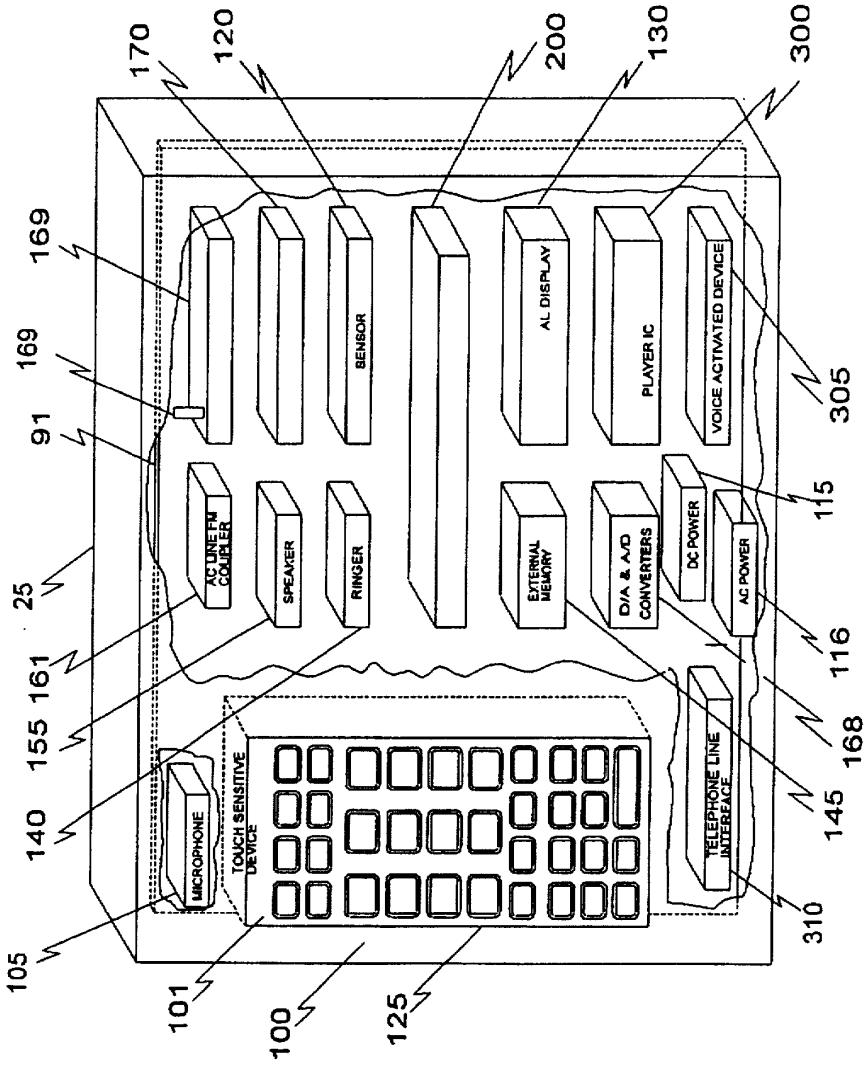
FIG. 3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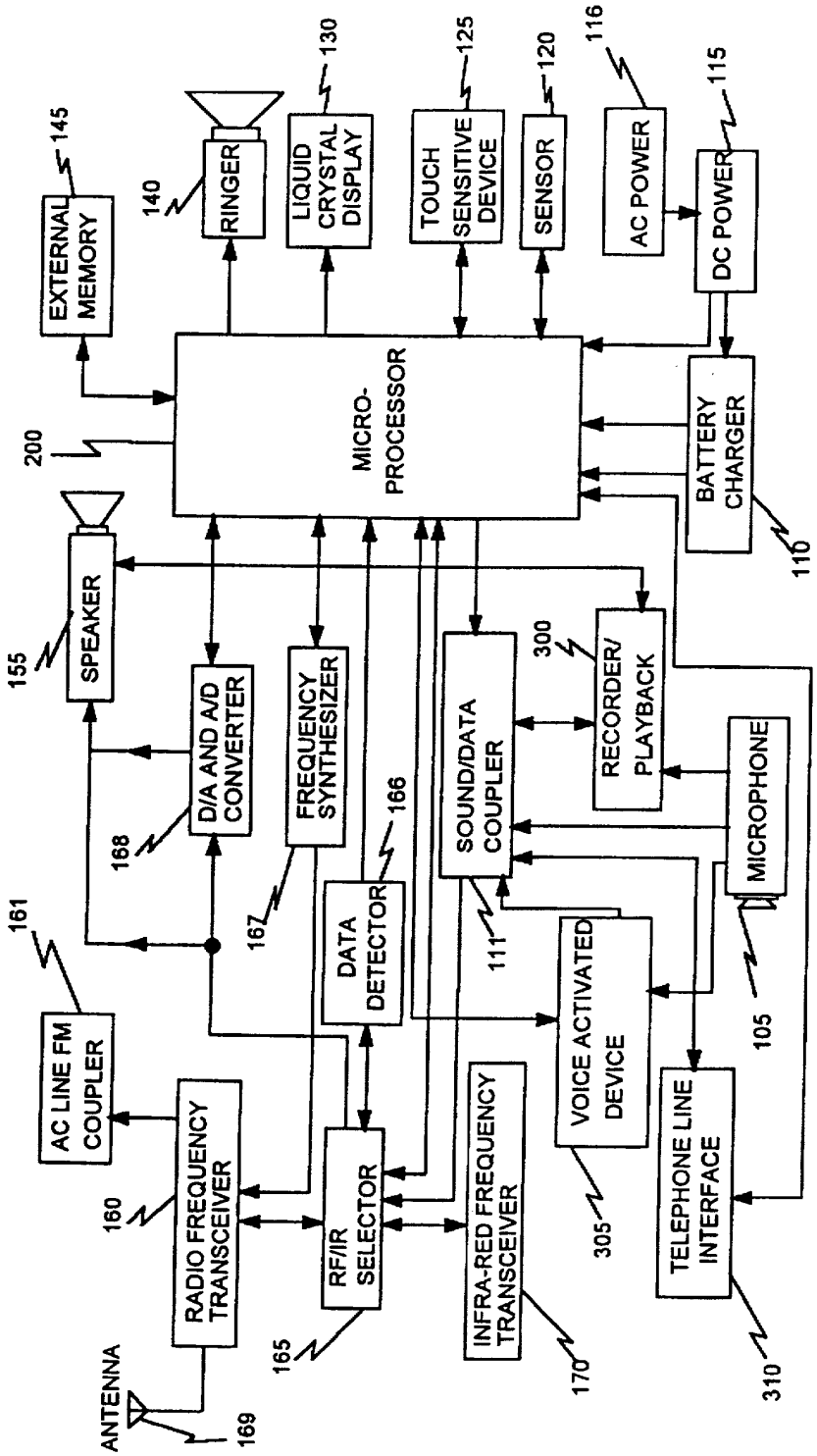
BENSOR
AL DISPLAY
PLAYER IC
VOICE ACTIVATED DEVICE
AC LINE FM COUPLER
SPEAKER
RINGER
EXTERNAL MEMORY
D/A & A/D CONVERTERS
DC POWER
AC POWER
MICROPHONE
TOUCH SENSITIVE DEVICE
TELEPHONE LINE INTERFACE

FIG. 4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LIQUID CRYSTAL DISPLAY
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DC POWER
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RECORDER/ PLAYBACK
MICROPHONE
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AC LINE FM COUPLER
DATA DETECTOR
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VOICE ACTIVATED DEVICE
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TELEPHONE LINE INTERFACE
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RADIO FREQUENCY TRANSCEIVER
RF/IR SELECTOR
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INFRA-RED FREQUENCY TRANSCEIVER
170
ANTENNA
169

FIG. 5

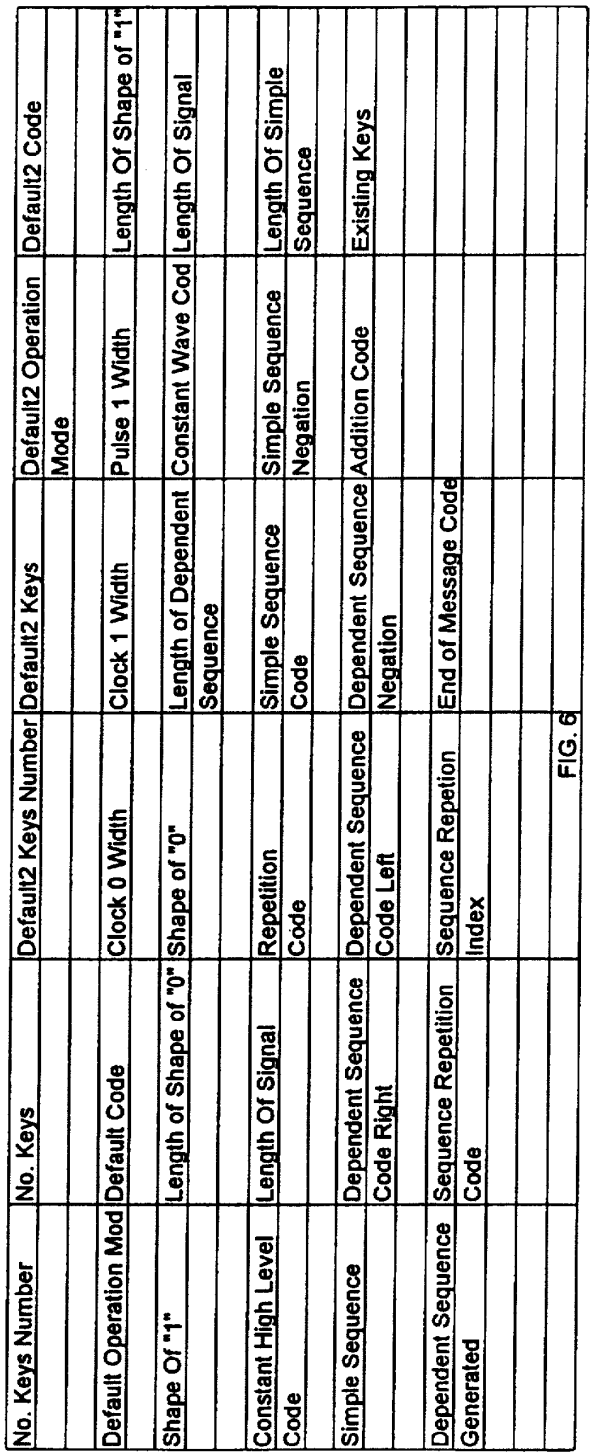
No. Keys Number
No. Keys
Default2 Keys Number
Default2 Keys
Default2 Operation
Default2 Code
Mode
Default Operation Mod
Default Code
Clock 0 Width
Clock 1 Width
Pulse 1 Width
Length Of Shape of "1"
Shape Of "1"
Length of Shape of "0"
Shape of "0"
Length of Dependent
Constant Wave Cod
Length Of Signal
Sequence
Constant High Level
Length Of Signal
Repetition
Simple Sequence
Simple Sequence
Length Of Simple
Code
Code
Code
Negation
Sequence
Simple Sequence
Dependent Sequence
Dependent Sequence
Dependent Sequence
Addition Code
Existing Keys
Code Right
Code Left
Negation
Dependent Sequence
Sequence Repetition
Sequence Repetion
End of Message Code
Generated
Code
Index

FIG. 6

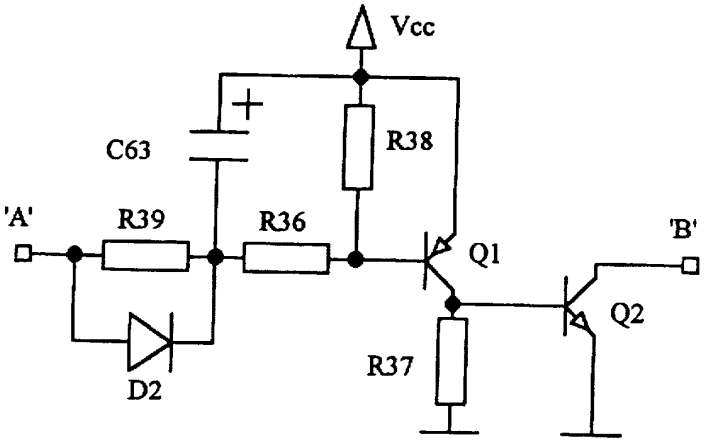

FIG. 7

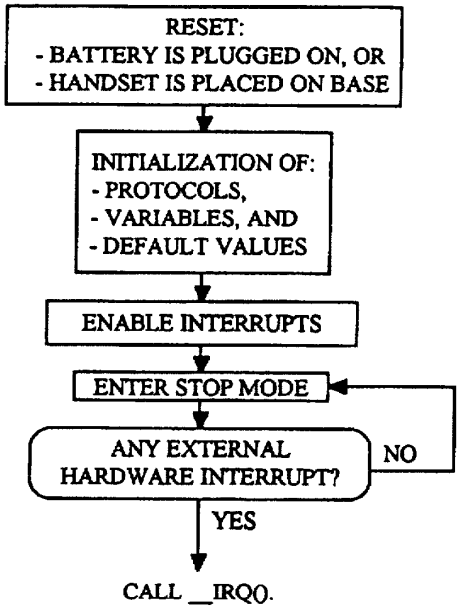
RESET:
- BATTERY IS PLUGGED ON, OR
- HANDSET IS PLACED ON BASE
INITIALIZATION OF:
- PROTOCOLS,
- VARIABLES, AND
- DEFAULT VALUES
ENABLE INTERRUPTS
ENTER STOP MODE
ANY EXTERNAL HARDWARE INTERRUPT?
NO
YES
CALL _IRQ0.

FIG. 8

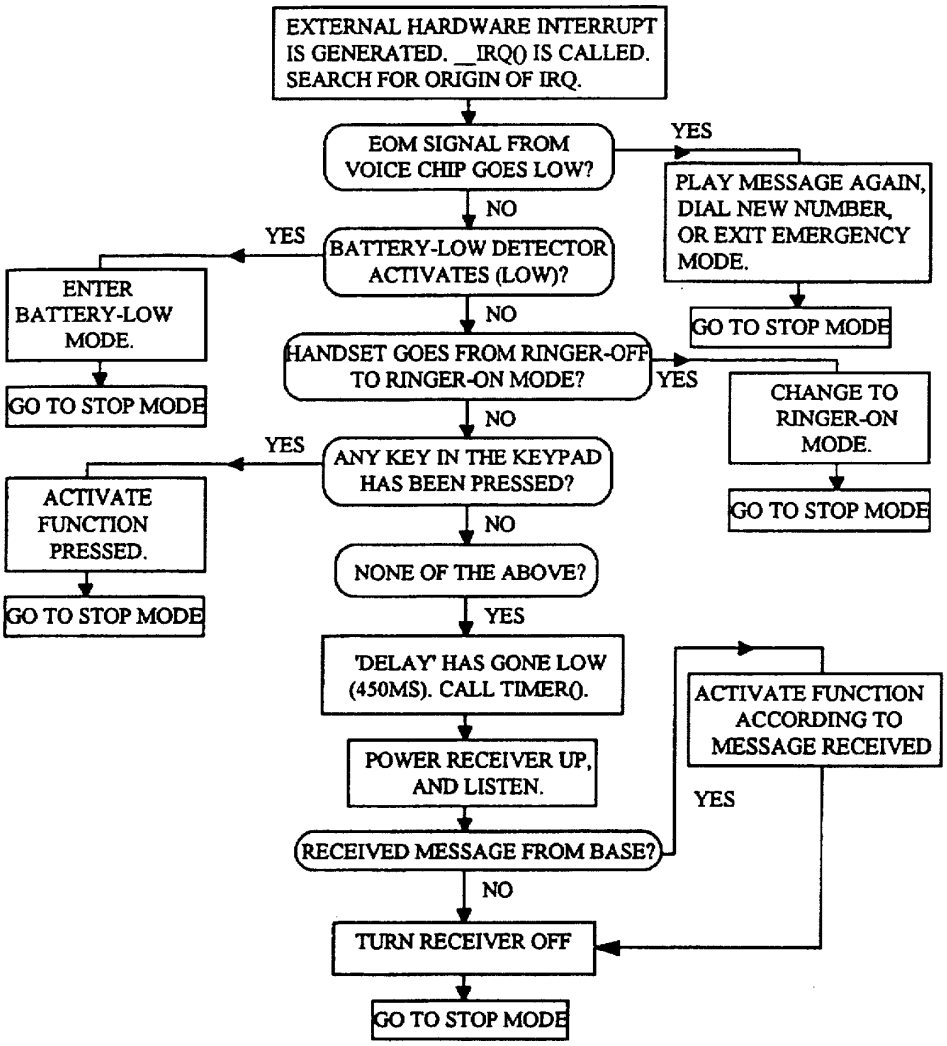
EXTERNAL HARDWARE INTERRUPT IS GENERATED. __IRQ0 IS CALLED. SEARCH FOR ORIGIN OF IRQ.
EOM SIGNAL FROM VOICE CHIP GOES LOW?
YES
PLAY MESSAGE AGAIN, DIAL NEW NUMBER, OR EXIT EMERGENCY MODE.
GO TO STOP MODE
NO
BATTERY-LOW DETECTOR ACTIVATES (LOW)?
YES
ENTER BATTERY-LOW MODE.
GO TO STOP MODE
NO
HANDSET GOES FROM RINGER-OFF TO RINGER-ON MODE?
YES
CHANGE TO RINGER-ON MODE.
GO TO STOP MODE
NO
ANY KEY IN THE KEYPAD HAS BEEN PRESSED?
YES
ACTIVATE FUNCTION PRESSED.
GO TO STOP MODE
NO
NONE OF THE ABOVE?
YES
'DELAY' HAS GONE LOW (450MS). CALL TIMER0.
POWER RECEIVER UP, AND LISTEN.
RECEIVED MESSAGE FROM BASE?
YES
ACTIVATE FUNCTION ACCORDING TO MESSAGE RECEIVED
NO
TURN RECEIVER OFF
GO TO STOP MODE

FIG. 9

WIRELESS AND WIRED COMMUNICATIONS, COMMAND, CONTROL AND SENSING SYSTEM FOR SOUND AND/OR DATA TRANSMISSION AND RECEPTION

FIELD OF THE INVENTION

The present invention relates to a wireless and wired communications, command, control and sensing system comprising a handset and base station, for the two way communication of sound, voice, and data with any appliance and/or apparatus capable of transmitting and/or receiving compatible sound, voice and data signals.

BACKGROUND OF THE INVENTION

Currently, there are prior art devices for remotely controlling appliances using infra-red (IR) signals. Further, there are prior art devices which offer communications using radio frequency (RF) signals. However, few devices effectively combine both technologies. For example, U.S. Pat. No. 5,138,649 discloses an apparatus that controls a television and conducts telephone functions through a cable television converter and a base unit that incorporates a telephone radio frequency transceiver and a modem that interfaces with the telephone line. This arrangement has disadvantages since current televisions and cordless telephone bases on the market do not have such converters and modems and are not likely to be retro-fitted. Secondly, there are many television owners that do not have television cable boxes.

Further, the disclosed apparatus also provides a means for communicating with infra-red signals in one direction only. It does not provide for the use of infra-red communications as an alternate or full backup system to the radio frequency communications link. As a result, the command and control of an infra-red sensor equipped apparatus is severely limited. Further still, in medical or industrial uses, where RF radiation is detrimental, this disclosed apparatus is placed at a significant disadvantage, if not impossible to use. In addition, the disclosed alternative of using radio frequency (RF) for audio signals only and infra-red frequency for one way communication of telephone control and data signals severely limits the utility of the apparatus: (1) it does not provide an IR data path from the base to the handset for control as required for full telephone operations and (2) it will not work in environments where the need for full two way data and/or voice transmission in the IR domain would be necessary.

Accordingly, it is an object of the present invention to provide full two way RF and IR communication links to all types of apparatus and/or appliances for home, business, medical or industrial use. Single RF or IR links or combinations of RF links and IR links for performing integrated functions would have significant advantages. The ability to communicate directly with an appliance or apparatus from a unified wireless and/or wired communications, command, control and sensing device, in either full two way RF or IR link modes and without having to use a converter with a modem or a stand alone base station as an interface, offers other major and significant advantages. Further, use of a base station independent of the handset to perform all communications, command, control and sensing functions offers convenient extended utility, reliability and availability. Also, optional use of the base station as a repeater extends the range at which the wireless communication link can be established and maintained. Use of the base station as

an option for coupling frequency modulated signals onto an AC power line offers other advantages. None of these advantages are met with prior art portable telephone handsets having IR remote control since their utility is driven by the interface with a television apparatus and access to a television cable line or through severely limited telephone base station functions. Further, prior art devices can not perform full telephone operations in view of a lack of an IR telephone control signal return link to the handset to perform handshake functions.

It is another object of the present invention to provide a unified wireless and wired communications, command, control and sensing system, in the form of a remote handset, base station, or both, each having a generalized signal generating and control structure that can interlace sound, including voice, command and control data and sensing data. The signals can be transmitted and/or received over a broad frequency range and linked to any number of appliances and/or apparatus capable of receiving and/or transmitting compatible signals without the requirement for a modem which adds unnecessary complexity and cost. Signal generation and control that is completely under microprocessor control, based on a generalized software architecture, overcomes the limitations of the specific simple aggregation and utility of a remote control, television converter, and cordless telephone as embodied in the prior art.

It is still a further object of the invention to provide fully integrated signal generation capability in a broad frequency range, from radio to infra-red frequencies, so that the frequency selection can be better matched to the operating environment of the communications, command, control and sensing device. Under some conditions the option to select frequency transmission or reception in either a radio frequency or infra-red frequency greatly enhances opportunities to overcome environmental radiating problems. In some environments where radio frequency transmission may be detrimental to other operating devices, the option to transmit in the infra-red domain could be very beneficial. Similarly, where direct line of sight combined with reflecting surfaces still does not make infra-red transmission and reception practical, the use of a radio frequency capability is very beneficial. Being able to provide a backup signal link between radio frequency transmission or reception and infra-red transmission or reception could insure link connection should a particular component fail in either the radio frequency or infra-red circuits.

It is another object of the invention to provide a means for loading the microprocessor external memory of the handset or base station with updated or accessory programs and/or data bases. The loading can be accomplished via a telephone line, a telephone base unit transceiver, a personal computer, or an entertainment apparatus that operates in the RF and/or IR frequency domain and a communication link that can be established with the wireless communications, command, control and sensing device.

It is still another object of the invention to use a microprocessor and a generalized signal generation or control software to provide a flexible way to add accessory appliances or apparatuses without having to buy additional, non-compatible, hand-held remote control or other wireless communications devices. Many generations of products could be designed to take advantage of a known or adaptive inter-device communications protocol.

SUMMARY OF THE INVENTION

In accordance with the present invention, a wireless and wired communications, command, control and sensing

system, in the form of a remote handset or base station, or both, is provided. Both the handset and the base station have similar components and function in substantially the same manner. The base station may have additional features, for example: it couples a frequency modulated signal to alternating current (AC) power line; it may be powered by an alternative alternating current (AC) signal and battery power sources; it may provide battery charging for the handset, and it may be coupled to public or private telephone lines. Both the handset and the base station contain a touch screen or similar touch sensitive device that when touched in at least one specific outlined area, provide the means for externally interacting with their respective microprocessors. This interaction initiates the execution of a software instruction set.

Both the handset and the base station have microprocessors to control all their internal operations. The handset and the base station microprocessors are configured to actuate internal circuits, make calculations, process data, generate and verify privacy codes for telephone communications, generate sound and/or data signals, control signal processing, control the reception and transmission of radio and/or infra-red frequency signals and activate access to public or private telephone networks. The microprocessors further provide programming and selecting modes of operation and functions. The microprocessors and associated software logically inter-relate data to generate information and general purpose command and control signals that can be received and processed by different external appliances or apparatus. The microprocessors further generate signals that are coupled to a ringer of a telephone or other apparatus for paging, and performing other coded audio alert functions.

Both the handset and the base station include a microphone. The microphones couple external sound signal, including voice signals, to a sound and data_coupler for subsequent transmission via radio and/or infra-red frequency transceivers. The microphones further couple sound signals, including voice signals, to a voice recorder and player integrated circuit (IC) for storage and playback. The microphones further couple external voice command signals to a voice activated device IC.

Sound, voice, and/or data signals inputted via a microphone are sent to a sound and data coupler for transmission, output to a speaker, and/or for processing by the microprocessor. Recording, playback and storing of sound signals, including voice signals, is provided, under microprocessor control, for message operations. The sound or voice signals are inputted via a microphone in some applications or inputted via transceivers in other applications. The signals are retrieved and played back, under microprocessor control, via the speaker, and/or are coupled to the transceivers for transmission via radio or infra-red communication links.

Voice command and/or control signals which are input via the microphone are detected by a voice activated device. The signals are converted into digital signals for input to the microprocessor. This voice command generated input is used by the microprocessor for internal operations. It may also be converted into command and control signals for transmission via a radio frequency and/or infra-red transceiver to external appliances or apparatus.

Radio and/or infra-red transceivers transmit and receive radio frequency and/or infra-red frequency signals. Typical radio transceiver functions include signal detection, modulation, demodulation, amplification, and noise reduction through companding techniques. Carrier frequencies are provided by a frequency synthesizer which is controlled by the microprocessor. Digital to analog and analog to digital signal conversion is provided for signal processing and communication in both analog and digital form. Radio transceivers in the handset and the base station couple sound, including voice signals, data and control signals, to and/or from a data detector, signal converters, a sound and data coupler, a speaker and respective microprocessor. Radio signals are coupled to and from open space via an antenna. The infra-red transceiver couples sound signals, including voice, data and control signals to and/or from the data detector, signal converters, a sound and data coupler, a speaker and the microprocessor. Infra-red signals are coupled to and from open space via infra-red light emitting and detection devices. These transceivers establish radio and infra-red signal communication links with external appliances and/or apparatuses, including handset to base station and base station to handset, having compatible receiver and/or transmission capabilities.

Sensors embodied in the communications, command, control and sensing system detect physical phenomena differentials and convert these differentials into data signals. These data signals are coupled to microprocessors for further processing and output to a liquid crystal display device, or similar device, a ringer and/or the transceivers. The communication, command, control and sensing system further includes means for transmitting the data signals to an external monitoring apparatus. Sensor data from external appliances and/or apparatus is received by radio and/or infra-red transceivers in the handset or base station and are coupled to a corresponding microprocessor. The respective microprocessor processes the external sensor data and outputs it to the display device or re-transmits it to an appliance, apparatus or monitoring device in the form of data, information, and/or command and control signals.

The base station radio frequency transceiver further couples two way frequency modulated signals from and to alternating current (AC) power line for two way communication with other frequency modulation transceivers that are also coupled to alternating current (AC) power line.

The base station further couples voice and data signals to public and/or private telephone network.

The base station is further powered by direct current (DC) signal and an alternating current (AC) signal power source.

According to one aspect of the invention, command and control signals are initialized by touching a touch screen, or similar touch sensitive device. In response, the microprocessor generates data for actuating internal circuits and/or for causing changes in settings in external appliances and/or apparatuses. In another aspect of the invention, command and control signals are initialized by voice commands and are generated by a voice activation device. In response, the microprocessor generates data for actuating internal circuits and/or for causing changes in settings in external appliances and/or apparatuses. In both aspects, the communications, command, control and sensing system receives command and control signals that represent appliance and/or apparatus sensor status and/or measurement readings. The received data is processed by the respective microprocessor for display and/or automatic updates to command and control signals sent back to the external appliance and/or apparatus.

External appliance and/or apparatus functions are controlled in response to a radio or infra-red command and control signal generated and transmitted by the wireless communications, command, control and sensing system. Passive external appliances or apparatuses, equipped with compatible receivers and decoding circuits, receive the command and control signals. Signal processing electronics

within the appliance or apparatus convert the received command and control signals into a switching or other form of operation. Active external appliances or apparatuses provide setting condition or status signals which are detected by internal sensors of the system. These setting condition or status signals are converted by a microprocessor, or other electronic circuit, into signals for transmission to the wireless communications, command, control and sensing system via a radio or infra-red communication link.

All communication links between the communications, command, control and sensing system and external appliances and/or apparatuses are wireless, except where the base station is coupled to a telephone line and an alternating current (AC) signal power line. These communication links are two way radio and/or infra-red links. For example, one external implementation comprises a door bell with intercom. The corresponding appliance control signal comprises an actuation command to establish a wireless radio frequency communications link between the door intercom and the handset and/or base station. A second external implementation comprises an audio alarm and a corresponding control signal, which is a radio and/or infra-red control signal link to activate a switch to power an alarm sound generator. A third external implementation comprises an alternating current remotely actuated switch, which receives a radio frequency coded command and powers up or changes the voltage setting in a house light or other device. A fourth implementation used within the handset and/or base station comprises a voice recorder and playback IC device, under the control of a microprocessor, for automatic and multiple message transmission to the base station for connection to a telephone line. A fifth implementation used within the handset and/or base station, comprises the reception of a message via the radio or infra-red transceiver and storage of the message for subsequent playback through the speaker, or re-transmission via the said transceivers. A sixth implementation used within the handset and/or base station, comprises receiving and processing remote sensor signals for displaying or processing by the microprocessor. A seventh external implementation comprises a generalized remote control data base driven signal generation for controlling entertainment appliances such as television, VCR, cable box and sound system. An eighth implementation comprises voice actuated command and control signal generation for internal operations and/or for remote control of external appliances. A ninth implementation comprises a sensor embodied within either the handset or base station, which senses temperature, pressure or some other externally measurable human body condition which is then converted and processed by the respective microprocessor into data for display or transmission along with a voice or other message. A tenth implementation comprises secure control signal generation and transmission to external appliances and/or apparatuses. An eleventh implementation comprises using the base station and/or handset microprocessor to perform programming functions, calculations and/or to execute specific application programs. A twelfth implementation comprises a wireless telephone operation between the handset and the base station which couples the signals to a private or public telephone network. A thirteenth implementation comprises coupling frequency modulated signals to and from alternating current (AC) signal power line. A fourteenth implementation comprises generation and processing of a generalized voice, command and control signal protocol which is transceived between the handset and/or base station and/or an external device capable of receiving, processing and responding to the signal.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. **1***a* and **1***b* are block diagrams illustrating a wireless and wired communications, command, control and sensing system comprised of a handset and base station in accordance with the present invention and external appliances and/or apparatus for two way communication of sound, voice and data signals utilizing both radio frequency and infra-red frequency communication links.

FIG. **2** is a perspective diagram view of a wireless communications, command, control and sensing handset device in accordance with the present invention.

FIG. **3** is a simplified block diagram of FIG. **2** illustrating the handset device in accordance with the present invention.

FIG. **4** is a perspective view illustrating the base station device of FIGS. **1***a* and **1***b* in accordance with the present invention.

FIG. **5** is a simplified block diagram illustrating the base station device in accordance with the present invention.

FIG. **6** is a block diagram illustrating a file structure corresponding to an array used for creating control signals in accordance with the invention.

FIG. **7** is a schematic diagram of a battery save circuit in accordance with the present invention.

FIGS. **8** and **9** are flow charts illustrating the operation of battery save circuit in connection with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1***a* illustrates a wireless and wired communications, command, control and sensing system **1** including a handset device **10** and a base station **25** for two way communication of sound, voice, and data to perform telephone communications, remote command and control of appliances and/or apparatuses, remote monitoring, intercom and paging operations, and security functions utilizing both radio and infra-red frequencies.

As illustrated in FIG. **1***b*, external appliances and/or apparatuses may include an intercom **2**, an alarm **3**, an alternating current (AC) actuator **4**, a TV **5**, a VCR **6**, a cable box **7**, a sound system **8**, a remote sensor **9**, or any other RF/IR apparatus **11**. As shown, handset **10** may communicate directly to any of the external apparatuses or directly to a base station **25**. Alternately, base station **25** may communicate directly with any of the external apparatuses or handset **10**. Further still, handset **10** may communicate to an external apparatus through base station **25**. Finally, base station **25** may communicate through a telephone line and/or an alternating current (AC) signal power line to any other apparatus having the ability to communicate through same.

FIG. **2** illustrates a wireless communications, command, control and sensing handset device **10**, in an enclosure **12**, that when interconnected via a printed circuit board **90** and controlled by a handset microprocessor **30**, performs two way wireless communication, command, control and sensing functions. In one embodiment of the invention, a Motorolla 6805 processor is used. However, as will become readily apparent to those skilled in the art, other microprocessors can be used. A touch sensitive device, such as **14**, with pressure, inductive, reactive, light or other physical reactions respond to an external touch and produces an input signal to microprocessor **30**, which in turn processes the signal and generates data, command and/or control signals. As will become readily apparent to those skilled in the art, touch sensitive device **14** may be a key pad, an optical device, a capacitive or inductive reactive device, or any

other type of available control devices. The touch sensitive device may be overlayed with different overlay **13**, which allows for designating a different set of functions that may be executed by microprocessor. The microprocessor instruction set and data is stored in microprocessor **30** or in an external memory module **32**, having preferably 16K byte memory capability. Selected data, command and/or control signals are displayed, in digital form, on a liquid crystal display **82** or similar display device. Two way sound and/or voice communication, including telephone communications, is controlled by microprocessor **30** via communication links enabled by radio frequency transceiver **50** and/or infra-red frequency transceiver **60**.

Open architecture software within microprocessor **30** creates a generalized command and control protocol which makes it possible to interact, in a wireless mode, with any number of external devices that have compatible transceivers with wireless communications, command, control and sensing handset **10**. The software also provides all the internal controls and necessary protocols for specified radio and infra-red communication links. Control signals created by these protocols allow the system to be used as a wireless telephone or as a remote controller for entertainment appliances or alarm systems or energy control systems or for personal security operations, etc. Microprocessor **30** provides all the timing via an internal or external clock. Data base updates and application programs can be down loaded into the microprocessor via the radio or infra-red communication links. Data base updates can also be made via the touch screen or touch sensitive device. The operation of the microprocessor in conjunction with creating the control signals to remotely communicate with external appliances and/or apparatus is explained in detail hereinafter.

One embodiment of handset **10**, in accordance with the present invention, is configured to communicate with various devices such as TV sets, VCR sets, CD players, and Cable boxes. The handset is further configured to utilize several communication protocols employed by various manufacturers or various models of the same brand. Typically, each manufacturer of one of these devices such as TV sets, VCR sets, CD players and Cable boxes, employs a specific communication protocol that includes a command code set for performing various functions to remotely control the device. Each command code set comprises a set of signals, wherein each signal is utilized to perform an available function. For example, a TV set made by manufacturer A, may require a command code set that includes various signals to remotely control various available functions such as channel up, channel down, volume up, volume down, mute, and power "on" and "off". This command code set may have a different set of signals than another command code set employed for a TV set made by manufacturer B. In the alternative, manufacturer A may employ different command code sets for its own various models of TV sets.

It will be appreciated that a handset that is capable of communicating with substantially all major brands of various devices, or transmit infra red frequencies insulated with control signals ranging from 30–130 KHz, requires a substantially large memory to store all the command code sets with various sets of signals. For example, it is desirable to store approximately 270 different code sets that may be used by handset **10** to remotely communicate with major brand TV sets, VCR sets, CDS and Cable boxes. These devices are adapted to receive infra-red signals with frequencies ranging from 30–120 KHz. On the average, each command code set may contain about 20 signals, wherein each signal is used to perform a desired function. Assuming that the average length of a signal to be generated has a duration of one second, the required memory space to store all the signals for the desired command code sets may be calculated. Thus, since the average number of signals per command code set is 20, and there are about 270 command code sets, handset **10** may be required to store data that represents approximately 5400 infra-red signals at an average frequency of 100 KHz, each signal having an average duration of one second. Assuming a Nyquist sampling rate, each signal with a duration of one second may be represented by 200Kbits or approximately 25Kbytes of data. Thus, for 5400 infra-red signals, a memory space in an order of 135Mbyts of data is desirable. However, handset **10** may typically provide a memory space in an order of 10Kbytes of data. Thus, it is necessary to store the data corresponding to all desired command code sets at a compression ratio in the order to 13000:1 and preferably 15000:1.

Handset **10** in accordance with the present invention employs an encoding technique to store the desired signals in a memory space in the order of 10Kbytes of data. This encoding arrangement is explained in more detail hereinafter.

In order to substantially decrease the amount of memory necessary to store infra-red signals, microprocessor **30** in accordance with the present invention, retrieves data from a memory device, such as a RAM, ROM, EPROM or EEPROM, that is configured so as to store a finite set of parameters that may be used to recreate and generate signals corresponding to a desired command code set. These parameters take substantially less memory space than if the entire signal were to be stored.

As mentioned previously, each command code set includes a set of signals that may be employed to transmit a specific command to an infra-red receiver located in an electronic device that is being controlled. In one embodiment of microprocessor **30**, in accordance with the present invention, each command code set is represented by parameters stored in an array comprising a set of variable fields that may vary in size depending on the amount of information stored in each field. These arrays are categorized as parent or root arrays and child or branch arrays. A parent array contains parameters that may be utilized to generate a set of infra-red signals that belong to a desired command code set. A child array, relates to its parent array, and is used to generate a different set of signals that belong to a different desired command code set. A child or branch array may store those parameters that are different from its parent array. A child array may not store those parameters that are substantially similar to those of its parent array. For such parameters, the child array retrieves the necessary information from the corresponding field in its parent array to generate the signals that belong to a command code set corresponding to this child array. This arrangement leads to a substantial reduction in memory space required to store parameters corresponding to various command code sets. Specifically, the savings in memory space increases with the number of child arrays corresponding to a parent array.

Furthermore, parent and child arrays may also refer to certain parameters in other arrays to generate some of the signals that are desired in conjunction with generating a command code set. Microprocessor **30** in accordance with the present invention may also be configured such that a set of signals belonging to a command code set may be generated by using parameters stored in one array, and remaining sets of signals belonging to the same command code set may be generated by using parameters stored in other arrays.

The above-described encoding technique is explained in more detail hereinafter in conjunction with FIG. **6**, which

illustrates the specific fields in each array, in accordance with one embodiment of the invention. However, the invention is not limited in scope in this respect. As mentioned previously, in a preferred embodiment these fields have a variable length to substantially minimize the use of memory space.

No Keys Number Field (4 Bits)

The first field in a parent or child array is identified as "no keys number". This field is four bits long. The information contained in this field refers to the number of keys that if pressed on handset **10**, no signal generates. For example, some TV sets may not accommodate channel up and channel down commands. For these TV sets, a desired channel may be selected by pressing the appropriate channel number. Thus, for such a TV set, handset **10** preferably should not generate a signal when its channel up or channel down key is pressed. The no keys number field identifies the number of such keys that may not generate a signal, when pressed.

No Keys Field (Variable Length)

The next field in an array is identified as "no keys". This field has a variable length depending on the "no keys number" specified by a command code set. The information contained in this field identifies the keys on handset **10**, that if pressed should not generate a signal. In accordance to one embodiment of the present invention, each key is represented by six bits. The three most significant bits indicate the row and the three least significant bits indicate the column of a key on handset **10**. Thus the length of "no keys" field is substantially equal to "no keys number" multiplied by 6 bits. It will be appreciated that the length of "no keys" field is zero when "no keys number" has a value zero.

Default **2** Keys Number Field

The next field in an array is identified as "default **2** keys number". The information contained in this field represents the number of keys that when pressed, handset **10** generates a signal that does not belong to a command code set that is being currently generated. The purpose for this field is that in certain circumstances, while handset **10** is generating signals corresponding to a command code set to remotely control a device, it is also desired to generate signals that correspond to a command code set for remotely controlling another device, so that at least two devices are remotely controlled concurrently. For example, sometimes when handset **10** is configured to generate signals for controlling a TV set, it is desirable that handset **10** also generate signals for controlling some of the functions of a VCR set, even though the handset is configured to generate a TV command code set. For this particular example, the number of keys that generate VCR related signals, while handset **10** is also generating TV set related signals, is stored in default **2** keys number field.

Default **2** Keys Field (Variable Length)

The next field in the array is identified as "default **2** keys". This field has a variable length depending on the "default **2** keys number" specified by a command code set. The information contained in this field identifies the keys on handset **10**, that if pressed would generate a signal created by referring to an array other than the one currently being retrieved from. In accordance with one embodiment of the present invention, each key is represented by six bits. The three most significant bits indicate the row and the three least significant bits indicate the column of a key on handset **10**. Thus the length of "default **2** keys" field is substantially equal to "default **2** keys number" multiplied by 6 bits. It will be appreciated that the length of "default**2** keys" field is zero when "default **2** keys number" has a zero value.

Default **2** Operation Mode Field (3 Bits)

The next field in the array is identified as default **2** operation mode. In one embodiment of handset **10** in accordance with the invention, this field may be present only when default **2** keys number has a value other than zero. In that event, the information in this field may be a 3 bits data word, representing the mode of operation for those keys on the handset that control a different device other than the one being controlled by the remaining keys. These modes of operation may be the types of devices that default **2** keys may control, such as TV mode, VCR mode, CD mode or CABLE mode.

Default **2** Code Field (8 Bits)

The next field in the array is identified as default **2** code. The information in this field identifies the array that contains the command code set information to be used for generating signals associated with default **2** keys. The length of this field is 8 bits, and, therefore, up to 255 different command code sets for each possible value of default **2** operation mode field may be retrieved for generating the desired signals corresponding to the default **2** keys. When default**2** code is 255, handset **10** generates signals corresponding to the array currently being processed in the specific default **2** operation mode. In that event, the system does not refer to any other array.

Default Operation Mode Field (3 Bits)

The next field in the array identifies the default operation mode. This information represents the mode of operation for the keys on the handset that control a specific device. These modes of operation may be the types of devices that handset **10** may control, such as TV mode, VCR mode, CD mode or CABLE mode. The mode information indicates the type of command code set that may be generated for a selected array.

Default Code Field (8 Bits)

The next field in the array identifies the default command code set that relates to the present command code set that is being generated based on the information contained in the array. Typically, if the array being selected corresponds to a child array, the information in the default code field identifies the parent array from which additional information may be retrieved to generate the signals corresponding to this child array. As will be explained in more detail with reference to specific fields contained in a parent array, the information necessary to create the signals for a child command code set are stored in a parent array corresponding to the child array. This information may include the clocking and pulse characteristics of the signals that are common among a parent and all of its children arrays.

In certain circumstances not all of the information between a child array and its parent are common. Thus, if microprocessor **30** does not find information in a specific field in the child array, it locates the default command code set, which identifies the parent array corresponding to the child array and retrieves the information from the parent array. If, however, microprocessor **30** finds the information

in the child array being selected, it creates the necessary signals based on the information located in the child array, without reverting back to the parent array identified in the default code field.

When the default code is 255, microprocessor **30** is notified that the present array corresponds to a parent command code set and all the information necessary to generate the square waves that form a signal may be retrieved from the present array. There are eight fields that together provide the information necessary to construct the square waves that may be employed to form the signals corresponding to a command code set. These eight fields are preferably stored in an array corresponding to a parent command code set.

Typically, at least one criteria for selecting a parent array and its corresponding children array is to analyze the shape of logical "1's" and "0's" that are generated pursuant to various command code sets for remotely controlling various devices. For a group of command code sets that have similar signal wave characteristics, information corresponding to such characteristics is stored preferably only in a parent array. The remaining children arrays who require the same logical "1's" and "0's" having the same shape as those of the parent command code set, do not have the necessary information in their appropriate fields. All the command code sets that require the same information in these eight fields, are thus, referred to as a family of command code sets comprising a parent array and a plurality of children arrays. For all command code sets within the same family, microprocessor **30** refers to the parent command code set to generate the logical "1's" and "0's." In one embodiment of the invention, each logical "1" and "0" is formed by a set of pulses having a specific sequence of bits.

The eight fields that correspond to the shape of logical "1's" and "0's" are explained in more detail, hereinafter.

Clock **0** Width (5 Bits) and Clock **1** Width (5 Bits) Fields

The information in these fields indicate the frequency of the infra-red signals that may be generated in conjunction with the present command code set. Each of these two variables may vary from 0 to 31. A value of 31 instructs microprocessor **30** to generate a square wave with the longest period available, and, a value of 0 instructs microprocessor **30** to generate a square wave with the smallest period available. Microprocessor **30**, based on the information in these fields, may generate square waves with a period between 9.5 μs and 41.5 μs, in increments of 0.5 μs. It will be appreciated that the present invention is not limited in scope in this respect and square waves with other periods may be generated.

Pulse 1 Width Field (1 Byte)

The information in this field represents the length of a pulse containing a plurality of square waves mentioned above. The value in this field may vary from 0 to 255. This allows 255 periods per each pulse. For example, for infra-red signals having a frequency of 40 KHz, the generated square waves have a period of approximately 25 μs. If it is desired that each pulse contain 255 square waves, the total length of each pulse adds to 6.3 ms.

Length of Shape of 1 Field (5 Bits)

In one embodiment of the present invention each signal associated with a command code set comprises a plurality of logical "1's" and "0's." A logical "1" may include a plurality of pulses as explained above. The length of shape of 1 field contains the information regarding the number of pulses that form a logical 1. In this particular embodiment a logical 1 may be represented by a sequence of 32 pulses.

Shape of 1 Field

This field contains a sequence of bits representing a logical "1." For example, for certain type of devices, a logical "1" is represented by a sequence of "1001101." In this example, the length of shape of 1 field is 7. Every time that handset **10** generates a logical "1" for this device, a sequence "1001101" is generated, where each "1" is a pulse having a width represented in pulse **1** width field. This pulse, in turn, modulates a carrier frequency represented by clock**0** and clock **1** fields.

Length of Shape of 0 Field (5 Bits) and Shape of 0 Field

The information contained in these fields represent a logical "0" employed by a desired command code set and are similar in form to logical "1" explained above.

Length of Dependent Sequence Field (5 Bits)

A dependent sequence is a set of logical 1's and 0's that are desired to be transmitted in response to a key pressed on handset **10**. It will be appreciated that for each remotely controlled device, a different dependent sequence is transmitted in response to a specific key. Furthermore handset **10** generates a different dependent sequence for each key pressed depending on the type or model of the remotely controlled device.

The information contained in the length of dependent sequence field indicates the length of the dependent sequence that is generated in response to a key pressed. In general, all keys corresponding to the same command code set have dependent sequences with the same length. Those keys corresponding to the same command code set that do not have a dependent sequence with the same length may be treated separately. For example a separate array may be formed for those command code sets whose dependent sequence lengths are not the same for all keys pressed.

The fields in an array described up to this point represent generally the information relating to the keys of handset **10**, and the way square wave signals and logical "1's" and "0's" may be created. The remaining fields contain "message" information, which represents how each signal in a command code set may be generated in response to a key pressed on handset **10**.

Constant Square Wave Code Field (3 Bits)

Certain devices that are desired to be remotely controlled by handset **10** require to receive a constant square wave prior to receiving a signal associated with a command code set employed to control these devices. The constant square wave code field indicates whether prior to or after generation of a signal, or within a signal, it is necessary to transmit a constant square wave to notify the receiving device that a signal will be transmitted. If the array contains a predetermined code, such as "001" in this field, microprocessor **30** will generate a constant square wave.

Length of Constant Square Wave Field (12 Bits)

This field represents the length of a constant square wave that is to be transmitted prior to or after the transmission of

a signal, or within a signal, generated in response to a key pressed on handset **10**. In one embodiment of the invention, the value in this field may vary between 0 and 4095. A zero value indicates that a constant signal is to be generated until the associated key is no longer pressed. A 4095 value indicates that for a 40 KHZ infra-red signal, a constant square wave of approximately 100 ms is to be generated.

Constant High Level Code (3 Bits)

Certain devices that are desired to be remotely controlled by handset **10** require to receive a delay between two consecutive portions of information transmitted by handset **10**. The constant high level code field indicates whether it is necessary to provide a delay in accordance with a desired command code set whose signals are being generated by microprocessor **30**. If the array contains a predetermined code, such as "011" in this field, microprocessor **30** will generate a constant high level code delay.

Length of Constant High Level Code (12 Bits)

This field represents the length of a delay necessary between two sets of information transmitted by handset **10**. For example, for certain command code sets, a signal is desired to be repeatedly transmitted to a receiving device. The information in the constant high level code determines the delay between the signals. For certain other command code sets, there may be a desire to provide a delay between two portions of information in a signal that is being transmitted. Again the information in the constant high level code indicates the length of delay between the transmissions.

Repetition Code Field (3 Bits)

In certain circumstances when a key on handset **10** is pressed, handset **10** transmits the same signal repeatedly. For example, when handset **10** is functioning in TV mode remotely controlling a TV set, when volume up or volume down keys are pressed, the signal representing these commands is repeatedly sent to the TV set until the key is no longer pressed. The repetition code field is provided to indicate to microprocessor **30** when such repetition is desired. Thus, the repetition code field may contain a predetermined code such as "011", that when present indicates that the remaining fields in the message must be repeated until the key being pressed is no longer pressed.

Simple Sequence Code Field (3 Bits)

In certain circumstances when a key on handset **10** is pressed, handset **10** transmits a preamble formed of a predetermined sequence of bits to prompt the remotely controlled device to receive the actual signal representing a function that can be remotely controlled. The simple sequence code field is provided to indicate to microprocessor **30** when such sequence is desired. Thus, the simple sequence code field may contain a predetermined code such as "100", that when present indicates that a sequence of bits must be transmitted when a key on handset **10** is pressed. Preferably, the simple sequence code does not depend on the key pressed, and, the same simple sequence is generated in response to any of the keys pressed.

Simple Sequence Negation Field (1 bit)

As previously mentioned, certain remotely controlled devices, may receive a message repeatedly when the repetition code field is set with a predetermined code such as "011." There are certain devices that are adapted to receive a negated version of a sequence every time handset **10** sends the sequence. For example, if in a series of repeated transmissions, a sequence "11100011" is first transmitted, the next time that this sequence is transmitted, handset **10** transmits "00011100", which is the negated version of the prior sequence. The simple sequence negation code field is provided to indicate to microprocessor **30** when such negation is desired.

Length of Simple Sequence Field (5 Bits)

This field indicates the length of the simple sequence that must be transmitted by handset **10** in response to a key pressed.

Simple Sequence Field

This field contains the actual sequence of binary bits adapted to be transmitted to a remotely controlled device, in response to a key pressed on handset **10**. It will be appreciated that the shape of 1's and 0's transmitted to the remotely controlled device follow the patterns defined in the prior fields, explained above, with respect to characteristics and the shape of pulses representing a logical "1" or a "0."

When it is desired to transmit a preamble simple sequence code, microprocessor **30** generates the appropriate sequence regardless of the key pressed on handset **10**. Thus, a preamble sequence code is transmitted in response to any one of the keys pressed on the handset, prior to the transmission of signals, after the signals, or within the signals, that represent the actual command or function that is desired to remotely control.

In certain circumstances it is also desired, in addition to the simple sequence code, to generate a set of signals that are transmitted depending on the key pressed on handset **10**. These key-dependent signals are explained in more detail hereinafter.

Dependent Sequence Code Right (3 Bits),
Dependent Sequence Code Left (3 Bits)

For many remotely controlled devices, a series of related keys pressed on handset **10**, each generate a sequence that are closely related to each other. For example, when a number key such as zero is pressed, a dependent sequence "0000" may be generated. When a key such as "1" is pressed, a dependent sequence "0001" is pressed and so forth. In one embodiment of handset **10** in accordance with the present invention, instead of storing the dependent sequence for all the numbers, it is desirable to store only one or two dependent sequences corresponding to numbers "0" and "1" respectively. When a number other than "0" or "1" is pressed on handset **10**, microprocessor **30** generates a dependent sequence by adding an appropriate amount of "1's" to the dependent sequence representing "0" or "1." It will be appreciated that a considerable amount of memory may be saved by employing this technique.

The dependent sequence code right or left fields indicate whether "1's" must be added to the right side of the dependent sequence that has been actually stored or to its left side. A predetermined code such as "101" indicates that the addition is made to the right side. A predetermined code such as "110" indicates that the addition is made to the left side.

Dependent Sequence Negation Field (1 bit)

The effect of this field is similar to simple sequence negation code field previously explained. Thus, when it is desired to transmit a set of dependent sequences repeatedly,

there are certain devices that expect to receive a negated version of the previously received dependent sequence. When this field is set to indicate negation, each transmission of a dependent sequence in a series of repetitions contains the negated version of bits previously transmitted.

Addition Code Field (3 Bits)

The information contained in this field indicates whether a specific type of key has an associated set of dependent sequence bits stored in memory, or whether such dependent sequence may be calculated by employing an appropriate addition function to another dependent sequence of bits stored in memory. For example, the first bit in the code may indicate that dependent sequences corresponding to number keys may be calculated by performing an addition to a dependent sequence representing a "0" number key or a "1" number key. Thus when this bit is set to "1" microprocessor **30** adds an appropriate amount to an already stored dependent sequence and transmits the resultant dependent sequence in response to a number key pressed.

The second bit in addition code field may indicate that dependent sequences corresponding to volume up and volume down keys may be calculated by performing an addition to a dependent sequence representing a specific volume level. Thus when this bit is set to "1" microprocessor **30** adds an appropriate amount to an already stored dependent sequence representing a specific volume level, and, transmits the resultant dependent sequence in response to a volume key pressed.

The third bit in addition code field may indicate that dependent sequences corresponding to channel up and channel down keys may be calculated in a manner substantially similar to that explained in conjunction with volume up and volume down keys.

Existing Keys Field (24 Bits)

These field contains 24 bits of information, where each "set" bit represents a key that is stored in the present command code set. The existing keys for remotely controlling a VCR set may include, play key, fast forward key, rewind key, mute key, volume up key, channel up key, recall key, channel down key, number "0" and number "1" keys, enter key, pause key, stop key, record key, power key and so forth. When it is desired that handset **10** generates a signal in response to any one of these keys, the corresponding bit in existing keys field is set to 1, if that specific key is stored in the current command code set. Thus microprocessor **30** retrieves the information in this field and determines whether it should generate a dependent sequence in response to a key pressed on handset **10**.

When addition code for a predetermined type of keys is set to 1, only the dependent sequence corresponding to one of the keys is stored and the dependent sequences corresponding to the remaining related keys may be calculated by performing an appropriate addition. The number of bits set in existing keys field equals the length of dependent sequence generated field divided by length of dependent sequences field.

It will be appreciated that the present invention is not limited in scope in this respect and there may be more or less than 24 bits representing 24 keys in response to which a dependent sequence is generated.

Dependent Sequence Generated Field

The information contained in this field represents the actual dependent sequence for each of the keys represented as "1" in the existing keys field. Thus, after microprocessor **30** determines that a dependent sequence must be generated in response to a key pressed on handset **10**, it refers to dependent sequence generated field to determine the actual sequence that must be transmitted in response to the key pressed. The length of this field is variable and depends on the length of the dependent sequence generated in response to a pressed key and the number of keys in response to which a dependent sequence is generated. As mentioned previously, the length of the dependent sequence is stored in the field identified as length of dependent sequence field.

Sequence Repetition Code Field (3 Bits)

In certain circumstances, it is desired to transmit a simple sequence or a dependent sequence several times within the same message that is being transmitted in response to a key pressed. Instead of storing the sequence many times within the message, it is desirable to store a code in sequence repetition code field, such as "111" indicating that handset **10** must generate a simple sequence or a dependent sequence again.

Sequence Repetition Index Field (2 Bits)

This field indicates which one of the simple or dependent sequences previously generated must be generated again. An index "00" indicates that a first set of simple sequences are desired to be generated again. Likewise, an index "01" indicates that a second set of simple sequences previously generated are desired to be generated again. An index "11" indicates that a dependent sequence previously generated needs to be generated again. An index "10" indicates that sequence repetition must be canceled. For example, assume that a parent array includes a sequence repetition code indicating that a sequence must be generated again. If, in the child array, the index in sequence repetition index field is set to "10" microprocessor **30** will not generate a sequence again, when the command code set corresponding to a child array is being executed.

It will be appreciated that microprocessor **30** may generate a sequence of signals for a desired command code set, based on the information contained in a corresponding parent or child array. In operation microprocessor **30** is configured to generate signals for a variety of most popular command code sets relating to most popular commercially available devices.

In order to construct these parent and child arrays, first all signals generated by various remote controllers that control most of the commercially available devices may be analyzed. In accordance with one method for constructing parent and child arrays, a signal analyzer is coupled to the output of different commercially available remote controllers to determine the command code set corresponding to each controller formed by a sequence of signals generated in response to keys pressed on those controllers. These signals are then analyzed either manually or by utilizing a computer program, in order to categorize the command code sets into parent and child command code sets.

In one embodiment in accordance with the present invention, one criteria for determining a parent command code set is the shape and frequency of signals corresponding to logical "1's" and "0's." For a group of command code sets that require the same shape an frequency for logical "1's" and "0's", microprocessor **30** may use one of the command code sets as a parent command code set and the remaining command code sets as a child command code set. The information corresponding to the shape of "1's" and "0's"

will be stored in the parent array corresponding to the parent command code set, and, may not be stored in a child array corresponding to a child command code set. Another criteria for determining which command code set among a group of command code sets may be considered as a parent command code set is the number of common dependent sequences, or any other information, that each command code set has with other command code sets. The command code set with the highest number of dependent sequences common with other dependent sequences with other command code sets may be considered as a parent command code set. For example, assume that TV set A may require the same dependent sequence for "power on" command as TV set B and TV set C. Furthermore TV set A may require the same dependent sequence for "volume up or down" as TV set B. Finally TV set A may require the same dependent sequence for "channel up or down" as TV set C. Thus, TV set A has 3 dependent sequences that are common with either TV sets B or C. TV set B has 2 dependent sequences that are common with either TV sets A or C. Finally, TV set C has also 2 dependent sequences that are common with either TV sets A or B. Thus the command code set corresponding to TV set A will be considered as a parent command code set and all the information necessary to create the signals corresponding to this parent command code set will be stored in a parent array. The information necessary to create the signals corresponding to TV set B and C are then stored in child arrays corresponding to this parent command code set.

It will be appreciated that by employing the encoding technique in accordance with the present invention a considerable amount of memory space may be saved and a compression ratio in the order of 15000 to 1 may be achieved. Furthermore, although the encoding techniques in accordance with the invention has been explained in conjunction with handset **10**, base station **25** may conveniently employ the same encoding technique.

Referring back to FIG. **2**, sound, including voice, signals and corresponding command or control signals, that are used to modulate a carrier frequency, are received and transmitted via a radio frequency transceiver **50** that contains an antenna **58**. These signals may be in analog or digital form. Similarly sound, including voice, and data signals are received and transmitted via an infra-red transceiver **60** that contains detectors and light emitting devices.

A microphone **18** is used to input sound, including voice, and voice commands. A speaker **20** is used to reproduce sound, including voice, and voice commands. A ringer **22** is used to reproduce telephone ringer sounds and pager sounds generated by microprocessor **30**. Sound or voice signals received by microphone **18**, is recorded and stored by a voice recorder/player integrated circuit **84** under the control of microprocessor **30**. Similarly, microprocessor **30** retrieves stored sound signals from voice recorder/player integrated circuit **84**, and makes the signal available to speaker **20**, radio frequency transceiver **50**, and infra-red transceiver **60**. A sound or voice signal received by microphone **18**, is detected by a voice activated device **86** and processed for pattern recognition. Recognized patterns are translated into digital signals by the voice activated device **86** and input to a microprocessor **30** as external commands.

A sensor **80**, mounted on the enclosure surface, generates signals that are coupled to microprocessor **30** for further processing, display and/or transmission via radio transceiver **50** and/or infra-red transceiver **60**.

A converter **36** contains a analog to digital (A/D) converter and a digital to analog (D/A) converter. The digital to analog converter converts digital signals to analog signals coupled to radio transceiver **50**, speaker **20**, ringer **22**. The analog to digital converter converts received analog signals for input to microprocessor **30**.

A liquid crystal display device **82** receives data signals from microprocessor **30** and converts the data signals for visual display.

A printed circuit board **90**, or similar device provides electrical inter-connectivity paths for all of the components. It may also provide a physical platform for mounting the various components.

A power module **40**, which may be a rechargeable battery pack, provides the electrical power required by all of the components. Power control is provided by microprocessor **30**. The voltage and current selections of power module **40** are based on the intended mode of operation and the size of the apparatus enclosure. Low battery voltage detection is accomplished by a low battery detector **42** (FIG. **3**) that is sensitive to the actual battery voltage. At a preset voltage threshold, the detector will send a signal to microprocessor **30**, which then takes the appropriate action to activate a light emitting device or to generate a warning signal that is sent to ringer **22** for conversion into a warning sound.

Handset **10** is powered by a power module **40**. In one embodiment of handset **10** in accordance with the present invention, a battery save circuit is employed to substantially extend the period that handset **10** may operate without recharging power module **40**.

Handset unit **10** has at least two battery operation modes comprising a ringer off mode and a ringer on mode. In the ringer off mode, microprocessor **30** is placed in a "stop" mode, until a key on the handset is pressed, or the handset is placed on base station **25**, or some other kind of an external hardware interrupt is generated to activate the microprocessor and to begin its operation. During the stop mode the internal clocks of microprocessor **30** are turned off, and, thus, substantially little current is being consumed by the microprocessor. A typical current consumption during the ringer off mode is approximately 150 μA, which leads to a battery life of over 80 days, if a 300 mAh battery is used.

In ringer on mode, handset **10** is configured such that a power signal is provided to microprocessor **30**, to allow the microprocessor execute software instructions in response to command signals sent by base station **25** (FIG. **4**). However, at least one problem associated with this arrangement is that a radio frequency receiver requires a current signal of approximately 20 mA to function properly. This power consumption leads to a battery life of approximately 15 hours. In accordance with the present invention this battery life may be extended substantially as will be explained in more detail hereinafter.

FIG. **7** illustrates a schematic diagram of a battery save circuit **208** that is employed by handset **10** in accordance with the present invention. An output terminal of microprocessor **30** (not shown) is coupled to terminal **210** of battery save circuit **208**. Resistors **212**, **220** and **218** couple output terminal **210** to the base of a transistor **222**. The emitter of transistor **222** is coupled to power supply voltage signal and to one terminal of a capacitor **216** and to one terminal of resistor **218**. The other terminal of capacitor **216** is coupled to a common terminal of resistors **220** and **212**. A diode **214** is coupled in parallel to resistor **212**. Furthermore the collector of transistor **222** is coupled to a resistor **224** and to the base of a transistor **226**. The emitter of transistor **226** is grounded, while its collector is coupled to an external hardware interrupt pin of microprocessor **30** (not shown).

Battery save circuit **208** allows the microprocessor to remain in a stop mode for a predetermined period of time, for example 450 ms. Then it activates the microprocessor for a predetermined duration, such as 50 ms. The microprocessor deactivates itself again for another 450 ms. If during the 50 ms while microprocessor **30** is activated, handset **10** detects an external radio frequency or infra-red signal, it resumes its normal operation. Otherwise microprocessor **30** continues its activation and deactivation cycle continuously.

Microprocessor **30** is adapted to generate a negative transition signal at terminal **210**, identified as "A" in FIG. **7** and enter a stop mode. Once this signal with a negative transition is generated, microprocessor **30** turns itself "off" and enters a "stop" mode. The RC network comprising resistors **212**, **220**, **218** and capacitor **216** provide a 450 ms delay in response to a negative transition signal provided at terminal **210**, although the invention is not limited in scope in this respect, and other types of delay circuits may be employed. After the delay period, transistors **222** and **226** turn "on" and a negative transition signal generates at terminal **228**, identified as terminal "B" in FIG. **7**. Upon detecting this negative transition signal, microprocessor **30** becomes activated. Microprocessor **30** then provides a voltage signal level, V_{cc} at terminal **210** and powers up handset **10** for a predetermined duration, such as 50 ms. Diode D2 provides a positive transition signal at terminal **228**, in response to the positive voltage signal level detected at terminal **210**. This allows battery save circuit **208** reset at a substantially short period of time, so that it becomes ready to generate a new delay when a new negative transition is sensed at terminal **210**.

It will be appreciated that the operation of battery save circuit **208** in accordance with the present invention substantially reduces the use of the battery that powers handset **10**.

FIGS. **8** and **9** are flow charts illustrating the operation of handset **10** in conjunction with battery save circuit **208**. As previously mentioned, handset **10** remains in "stop" mode for a substantial period of time. Preferably, only an external hardware interrupt activates microprocessor **30**. Whenever an external hardware interrupt is generated, different interrupt sources are sequentially checked. Once the interrupt source that has generated an interrupt has been identified, a set of predetermined actions are taken and microprocessor **30** returns to "stop" mode again. These predetermined actions may include generating a signal corresponding to a code, in response to a key pressed on handset **10**. It may also include a low battery detection procedure, wherein microprocessor **30** enters a battery-low mode, whenever microprocessor **30** detects a power supply voltage signal below a predetermined threshold.

Referring back to FIG. **3** a block diagram of the electronic components illustrated in FIG. **2** is shown, including the component inter-connections of a general wireless communication, command, and sensor device, according to a preferred embodiment of the invention. Touch sensitive device **14** is used to interface with the handset device. By touching any sensitive area, shown as oval shaped areas in FIG. **2**, an electrical signal is generated for processing by microprocessor **30**. The signal has a logical representation that prompts microprocessor **30** to generate other command and control signals for functions within or external to the apparatus, to make computations, and to generate data or activate communication paths. In response to touch sequences, modes of operation and communication protocols are selected as explained above in reference with FIG. **6**. Some of the sequences are punch through operations where a touch screen area may serve as more than one function. Radio frequency operation is accomplished through the use of RF transceiver **50**, RF/IR selector **52**, microprocessor **30**, frequency synthesizer **56**, and a phase locked loop circuit. Frequency selection or channel designation and selection is controlled by microprocessor **30**. Transmission and reception protocols are contained within microprocessor **30** and are activated based on the mode selection made via touch sensitive device **14**. In this manner, handset **10** communicates with any number of external devices having compatible transceivers.

In one embodiment, touching the touch sensitive device **14**, in an area labeled "intercom", activates a communication path from microphone **18** to sound/data coupler **62** to RF/IR selector **52** to either radio frequency transceiver **50** or infra-red frequency transceiver **60** to establish a two way communication link with a wireless intercom **2** as shown in FIG **1***b*. In another embodiment, touching the touch sensitive device **14** area labeled "phone", activates all wireless telephone functions within the device and establishes a remote telephone communication link with a telephone base apparatus **25** as shown in FIG. **1***b*.

As illustrated in FIG. **1***b*, in response to sequences pressed on touch sensitive device, handset **10** establishes communication links, through both radio frequency transceiver and infra-red frequency transceiver, to security alarm systems **3**, remote alternating current actuators **4**, TV **5**, VCR **6**, cable control boxes **7**, sound system **8**, remote control sensors **9** and/or other appliances or apparatus **11**, such as a home computer. In a more generalized embodiment shown in FIG. **2** the communications handset **10** provides for replacing touch sensitive device **14** label overlay with another overlay **13** and through a program function designating a different set of external apparatus, such as garage door opener. In another embodiment, the combination of touch sensitive device **14**, microprocessor **30** and liquid crystal display device **82**, or similar display component, and programmable features within the software, pre-programmed icons representing other external apparatus can be displayed for selection in lieu of interchanging the touch sensitive device **14** label overlay **13**.

Referring back to FIG. **3**, in an intercom embodiment, an external intercom apparatus **2** (See FIG. **1***b*) generates a control and voice signal that is detected by either radio frequency transceiver **50** or infra-red transceiver **60**. The received radio frequency signals are routed by the RF/IR selector **52**. The control signal goes to microprocessor **30**, via data detector **54**. The voice signal goes to the D/A converter **36** for output to speaker **20**, or it goes directly to speaker **20**. The received infra-red frequency signals are routed by RF/IR selector **52**. The control signal goes to microprocessor **30** for processing, including generating a ringer signal, and the voice signal goes to D/A converter **36** for output to speaker **20** or it goes directly to speaker **20**. In one embodiment in accordance with the invention base station **25** interacts with handset **10** to perform intercom and paging functions.

In an alarm embodiment, touching a pre-designated area on touch sensitive device **14** (FIG. **1***b*), generates a signal that is recognized by micro-processor **30** as an alarm signal. The microprocessor generates a command signal, with a specific protocol, that is output to the RP/IR selector **52** for coupling to the radio frequency and/or infra-red frequency transceiver which in turn transmit the appropriate signals. An alarm apparatus **3** equipped with a compatible RF and/or IR detector and signal processor is activated in response to the signal transmitted by radio and/or infra-red frequency transceivers.

In another embodiment a remote alternating current actuator **4** is activated or deactivated to set variable voltage levels by touching the touch sensitive device area labeled "actuator". Through programming and interaction with microprocessor **30** and liquid crystal display **82**, or similar device, any number of actuators can be controlled by appropriate assignment of codes.

In a home entertainment embodiment, the combination of touch sensitive device **14**, microprocessor **30**, embedded software and data base, a control signal path through RF/IR selector **52**, infra-red transceiver **60** containing a light emitting device, a remote control function is established for control of TVs **5**, VCRs **6**, cable boxes **7**, sound systems **8** and any other appliance equipped with a compatible receiver. The touch sensitive device **14** has mode and function selection sensitive areas that when touched causes microprocessor **30** to generate the appropriate command and control signals for the appliance. In an alternate embodiment, the interaction with touch sensitive device **14**, microprocessor **30** and external programming options, liquid crystal display device **82**, or similar device, any number of pre-programmed remote sensors **9** and/or apparatus **11** can be commanded and controlled. In an alternate embodiment infrared transceiver **60** may be used in conjunction with microprocessor **30** to couple and encode infrared control signals generated and transmitted by other remote infrared control devices.

In the telephone embodiment, touch sensitive device **14** area labeled "phone" activates telephone protocols in microprocessor **30** which generates the control signals for accessing base station **25**, a cellular cell, or some other apparatus responsive to the control signal. Carrier frequency modulation occurs with transceivers **50** and **60**. The microprocessor enables sound/data coupler **62**, RF/IR selector **52**, frequency synthesizer **56**, and radio frequency transceiver **50** or infra-red frequency transceiver **60**. If radio frequency transceiver **50** is used, the frequency synthesizer **56** generates a carrier signal, under microprocessor control, which is then coupled to the RF transceiver **50**. Microphone **18** couples voice to sound/data coupler **62** which links the RF/IR selector **52** and the radio frequency transceiver **50** or the infra-red frequency transceiver **60**.

In the voice activated embodiment, voice commands are input via microphone **18** to voice activated device IC **86**, which scans the voice signal with a pattern recognition algorithm. Recognized commands are converted into digital signals that then go to microprocessor **30**. Microprocessor **30** processes the commands and generates the appropriate command and control signal for internal processing or for transmission via radio frequency transceiver **50** or through infra-red frequency transceiver **60**. The voice activated device mode is selected by touching a pre-selected sensitive area on touch sensitive device **14**. In a second alternate embodiment, this mode may be selected with voice command input via microphone **18**. In an alternate embodiment, this mode is selected through a program menu selection that is accessed via interaction of touch sensitive device **14**, microprocessor **30** and the liquid crystal display device **82**.

In a voice recorder/player embodiment, sound and/or voice is input via microphone **18** or the radio frequency transceiver **50** or the infra-red frequency transceiver **60** to voice recorder/player IC **84** which has been activated by microprocessor **30** after a mode selection signal has been received from touch screen **14**. The sound and/or voice is stored within voice recorder/player IC **84**. Upon command by a signal initiated by microprocessor **30**, the stored sound or voice is played back through speaker **20** or is sent to sound/data coupler for transmission via the radio frequency transceiver or the infra-red frequency transceiver.

In a sensor embodiment, sensors **80** detect physical phenomena differentials between the sensor and the external physical environment and/or the human skin or some external device brought into contact or close proximity to the sensor. The sensor converts differentials into data signals that are coupled to microprocessor **30**. In an alternative embodiment, sensors **9** external to the communications, command, control and sensing handset device may be interrogated via radio frequency transceiver **50** or infra-red frequency transceiver **60** and then coupled to microprocessor **30**. The microprocessor in conjunction with touch sensitive device **14** and liquid crystal display device **82** interactively perform a monitoring function. In one embodiment, the microprocessor performs logical and/or computational functions generating a command and/or control signal that is sent back to remote sensor to perform a corresponding function.

One such sensor, for example, detects pressure differentials created by human heart which can then be converted into a heart beat rate per unit of time. Menu selection for each sensor is accomplished by the interaction of touch sensitive device **14**, microprocessor **30** and liquid crystal display device **82**. In one embodiment sensor **80** is a plug-in component that can be replaced by other sensing components making different measurements such as temperature, molecular degassing, and the like. Algorithms within microprocessor **30**, matching the type of sensor, perform appropriate conversions for display on liquid crystal display device **82** or for transmission as radio frequency signals or infra-red frequency signals. These signals may be transmitted to a medical facility or to an environment monitoring and control center.

FIG. **5** is a block diagram of the electronic components comprising base station **25** which performs substantially the same functions as handset **10**. However, base station **25** may employ at least three additional functions, such as: coupling the wireless and wired communications, command, control and sensing system to a telephone line a telephone line interface **310**; coupling FM signals to and from the AC power line with an AC line FM coupler **161**; and providing AC power via an AC power supply **116** for operating the base station and charging the handset battery with charger **115**. The base station microprocessor **200** is preferably a Motorola 6508 microprocessor and includes an external memory **145** to provide an additional means for storing programs and data for controlling the base station or for executing other software applications. Touch sensitive device **125** is used to interface with the base station.

By touching any touch sensitive device area an electrical signal is generated for processing by microprocessor **200**. The signal has a logical representation that prompts microprocessor **200** to generate other command and control signals for functions within or external to the base station, to make computations, and to generate data or activate communication paths. In response to touch sequences, modes of operation and communication protocols are selected. Some of the sequences are punch through operations where a touch sensitive device area serves to perform more than one function.

Radio frequency transceiver **160** and RF/IR selector **165**, frequency synthesizer **167**, a phase locked loop circuit (not shown) and an antenna **169** collectively provide RF operation. Frequency selection or channel designation and selection is controlled by microprocessor **200**. Transmission and

reception protocols are governed by microprocessor **200** and are activated based on the mode selection made via touch sensitive device **125**. In this manner, base station **25** communicates with any number of external devices having compatible transceivers.

As illustrated in FIGS. **4** and **1***b*, in response to sequences pressed on touch sensitive device **125**, the base station can also establish communication links, through both radio frequency transceiver **160** and infra-red frequency transceiver **170**, to external devices, such as remote alternating current actuators **4**, TV **5**, VCR **6**, cable control boxes **7**, sound system **8**, or remote sensors **9** and/or any other apparatus **11**. Referring to FIG. **4**, in a more generalized embodiment, the base station provides for replacing label overlay **101** on the touch sensitive device **125** with another overlay. Through a program function, a different set of external apparatus, such as garage door opener, can then be controlled via the touch sensitive device **125**. In another embodiment, pre-programmed icons representing other external apparatus can be displayed on liquid crystal display device **130** in lieu of interchanging label overlays on to touch sensitive device **125**.

In one embodiment, touching the touch sensitive device **125** in an area labeled "intercom," activates a communication path from microphone **105** to sound/data coupler **111** to RF/IR selector **165** to either radio frequency transceiver **160** to antenna **169** or infra-red frequency transceiver **170** to establish a two way intercom communication link between handset **10** and base station **25** as shown in FIGS. **1***a* and **1***b*. In an external intercom embodiment, an external intercom apparatus **2** generates a control and voice signal that is detected by either radio frequency transceiver **160** or infra-red transceiver **170**. The received radio frequency signals are routed to RF/IR selector **165**. The control signal is then routed to microprocessor **200**, via data detector **166**. The voice signal is either routed to D/A converter **168** for output to speaker **155** or directly to speaker **155**. Similarly, received infra-red frequency signals are routed to RF/IR selector **165**. The control signal is routed to microprocessor **200** and the voice signal is routed either to D/A converter **168** for output to speaker **155** or directly to speaker **155**. Ringer and alert signals are generated by the microprocessor in response to received data and/or software commands and are coupled to the ringer **140**. In an alternative embodiment in accordance with the invention external intercom function may be initiated by handset **10**. This intercom function may be employed in a paging operation.

In an alarm embodiment, touching a pre-designated area on touch sensitive device **125**, labeled "alarm", generates a signal that is recognized by microprocessor **200** as an alarm signal. The microprocessor generates a command signal, with a specific protocol, that is outputted to the RF/IR selector **165** for coupling to the radio frequency and/or infra-red frequency transceiver which in turn transmit the appropriate signals. An alarm apparatus **3** equipped with a compatible RF and/or IR detector and signal processor is activated in response to the signal transmitted by radio and/or infra-red frequency transceivers.

In another embodiment, a remote alternating current actuator **4** is activated and deactivated by touching the touch sensitive device area labeled "actuator". Through programming and interaction with microprocessor **200** and liquid crystal display **130**, or similar device, any number of actuators can be commanded by appropriate assignment of codes.

In a home entertainment embodiment, the combination of touch sensitive device **125**, microprocessor **200**, embedded software and data base, a control signal path through RF/IR selector, infra-red transceiver **170** containing a light emitting device, a remote control function is established for control of TV **5**, VCR **6**, cable boxes **7**, sound systems **8**, and any other appliance or apparatus **11** equipped with a compatible receiver. The touch sensitive device **125** has mode and function selection sensitive areas that when touched cause microprocessor **200** to generate the appropriate command and control signals for the appliance as explained in detail in reference with FIG. **6**. In an alternate embodiment, the interaction with touch sensitive device **125**, microprocessor **200** and external programming options, liquid crystal display **130**, or similar device, any number of pre-programmed appliances can be commanded and controlled.

In a telephone embodiment, touch sensitive device **125** activates telephone protocols in microprocessor **200**. In response, microprocessor **200** generates the control signals for accessing the telephone line via the telephone line interface **310**, the handset, a cellular cell, or some other apparatus responsive to the control signal. The microprocessor enables sound/data coupler **111**, RF/IR selector, frequency synthesizer **167**, and radio frequency transceiver **160** or infra-red frequency transceiver **170**. If the radio frequency communications link is to be used, the frequency synthesizer **167** generates a carrier signal, under microprocessor control, which is then coupled to the RF transceiver **160**. Microphone **105** couples voice to sound/data coupler **111** which links the RF/IR selector **165** and the radio frequency transceiver **160** or the infra-red frequency transceiver **170**. The telephone line interface **310** provides the hook relay control, ring detector, cable adapter and dual tone multiple frequency (DTMF) signal. In this manner the base station **25** also performs as an RF and/or IR sound, voice and data repeater station for the handset **10**. In a repeater embodiment the base station receives and retransmits signals from the handset or from other external apparatus.

In a voice activated embodiment, voice commands are input via microphone **105** to voice activated device IC **305**, which scans the voice signal with a pattern recognition algorithm. Recognized commands are converted into digital signals that then go to microprocessor **200**. Microprocessor **200** processes the commands and generates the appropriate command and control signal for internal processing or for transmission via radio frequency transceiver **160** or through infra-red frequency transceiver **170**. The voice activated device mode is selected by touching a pre-selected sensitive area on touch sensitive device **125**. In an alternate embodiment, this mode is selected through a program menu selection that is accessed via interaction of touch sensitive device **125**, microprocessor **200** and the liquid crystal display device **130**.

In a voice recorder/player embodiment, sound and/or voice is input via microphone **105** or via the radio frequency transceiver **160** or the infra-red receiver **170** to voice recorder/player IC **300** which has been activated by microprocessor **200** after a mode selection signal has been received from touch sensitive device **125**. The sound and/or voice is stored within voice recorder/player IC **300**. Upon command by a signal initiated by microprocessor **200**, the stored sound or voice is played back through speaker **155** or is sent to sound/data coupler for transmission via the radio frequency transceiver or the infra-red frequency transceiver.

In a sensor embodiment, sensors **120** detect physical phenomena differentials between the sensor and the external physical environment and/or the human skin or some external device brought into contact or close proximity to the sensor. The sensor converts differentials into data signals

that are coupled to microprocessor **200**. One such sensor, for example, detects pressure differentials created by human heart which can then be converted into the heart beat rate per unit of time. Menu selection for each sensor is accomplished by the interaction of touch sensitive device **125**, microprocessor **200** and liquid crystal display device **130**. In one embodiment, sensor **120** is a plug-in component that can be replaced by other sensing components making different measurements such as temperature, molecular degassing, and the like. Algorithms within microprocessor **200**, matching the type of sensor, perform appropriate conversions for display on liquid crystal display device **130** or for transmission as radio frequency signals or infra-red frequency signals. These signals may be transmitted to a medical facility or to an environment monitoring and control center. In an alternative embodiment, sensors external to the communications, command, control and sensing base station **10** can be interrogated via the radio frequency transceiver **160** or infra-red frequency transceiver **170** and are then coupled to microprocessor **200**. The microprocessor in conjunction with touch sensitive device **125** and liquid crystal display device **130** interactively perform a monitoring function. In one embodiment, the base station **25** performs logical and/or computational functions generating a command and/or control signal that is sent back to remote sensor to perform a corresponding function. In another embodiment the base station sends said signals to the handset **10** or other apparatus such as a personal computer for display or further processing.

In another base station embodiment, frequency modulated signals are coupled to the alternating current power line for communication with external apparatus and/or appliances.

Base station power is provided both with a backup battery pack **115** and by direct connection to an alternating current source **116**. The alternating current source is further used to charge the handset battery. A battery charger **110** provides the means for charging the handset battery and the battery within the base station **25**.

It will be appreciated that the wireless and wired communications, command, control and sensing system **1** for sound, voice and/or data transmission and reception is particularly useful in combination with home or business office appliances; such as intercoms, alarm systems, house light actuators, pagers, emergency communication systems, cordless telephone, cellular base stations, televisions, VCRs, sound systems, cable boxes, garage door openers, personal security devices, personal computers, human health monitors and other devices capable of receiving sound, voice, data and/or command and control signals in radio or infra-red frequencies.

Although the invention has been described in connection with various preferred embodiments, those skilled in the art will appreciate that numerous modifications and adaptations may be made without departing from the spirit and scope of the invention as set forth in the following claims.

What is claimed is:

1. A communications, command, control and sensing system for communicating with a plurality of external devices comprising:

a microprocessor for generating a plurality of control signals used to operate said system, said microprocessor creating a plurality of reprogrammable communication protocols, for transmission to said external devices wherein each communication protocol includes a command code set that defines the signals that are employed to communicate with each one of said external devices;

a memory device coupled to said microprocessor configured to store a plurality of parameter sets retrieved by said microprocessor so as to recreate a desired command code set, such that the memory space required to store said parameters is smaller than the memory space required to store said command code sets;

a user interface coupled to said microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor and displaying a plurality of menu selections available for the user's choice, said microprocessor generating a communication protocol in response to said user selections; and

an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices, infra-red frequency signals in accordance with said communications protocols.

2. The communication, command, control and sensing system of claim **1** further comprising:

a radio frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said devices, radio frequency signals at variable frequencies within a predetermined frequency range and in accordance with said communication protocols; and

a selector controlled by said microprocessor for enabling said radio frequency transceiver and said infra-red frequency transceiver to transmit a desired command code set generated by said microprocessor via either radio frequency signals and infra-red signals as desired, and to receive a signal from any one of said external devices via either radio frequency signals and infra-red signals.

3. The communications command, control and sensing system of claim **2** wherein said user interface further comprises:

a touch sensitive device generating a plurality of signals in response to actuation and a display device for displaying messages generated by said microprocessor.

4. The communications command, control and sensing system of claim **3**, wherein said microprocessor generates user selectable graphical icons for display on said display device.

5. The communications, command, control and sensing system of claim **4**, wherein said touch sensitive device is a touch screen having a plurality of replaceable icon sets, wherein each set is configured to be displayed on said touch screen so as to designate a desired set of functions to each one of said icon sets.

6. The communications, command, control and sensing system of claim **1**, further comprising a sound activated device coupled to said microprocessor, said sound activated device used to recognize sound signals including sound commands corresponding to executable logical commands, said sound activated device generating signals in response to recognized sound signals for further processing by said microprocessor.

7. The communications command, control and sensing system of claim **6**, further comprising a sound and data coupling device adapted to receive sound as data signals.

8. The communications, command, control and sensing system of claim **6**, further comprising a sound recorder and playback device coupled to said microprocessor, said sound recorder and playback device used for recording sound signals, said microprocessor responding to said recorded sound signals at a later time.

9. The communications, command, control and sensing system of claim 8, further comprising a speaker coupled to said voice recorded and playback device for playing back said recorded user generated signals, in response to a control signal generated by said microprocessor.

10. A handset and a base station employed in a communications, command, control and sensing system for communicating with a plurality of external devices, said handset and base station each comprising:

a microprocessor for generating a plurality of control signals used to operate said system, said microprocessor creating a plurality of communication protocols for transmission to said external devices, each protocol containing a plurality of control signals used to interface with an external device, wherein each communication protocol includes a command code set that defines the signals that are employed to communicate with each one of said external devices;

a memory device coupled to said microprocessor configured to store a plurality of parameter sets retrieved by said microprocessor so as to recreate a desired command code set, such that the memory space required to store said parameters is smaller than the memory space required to store said command code sets;

a user interface coupled to said microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor, and displaying a plurality or menu selections available for user's choice, said microprocessor generating a communication protocol in response to said user selections;

a radio frequency transceiver coupled to said microprocessor fro transmitting to said external devices and receiving from said external devices, radio frequency signals at variable frequencies within a predetermined frequency range and in accordance with said communication protocols;

an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices infra-red frequency signals in accordance with said communications protocols;

a selector controlled by said microprocessor for enabling said radio frequency transceiver and said infra-red frequency transceiver, to transmit a desired command code set generated by said microprocessor via either radio frequency signals and infra-red signals as desired, and to receive a signal from any one of said external devices via either radio frequency signals and infra-red signals; and

a data detector coupled to said selector for receiving signals transmitted from each one of said external devices, said data detector providing control signals received from said external devices to said microprocessor.

11. The communications command, control and sensing system of claim 10 wherein said user interface further comprises:

a touch sensitive device generating a plurality of signals in response to pressure exerted in various portions of said device; and

a display device for displaying messages generated by said microprocessor.

12. The communication, command, control and sensing system of claim 10, wherein said base station is coupled to at least one telephone line via a telephone line interface.

13. The communications, command, control and sensing system of claim 10 wherein said base station is adapted to couple frequency modulated signals to an alternating current power line.

14. The communications, command, control and sensing system of claim 10 wherein said base station further comprises a backup battery power source.

15. The communications, command, control and sensing system of claim 11, wherein said microprocessor generates user selectable graphical icons for display on said display device.

16. The communications, command, control and sensing system of claim 15, wherein said touch sensitive device is a touch screen having a plurality of replaceable icon sets, so as to designate a desired set of functions to each one of said icon sets.

17. The communications command, control and sensing system of claim 10, further comprising a voice activated device coupled to said microprocessor, said voice activated device used to recognize predetermined voice commands, said voice activated device generating signals in response to recognized voice commands for further processing by said microprocessor, said voice activated device further coupled to said selector for directly providing voice signals for transmission by one of said transceivers.

18. The communications, command, control and sensing system of claim 17, further comprising an internal and an external intercom device, so as to provide voice and data communications among said base station, said handset and external intercom devices.

19. The communications, command, control and sensing system of claim 18, further comprising a voice recorder and playback device coupled to said microprocessor, said voice recorder and playback device used for recording user generated voice signals, said microprocessor retrieving said recorded user generated signals at a later time, said voice recorder and playback device coupled to said selector for directly providing voice signals for transmission by one of said transceivers.

20. The communications, command, control and sensing system of claim 19, further comprising a speaker coupled to said voice recorder and playback device for playing back said recorded user generated signals, in response to a control signal generated by said microprocessor, said speaker further coupled to said selector for reproducing voice signals received by one of said transceivers.

21. The communications, command, control and sensing system of claim 20, wherein said data detector further comprises:

means for detecting digital data;

means for discriminating voice signals from control signals received from said selector; and

means for providing said control signals to said microprocessor.

22. The communications command, control and sensing system of claim 21, further comprising a ringer coupled to said microprocessor, said ringer generating a telephone ring, a pager ring and rings associated with warning signals generated by said microprocessor.

23. The communications command, control and sensing system of claim 10, further comprising at least one sensor located on either of said handset and base station, said sensor coupled to said microprocessor for detecting and measuring physical phenomena.

24. The communications, command, control and sensing system of claim 23 further comprising an AC actuator system wherein said actuator is adapted to be remotely activated or deactivated so as to control external apparatus.

25. The communications, command, control and sensing system of claim 23, further comprising an external alarm system, wherein said user interface generates a signal cor-

responding to an alarm indication, said microprocessor generates a command signal having a corresponding protocol, for transmission to said external alarm system, said external alarm system activated in response to said protocol.

26. The wireless communications command, control and sensing system of claim **23**, further comprising a plurality of home entertainment systems, wherein said user interface generates a plurality of signals corresponding to each of said entertainment systems, said microprocessor generates a command signal having a corresponding protocol associated with each one of said entertainment systems, for transmission to said entertainment systems, said entertainment systems communicating with said communications command, control and sensing system.

27. The communications, command, control and sensing system of claim **1** wherein one of said parameter sets stored corresponding to one of said command code sets is accessible for use so as to create other command code sets.

28. The communications, command, control and sensing system of claim **27**, wherein said microprocessor is configured to concurrently generate more than one command code sets so as to allow said user interface to control more than one corresponding external devices among said plurality of external devices.

29. The communications, command, control and sensing system of claim **1**, further comprising a sensor coupled to said microprocessor for detecting and measuring physical phenomena corresponding to said user.

30. The communications, command, control and sensing system of claim **29** wherein said sensor measures said user's physical indications.

31. The communications, command, control and sensing system of claim **23** wherein said physical phenomena corresponds to said user.

32. The communications, command, control and sensing system of claim **31** wherein said physical phenomena is measured in response to said user's skin contact with said sensor.

33. The communications, command, control and sensing system of claim **31** wherein said physical phenomena includes said user's heart bit and temperature.

34. A communications, command, control and sensing system for communicating with a plurality of external devices comprising:

a microprocessor for generating a plurality of control signals used to operate said system, said microprocessor creating a plurality of reprogrammable communication protocols for transmission to said external devices wherein each communication protocol includes a command code set that defines the signals that are employed to communicate with each one of said external devices;

a memory device coupled to said microprocessor configured to store a plurality of parameter sets retrieved by said microprocessor so as to recreate based on said parameter sets a desired set of pulse signals corresponding to logical "1's" and "0's" as specified by a command code set;

a user interface coupled to said microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor and displaying a plurality of menu selections available for the user's choice, said microprocessor generating a communication protocol in response to said user selections; and

an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices, infra-red frequency signals in accordance with said communications protocols.

* * * * *

are within 40 miles of an airport with regular commercial service (Shreveport Regional Airport and Texarkana Regional Airport, respectively) and both are about a three-hour drive from a major commercial airport hub (Love Field and DFW).

2. The Marshall Division's Experience In Salazar I Weighs Strongly In Favor Of Transfer Under Factor 4.

In contrast, Factor 4 weighs heavily in favor of transfer to Marshall. Factor 4 includes within it "a strong interest in having the same court decide related cases." *In re Vicor Corp.*, 493 F. App'x 59, 61 (Fed. Cir. 2012) (applying Fifth Circuit law) ("We have held that the existence of multiple lawsuits involving the same issues is a paramount consideration when determining whether a transfer is in the interest of justice.") (internal citations omitted).

As discussed above, the Marshall Division has extraordinary experience with this plaintiff, the '467 Patent, the HTC Smartphones, and the related issues that Salazar asks the Court to resolve yet again in *Salazar II*. As the Court has previously found, cases involving the same plaintiff and the same asserted patent are certain to generate common legal and factual questions that counsel in favor of transferring a case so that a single court can resolve them. *See Princeton Digital Image Corp. v. Facebook, Inc.*, No. 2:11-cv-400, 2012 WL 3647182, at *5 (E.D. Tex. Aug. 23, 2012) (Gilstrap, J.) (transferring case to S.D.N.Y. where other cases asserting the same patent by the same plaintiff were pending). That logic applies with special force here, not only because the same patent is asserted by the same plaintiff, but because it is being asserted against the same accused devices. So it is foreseeable that nearly all of the legal and factual questions presented will be identical between *Salazar I* and *Salazar II*, including but not limited to claim construction, infringement, invalidity, the damages models, and the marking defense.

It is worth noting that this case is not fully co-pending with *Salazar I*: it is a serial effort at re-litigation filed nearly three years after the complaint in *Salazar I*. *Compare Salazar I*, Dkt. 1 (Oct. 5, 2016), *with Salazar II*, Dkt. 1 (June 18, 2019). The Marshall Division does not merely stand ready to decide relevant overlapping issues in *Salazar I*; it has already decided numerous of those issues in ruling on 11 memorandum opinions, a jury verdict, the final judgment, and several post-judgment motions. *See generally supra*, § II. And it currently has under consideration findings of fact and conclusions of law on the pending counterclaim for invalidity. *Salazar I*, Dkt. 299

Given the transferee court's extensive history in *Salazar I*, Defendants also respectfully submit that the Marshall Division is in a superior position to rule on the preclusive effects of the verdict and final judgment in *Salazar I*. Defendants have filed a motion to dismiss this case in view of *Salazar I*, and they are likely to file additional motions relating to the issue-preclusion effects of *Salazar I* for issues previously decided against Salazar. For example, Defendants will likely argue that Salazar is precluded from challenging certain damages and noninfringement theories. *See Salazar I*, Dkt. 213. And if the Court adopts HTC Corp.'s pending findings of facts and conclusions of law, Defendants will move for judgment that the '467 Patent is invalid. *See Salazar I*, Dkts. 299-301. As between the Marshall and Texarkana Divisions, the Marshall Division is better positioned to decide those motions, given that it decided *Salazar I*. For these reasons, judicial economy strongly weighs in favor of transfer to Marshall.

3. The Public Interest Factors Are Neutral.

Factor 5, the relative congestion of the courts, is neutral. Defendants are unaware of any publicly available sources of information regarding the relative congestion of two divisions

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

JOE ANDREW SALAZAR, Plaintiff, v. AT&T MOBILITY LLC, SPRINT/UNITED MANAGEMENT COMPANY, T-MOBILE USA, INC., AND CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, Defendants.	Civil Action No. 5:19-cv-75 DEMAND FOR JURY TRIAL

PLAINTIFF JOE ANDREW SALAZAR'S RESPONSE IN OPPOSITION TO AT&T MOBILITY, LLC, SPRINT/UNITED MANAGEMENT COMPANY, T-MOBILE USA, INC., AND CELLO PARTNERSHIP D/B/A VERIZON WIRELESS' MOTION TO DISMISS UNDER RULE 12(b)(6)

omitted). Defendants have not met their burden of establishing that all of these requirements are satisfied, and claim preclusion is therefore improper.

1. <u>This case does not involve the same claim or cause of action as the HTC Corp. litigation.</u>

The same claim or cause of action is not involved in both actions, and this requirement is therefore not met. Contrary to Defendants' assertion, claim preclusion does not arise merely because "the same patent is asserted against the same HTC Smartphones." Motion at 8; *see Xiaohua Huang v. Huawei Techs. Co.*, 2019 WL 1246260, at *4 (E.D. Tex. Feb. 12, 2019), *report and recommendation adopted*, 2019 WL 1239433 (E.D. Tex. Mar. 18, 2019) (explaining that "device equivalence is a necessary but not sufficient condition for claim preclusion").[5]

To determine whether both suits involve the same cause of action, the Fifth Circuit applies the transactional test, which focuses on whether the two cases "are based on the same nucleus of operative facts." *Hous. Prof'l Towing*, 812 F.3d at 447; *Test Masters Educ. Servs., Inc. v. Singh*, 428 F.3d 559, 571 (5th Cir. 2005). Likewise, "a claim for patent infringement can only be barred by claim preclusion if that claim arises from the same transactional facts as a prior action." *Acumed LLC v. Stryker Corp.*, 525 F.3d 1319, 1326 (Fed. Cir. 2008). "It is the nucleus of operative facts, rather than the type of relief requested, substantive theories advanced, or types of rights asserted that defines the claim." *Hous. Prof'l Towing*, 812 F.3d at 447. Further,

[5] In the HTC Corp. litigation, the jury did not make a specific finding that HTC Corp.'s products were noninfringing—*i.e*. not constituting the "patented invention." Rather, the jury found that Salazar had not proven "that HTC Corporation infringed ANY of the Asserted Claims **through the use, sale, or offer for sale in the *United States*, or importation into the *United States***, of any of the following Accused Products." Verdict Form, Dkt. #272, at 2 (**Ex. A**) (emphasis added). Thus, the jury's finding of noninfringement may well have been based on HTC Corp.'s lack of activities giving rise to infringement in the United States—and *not* because the accused devices failed to meet the claim elements of the asserted claims.

2. HTC Corp. and the U.S. carriers are not in privity.

Because the two cases do not share the same claim or cause of action, the Court need not reach this factor. However, Defendants' contention that they and HTC Corp. are in privity is not only inconsistent with the governing law, it misrepresents the relationship between the parties and contradicts HTC Corp.'s own admissions and arguments made in the first case.

Privity is a "legal conclusion that the relationship between the one who is a party on the record and the non-party is sufficiently close to afford application of the principle of preclusion." *Vasquez v. Bridgestone/Firestone, Inc.*, 325 F.3d 665, 677 (5th Cir. 2003) (quoting *Sw. Airlines, Inc. v. Tex. Int'l Airlines, Inc.,* 546 F.2d 84, 95 (5th Cir. 1977)). Privity "designates a person so identified in interest with a party to former litigation that he represents precisely the same right in respect to the subject matter involved." *Sw. Airlines*, 546 F.2d at 95 n.38. The privity analysis requires a court "to look to the surrounding circumstances to determine whether claim preclusion is justified." *Russell v. SunAmerican Sec., Inc.,* 962 F.2d 1169, 1173 (5th Cir. 1992) (citation omitted). "[T]he due process clauses prevent preclusion when the relationship between the party and non-party becomes too attenuated." *Sw. Airlines*, 546 F.2d at 95 (citing *Hansberry v. Lee*, 311 U.S. 32 (1940)).

A non-party is considered to be in privity for preclusion purposes "where the party to the first suit is so closely aligned with the nonparty's interests as to be his 'virtual representative.'" *Royal Ins. Co. of Am. v. Quinn-L Capital Corp.*, 960 F.2d 1286, 1297 (5th Cir. 1992) (citations omitted). For virtual representation to arise, "there must be an express or implied legal relationship between the party and the nonparty in which the party to the first suit

was appropriate on the grounds stated in that motion, to which Defendants were not a party. If Defendants' motion to dismiss is not granted, the Court's denial of summary judgment in *Salazar I* is unlikely to preclude Defendants from submitting their own dispositive motions in *Salazar II*. Defendants submit that Chief Judge Gilstrap is uniquely qualified to decide that issue given that he presided over the first case.

In short, the opposition assumes that all prior decisions in *Salazar I* will apply here—except the verdict and the final judgment—and that this case should apparently proceed straight to jury trial. Salazar does not concede that there will be other legal issues relating to his patent, invalidity, and the accused products. Further, he is arguing for the offensive application of claim or issue preclusion, which would confirm the merits of Defendants' motion to dismiss based on claim preclusion and the *Kessler* doctrine. *See Meador v. Oryx Energy Co.*, 87 F.Supp.2d 658, 664 (E.D. Tex. Mar. 8, 2000) ("both claim and issue preclusion may be applied to non-parties who are considered to be in privity with the parties in the prior suit").

Because Defendants were not parties to *Salazar I*, they should be afforded a full opportunity to completely and vigorously litigate the case brought against them, including issues that involve "complex technical and patent law issues" unless prevented by the doctrines of claim or issue preclusion, or the *Kessler* doctrine. In short, the Court's decisions in *Salazar I* are not automatically binding on Defendants, nor are Defendants prohibited from presenting motions on issues that were not raised in *Salazar I*.

Instead, any party wishing to argue the preclusive effect of a decision in *Salazar I* will need to satisfy each and every element of the relevant preclusion doctrine. For example, a party that wishes to apply issue preclusion will need to show at least that (1) the issue is identical to the issue litigated in the prior case, (2) the issue was fully and vigorously litigated in the prior case, and (3)

Thus, the Court turns to the second part of § 1404(a): whether transfer serves "the convenience of parties and witnesses" and "the interest of justice." The Fifth Circuit uses an eight-factor test to determine if a district court is within its discretion to transfer a case under § 1404(a):

> The private interest factors are: "(1) the relative ease of access to sources of proof; (2) the availability of compulsory process to secure the attendance of witnesses; (3) the cost of attendance for willing witnesses; and (4) all other practical problems that make trial of a case easy, expeditious and inexpensive." The public interest factors are: "(1) the administrative difficulties flowing from court congestion; (2) the local interest in having localized interests decided at home; (3) the familiarity of the forum with the law that will govern the case; and (4) the avoidance of unnecessary problems of conflict of laws [or in] the application of foreign law."

Volkswagen II, 545 F.3d at 315 (quoting *In re Volkswagen AG*, 371 F.3d 201, 203 (5th Cir. 2004)) (citations omitted).

The parties do not dispute that private interest factors 1–3 and all public interest factors are neutral. Docket No. 35 at 5. Thus, the analysis turns on whether the Marshall Division's experience with the case justifies transfer and any other practical problems that make trial more convenient in one division or the other.

The Federal Circuit has emphasized that "judicial economy plays a paramount role in trying to maintain an orderly, effective, administration of justice." *In re Google, Inc.*, 412 F. App'x 295 (Fed. Cir. 2011) (citing *Cont'l Grain Co. v. Barge FBL–585*, 364 U.S. 19, 26 (1960)). "[T]he existence of multiple lawsuits involving the same issues is a paramount consideration when determining whether a transfer is in the interest of justice." *In re Volkswagen*, 566 F.3d 1349, 1351 (Fed. Cir. 2009). To "permit a situation in which two cases involving precisely the same issues are simultaneously pending in different District Courts leads to the wastefulness of time, energy and money that § 1404(a) was designed to prevent." *Id.* (quoting *Cont'l Grain*, 364 U.S. at 26).

Under the facts here and because the Defendants seek to transfer the case within the Eastern District of Texas, "[a]n honest and reasoned consideration of § 1404(a) justifies and supports transfer of this case to the same [division], to be tried by the same District Judge, where . . ." the same patent and technology was previously litigated. *See Princeton Digital Image Corp. v. Facebook, Inc.*, 2:11-CV-400-JRG, 2012 WL 3647182, at *5 (E.D. Tex. Aug. 23, 2012) (analyzing transfer of concurrently pending cases).

Salazar's argument that potential difficulties selecting jurors weighs against transfer is unpersuasive. That a small portion of Marshall's population served on the jury in *Salazar I* does not taint the entire jury pool, and the odds that a former juror is selected for the panel a second time are not high enough to weigh on this analysis. Salazar also did not provide any support for his position that Marshall's heavier case load but smaller jury pool compared to the Texarkana Division is a practical problem that makes trial more convenient here.

However, this result does not mean that every case where another court has prior experience with the patents, parties or technology will necessarily be more convenient. Every motion to transfer must be weighed on a case-by-case basis. *Stewart Org., Inc. v. Ricoh Corp.*, 487 U.S. 22, 29 (1988) ("Section 1404(a) is intended to place discretion in the district court to adjudicate motions for transfer according to 'an individualized, case-by-case consideration of convenience and fairness.' " (quoting *Van Dusen v. Barrack*, 376 U.S. 612, 622 (1964)). Here and in these unique circumstances, a transfer is warranted.

III. Conclusion

Due to the unique posture of this lawsuit, the Marshall Division is a clearly more convenient venue. Accordingly, the Defendants' motion is to transfer (Docket No. 28) is **GRANTED**. It is therefore

ORDERED that this matter is **TRANSFERRED** to the Marshall Division of this Court.

5. "parameter sets"

Plaintiff asserts that, consistent with the Court's opinion in the HTC Corp. case, this term should be construed to have its plain and ordinary meaning. *See* Ex. F at 46-49; '467 Patent claims 1, 27, and 34; '467 Patent at 8:23–30, 8:34–52, 8:57–65, Ex. B at 1-2; Ex. C at 2; *Semcon*, 2020 WL 2544774, at *6 (stating that "previous claim constructions in cases involving the same patent are entitled to substantial weight" and "in some instances, previous court construction of a disputed term may trigger issue preclusion and bind a party to a previous construction").

Defendants' proposed construction, which is identical to the construction proposed by Intervenor HTC Corp. and rejected by the Court in the HTC Corp. case, should be similarly rejected. Defendants provide no support for deviating from the Court's prior construction/plain and ordinary meaning of this claim term. *Cordis Corp.*, 561 F.3d at 1329 ("To disavow or disclaim the full scope of a claim term, the patentee's statements in the specification or prosecution history must amount to a "clear and unmistakable" surrender."); *Azure Networks*, 771 F.3d at 1347 ("There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.").

6. "a microprocessor for generating . . ., said microprocessor creating . . ., a plurality of parameter sets retrieved by said microprocessor . . ., said microprocessor generating . . ."

Plaintiff asserts that, to the extent not covered by this Court's construction in the HTC Corp. case and addressed above, this claim phrase should be given its plain and ordinary meaning. Ex. F at 15-30; '467 Patent claims 1 and 34; Ex. B at 1-2; Ex. C at 2; '467 Patent at 7:37-39, 8:22-30, 8:60-65, 16:40-45; *Azure Networks*, 771 F.3d at 1347 ("There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.").

Defendants' proposed construction of "one or more microprocessors, each of which must perform the generating, creating, retrieving, and generating functions" impermissibly attempts to change the nature of the claims from capability claims to claims that require functions to be performed in a specific manner. The intrinsic evidence identified by Defendants does not support their construction requiring that a microprocessor "must perform" the generating, creating, retrieving, and generating functions. Furthermore, in the HTC Corp. case, this Court rejected Intervenor HTC Corp.'s similar attempt to change the nature of the claim language from capability claims to claims that require functions to be performed in a specific manner, stating that:

> "the prosecution history indicates that the claims are directed to the *capability of the system to perform the recited function* and do not require or indicate any actual use of the system to perform the recited functions."

Ex. F at 20 (emphasis added).

> "The claims indicate the ability to store a plurality of parameter sets so as to recreate a desired command code set, and *do not actually require that any command code set actually be created*."

Id. at 21 (emphasis added).

> "In the Notice of Allowance, the Examiner indicated the claims were directed to the "capability" of the claimed system to recreate a command code set from a set of parameters to communicate with external devices."

Id. at 19.

> "the claims at issue here make clear the "microprocessor" limitation reflects the capability of that structure rather than the activities of the user"

Id. at 21.

> "The claim indicates only a *capability* of the structure rather than the actual use…"

Id. (emphasis in original)

Furthermore, to the extent Defendants' proposed constructions reference the '467 Patent's specification, these references do not support its proposed constructions, are inconsistent with the disclosures in the specifications, and improperly attempt to narrow the scope of the claims by adding limitations that do not exist in the prosecution history or specification of the '467 Patent. *Cordis Corp.*, 561 F.3d at 1329 ("To disavow or disclaim the full scope of a claim term, the patentee's statements in the specification or prosecution history must amount to a "clear and unmistakable" surrender.").

7. "an infra-red frequency transceiver coupled to said microprocessor for transmitting to said external devices and receiving from said external devices, in accordance with said communications protocols"

Plaintiff asserts that, to the extent not covered by this Court's construction in the HTC Corp. case and addressed above, this claim phrase should be given its plain and ordinary meaning. Ex. F at 31-36, 42-46; Ex. I at 6-7; '467 patent claims 1, 2, 10, and 34; '467 Patent at 1:50-52, 2:17-20, 7:14-25, 7:37–-54, 20:2-11, 20:12-17, 20:41-56, Fig. 1b, Fig. 3, Fig. 5; Ex. B at 5, 10, 11, 13-14. Intervenor HTC Corp. did not propose a construction for this claim term during claim construction in the HTC Corp. case, but the scope of this limitation was directly addressed in the Court's Report and Recommendation of HTC Corp.'s Motion for Summary Judgment in the HTC Corp. case. There, the Court rejected HTC Corp.'s attempt to require that the IR transceiver be capable of transmitting and sending to *each device* within the plurality of devices:

> Effectively, Defendant urges the Court to construe "said external devices" in the microprocessor limitation as "each external device of the plurality of external devices." Salazar, on the other hand, interprets "said external devices" as shorthand for the earlier recited "plurality of external devices"—i.e., a single group made up of external devices. The Court agrees with Salazar. **The limitation only requires that the IR transceiver be capable of sending and receiving IR signals to the plurality of external devices—not that it be capable of transmitting and sending to each device within that plurality**.

Clearly, the memory space required to store "said parameters" refers to the "parameter sets" previously referenced and Defendants' argument that "'said parameters' lack antecedent basis" is without merit.

F. Term No. 11: "a desired command code set"

Defendants provide no expert testimony to support their allegation that the term is indefinite. With respect to Defendants' indefiniteness argument, as noted in Plaintiff's Opening Brief, the Court previously construed this term and did not find it indefinite.

The article "a" means "one or more" and therefore the desired command code set means one or more desired command code sets. *See Freeny v. Fossil Grp., Inc.*, 2019 WL 2078783, at *14 (E.D. Tex. May 10, 2019). As the claim recites, "said microprocessor configured to store a plurality of parameter sets retrieved by said microprocessor so as to recreate a desired command code set," clearly an element of the invention is to recreate a desired command code set from retrieved parameter sets and there is no limiting language as to any particular command code set other than it be recreated from the retrieved parameter sets. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) ("[I]n all aspects of claim construction, the name of the game is the claim."); *see, e.g.*, '467 patent at 7:55-8:65; 16:25-46. A POSITA would understand the plain and ordinary meaning of this term. Defendants have not met their burden of proving this claim indefinite by clear and convincing evidence.

G. Term No. 12: "a microprocessor for generating . . ., said microprocessor creating . . ., a plurality of parameter sets retrieved by said microprocessor . . ., said microprocessor generating . . ."

As a preliminary matter, in their Response, Defendants concede that this claim term relates to "**the capability** of 'one or more microprocessors,"[6] which directly contradicts their proposed construction that affirmatively states that "one or more microprocessors...**must perform** the generating...functions." Further, Defendants argue that "**at least one microprocessor**" is capable of performing the stated functions, which is contradicted by their proposed construction, which demands that "**each of the one or more microprocessors**" (i.e. all microprocessors) must perform the same functions. *See* Dkt. 102 at 17-18 (emphasis added). Because the arguments and analysis in the Response do not support Defendants' proposed construction, they should be discarded.

In re Varma[7] is inapplicable and does not address the proposition Defendants contend it does. As this Court in *Freeny v. Fossil Group, Inc*. makes clear, where there is an open-ended "comprising" claim, the rule of "a" meaning "one or more" applies, and the recited [a microprocessor] means "one or more" [microprocessors] and the subsequent use of the definite articles "the" or "said" in a claim to refer back to the same claim term does not change the general plural rule, but simply reinvokes that non-singular meaning. 2019 WL 2078783, at *14 (E.D. Tex. May 10, 2019). Consequently, any one of the one or more microprocessors can be capable of performing any one of the recited functions in this claim term, and any individual one of the microprocessors (or all the microprocessors) need not be capable of performing all of the recited functions. *Id.*[8] Accordingly, the Court should reject Defendants' proposed constructions.

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[6] Defendants concede that the indefinite article "a" in reference to the "a microprocessor" may mean one or more microprocessors.

[7] It is worth noting that *In re Varma* was an appeal from a Patent Board decision and applied the broadest reasonable interpretation standard to the interpretation of the claim language, which is not the applicable standard at the district court. *In re Varma*, 816 F.3d 1352, 1359 (Fed. Cir. 2016).

[8] As this Court concluded in *Freeny*, "when the claim refers to outputting 'the request authorization code' on a first signal, and outputting 'the request authorization code' on a second signal, that language means that any of the 'one or more request authorization codes' can be outputted on the first and second signals to satisfy the claim." *See Freeny*, 2019 WL 2078783, at *14-15.

Plaintiff Joe Andrew Salazar ("Plaintiff" or "Salazar") submits this supplemental claim construction brief to address arguments and case law relating to the claim term "a microprocessor for generating . . ., said microprocessor creating . . ., a plurality of parameter sets retrieved by said microprocessor . . ., said microprocessor generating . . ." raised by Defendants AT&T Mobility LLC, Sprint United Management Company, T-Mobile USA Inc., and Cellco Partnership, Inc. d/b/a Verizon Wireless, Inc. and Intervenors HTC Corp. and HTC America, Inc. (collectively, "Defendants and Intervenors") for the first time during the Court's claim construction hearing held on July 24, 2020.

During the claim construction hearing, Defendants and Intervenors argued that the Federal Circuit's decision in *Convolve, Inc. v. Compaq Computer Corp*., 812 F.3d 1313 (Fed. Cir. 2016)—a case that was not cited by any of the parties in their briefing—was inconsistent with Plaintiff's assertion that in an open-ended "comprising" claim, the rule of "a" meaning "one or more" applies, and the recited [a microprocessor] means "one or more" [microprocessors] and the subsequent use of the definite articles "the" or "said" in a claim to refer back to the same claim term does not change the general plural rule, but simply reinvokes that non-singular meaning. *See Freeny v. Fossil Grp., Inc*., 2019 WL 2078783, at *14 (E.D. Tex. May 10, 2019). As detailed below, the *Convolve* decision is entirely consistent with *Freeny*, and Defendants' and Intervenors' representation of *Convolve* is inaccurate.

A. *Convolve* is not inconsistent with *Freeny* and does not support Defendants' and Intervenors' argument that each "a microprocessor" in Salazar's claims must perform all the recited functions.

Defendants and Intervenors misrepresent the holding of *Convolve*. In *Convolve*, the Federal Circuit reviewed a district court decision granting summary judgment of non-infringement of various asserted claims. *Convolve*, 812 F.3d at 1320. The Federal Circuit held that the district

court erred by treating all of the asserted claims as having the same scope and not accounting for the distinct structure and language of each of the claims. *Id*. In reaching its decision, the Federal Circuit stated that "[t]his Court has 'repeatedly emphasized that an indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'" *Id*. at 1321. The Federal Circuit explained that the "exceptions to this rule are 'extremely limited: a patentee must evince a **clear intent** to limit 'a' or 'an' to one" and "absent a **clear intent** in the claims themselves, the specification, or the prosecution history, we interpret 'a processor' as 'one or more processors.'" *Id.* (emphasis added).

The Federal Circuit went on to distinguish different subsets of the asserted claims. The first subset of claims recites "an apparatus comprising [in the preamble][1] 'a processor' that executes certain process steps 'to generate a user interface,' 'to alter settings in the user interface,' and 'to output commands to the data storage device [the three steps in the second paragraph of the body of claim 9][2].'" *Id.* With respect to these claims, the Federal Circuit found no evidence clearly limiting "a processor" to a single processor. *Id*.

In contrast, the Federal Circuit distinguished another subset of claims[3] where the claims recite "'a processor,' but do so in the context of reciting the function of the 'user interface' [in the preamble of the claims]." *Id*. The Federal Circuit explained:

> Here, unlike claims 9 and 15, the **language and structure** of claim 1 **demonstrate a clear intent to tie** the processor that "output[s] commands to the data storage device" to the "user interface." Specifically, claim 1

[1] In the first subset, the Federal Circuit analyzed claims 9 and 15, which shared identical preambles: "Apparatus for controlling operation of a data storage device, the apparatus comprising:." *See* U.S. Patent No. 6,314,473 Ex Parte Reexamination Certificate. (**Ex. A**)
[2] *See, e.g.*, '473 Patent col. 2 line 7-22 (reexamined claim 9).
[3] The Federal Circuit grouped claims 1, 3, and 5 together and distinguished them from the previously addressed claims 9 and 15. The preamble of claim 1 (the claim addressed by the court as exemplary) recited "**User interface for operatively working with a processor** to affect operation of a data storage device, the user interface comprising:." (emphasis added).

> recites "a processor" in the preamble before recitation of "comprising," and the claim body uses the definite article "the" to refer to the "processor." This reference to "the processor," referring back to the "a processor" recited in preamble, supports a conclusion that the recited user interface is "operatively working with" the same processor to perform all of the recited steps. *Id.* (emphasis added).

Because the claimed "a processor" was specifically tied to the functions of the "user interface" in the preamble, the Federal Circuit held that "the claim language requires a processor"[4] to be tied to the user interface. *Id*. Accordingly, the *Convolve* decision found the *extremely limited* exception to the rule of tying "a processor" to a specific component only because that limitation was specifically recited in the preamble of the claim and was recited as specifically tied to the user interface (i.e., demonstrating a "clear intent" to tie the two together).

In the case of the Salazar patent, the preambles of the independent claims broadly recite "A communications, command, control and sensing system for communicating with a plurality of external devices comprising:" *See* '467 Patent claims 1 and 34. Similar to the first subset of claims addressed in *Convolve*, there is no evidence of a "clear intent" to limit the recited "a microprocessor" of the Salazar patent to a single microprocessor. Unlike the second subset of claims addressed in *Convolve* where "a processor" was expressly tied to the user interface in the preamble of the claims preceding "compromising:," the recited "a microprocessor" of Salazar's independent claims[5] does not appear in the preamble of the claims, comes after the term "comprising:," and is not tied to any specific component of the communications, command, control and sensing system.[6] Accordingly, consistent with the holdings of both *Convolve* and *Freeny*, any

[4] In this case, the accused Compaq computers contained a single processor associated with the user interface. *Convolve*, 812 F.3d at 1317.
[5] This term appears in the first paragraph of the body of the claims 1 and 34 of the '467 Patent.
[6] The "a microprocessor" in Salazar's claims, as was the case in the first subset of claims discussed above (claims 9 and 15), does not appear in the preamble and is not tied to any particular component.

one of the one or more microprocessors of the Salazar patent can be capable of performing any one of the recited functions in this claim term, and any individual one of the microprocessors (or all the microprocessors) need not be capable of performing all of the recited functions.

B. Defendants' and Intervenors' assertion that *Freeny* may have been decided differently if the Court had considered *Convolve* is without merit.

During the claim construction hearing, Defendants and Intervenors did not argue that *Freeny* does not support Plaintiff's position; rather, they argued that *Freeny* may have been decided differently had the Court considered *Convolve* in deciding *Freeny*. This argument is without merit. *Freeny* was decided in May 2019, and at that time Judge Payne (the author of *Freeny*) had previously cited the *Convolve* case in the claim construction context. *See, e.g.*, *Implicit, LLC v. NetScout Sys., Inc.*, No. 2:18-CV-53-JRG, 2019 WL 1614725, at *12 (E.D. Tex. Apr. 15, 2019) (citing *Convolve* and stating that "[a]n indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising'"). Accordingly, Judge Payne was aware of *Convolve*, and the lack of citation to it in *Freeny* does not support Defendants' and Intervenors' assertion that the two cases are inconsistent.

C. Conclusion

For the reasons provided above, Plaintiff respectfully requests that the Court construe the disputed claim term as having its plain and ordinary meaning.

Defendants AT&T Mobility LLC, Sprint/United Management Company, T-Mobile USA, Inc., and Cellco Partnership d/b/a Verizon Wireless (collectively, "Defendants") and HTC Corp. and HTC America, Inc. (collectively, "Intervenors"), respond to Plaintiff Joe Andrew Salazar's ("Salazar") supplemental claim construction brief (Dkt. No. 112).

Even though the parties have filed voluminous claim-construction briefing, and the Court has conducted a *Markman* hearing, Salazar continues to misstate Defendants' and Intervenors' position on the term "a microprocessor." Defendants and Intervenors have never argued that "a microprocessor" means a single microprocessor. *See, e.g.*, Ds' Br. (Dkt. No. 102) at 16 ("Here, it would allow 'a microprocessor' to mean 'one or more microprocessors.'"); Hr'g Tr. (Jul. 24, 2020) at 77:17-19 (Mr. Landis: "What we have here is a claim that claims a microprocessor. *No one is arguing to the Court that 'a' does not mean one or more*.") (emphasis added). That has never been in dispute. The dispute here is whether the claim language and the law require that at least one microprocessor (of the one or more microprocessors) must be configured to carry out all of the recited functions and to be coupled to the claimed "memory device" and "user interface." They clearly do.

I. Under *In re Varma*, the indefinite article "a" in "a microprocessor" does not negate the subsequent claim language.

As demonstrated in Defendants' and Intervenors' claim construction brief, the Federal Circuit held in *In re Varma* that the indefinite article "a" cannot serve to negate what is required by the language following it. *See In re Varma v. IBM Corp.*, 816 F.3d 1352, 1363 (Fed. Cir. 2016); Dkt No. 102 at 16-18. The Federal Circuit analogized this principle as follows: "For a dog owner to have 'a dog that rolls over and fetches sticks,' it does not suffice that he have two dogs, each able to perform just one of the tasks." *Id.* at 1363.

Here, the claim's first instance of "a microprocessor" uses the indefinite article "a," followed by three more instances that use the definite article "said." Salazar's argument seeks to negate the patentee's choice to claim "*said* microprocessor creating a plurality of reprogrammable communication . . .," "a plurality of parameter sets retrieved by *said* microprocessor . . .," and "*said* microprocessor generating a communication protocol . . . ." To analogize to the Federal Circuit's dog example,

"a dog"	=	"a microprocessor"
"rolls over and fetches"	=	(1) "generating a plurality of control signals"; (2) "creating a plurality of reprogrammable communication protocols"; (3) "retrieving a plurality of parameter sets"; and (4) "generating a communication protocol in response to said user selections."

In essence, Salazar asks the Court to replace the three instances of the definite article "said" with the indefinite article "a." That would be improper. *See, e.g., Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) ("[I]n accord with our settled practice we construe the claim as written, not as the patentees wish they had written it.").

II. *Convolve* supports and enhances the conclusion drawn from *Varma*.

Convolve teaches that, when an element is associated with one component through the use of "a" and is then referenced as being associated with another component through the use of the indefinite article "the" or "said," the claim requires the same element to be associated with both components. *See Convolve, Inc. v. Compaq Comput. Corp.*, 812 F.3d 1313, 1321 (Fed. Cir. 2016). *Convolve* involved U.S. Patent No. 6,314,473. The relevant portions of claim 1 of the *Convolve* patent are reproduced below:

> 1. User interface for operatively working with *a processor* to affect operation of a data storage device, the user interface comprising:
>
> * * * * *

> means for causing *the processor* to output commands to the data storage device to alter seek trajectory shape by shaping input signals to the data storage device to reduce selected unwanted frequencies from a plurality of frequencies in accordance with the altered settings in the user interface.

Ex. A, U.S. Patent No. 6,314,473 at 1:22-37 (emphasis added). Construing that claim, the Federal Circuit held that "[the] reference to 'the processor,' referring back to the 'a processor' recited in [the] preamble, supports a conclusion that the recited user interface is 'operatively working with' the same processor to perform all of the recited steps."). *Convolve, Inc.*, 812 F.3d at 1321.

In this case, Salazar argues that the term "a microprocessor" recited in claims 1 and 34 of his patent "is not tied to any specific component of the communications, command, control and sensing system." Dkt. No. 112 at 3. That is demonstrably false: the claims require coupling the same microprocessor to two different claimed components—the memory device and the user interface: "a memory device coupled to *said* microprocessor. . . ." and "a user interface coupled to *said* microprocessor" *See* '467 Patent at 26:1-12, 30:16-29 (emphasis added). The memory device and the microprocessor work together to perform operations on the "plurality of parameter sets"—"a memory device coupled to *said* microprocessor configured to store a plurality of parameter sets retrieved by *said* microprocessor. . . ." *See id.* at 26:1-6, 30:16-22 (emphasis added). The user interface and the microprocessor work together to receive signals corresponding to user selection and generating a communication protocol based on those selections—" a user interface coupled to said microprocessor for sending a plurality of signals corresponding to user selections to said microprocessor and displaying a plurality of menu selections available for the user's choice, said microprocessor generating a communication protocol in response to said user selections." *See id.* at 26:7-12, 30:23-29 (emphasis added).

The contrast with *Convolve* is clear because claims 1 and 34 of the Salazar Patent are markedly different from the claims for which the *Convolve* court found "no such evidence clearly

limiting 'a processor' to a singular processor" (i.e., claims 9 and 15 of the U.S. Patent No. 6,314,473). *See Convolve, Inc.*, 812 F.3d at 1321. For example, *Convolve* claim 9, which is reproduced in its entirety below, recites "a processor" without any subsequent reference back to it using the definite article "said:"

> 9. Apparatus for controlling operation of a data storage device, the apparatus comprising:
>
> a memory which stores computer-executable process steps; and
>
> *a processor* which executes the process steps so as (i) to generate a user interface, the user interface controlling one of a seek time of the data storage device and an acoustic noise level of the data storage device, (ii) to alter settings in the user interface for one of the seek time and the acoustic noise level of the data storage device in inverse relation, and (iii) to output commands to the data storage device causing the data storage device to alter seek trajectory shape by shaping input signals to the data storage device to reduce selected unwanted frequencies from a plurality of frequencies in accordance with the altered settings in the user interface.

Ex. A, U.S. Patent No. 6,314,473 at 2:7-22 (emphasis added).

The Federal Circuit arrived at its decision because *Convolve* claims 9 and 15 recited "a processor" and never constrained the microprocessor further. *See Convolve, Inc.*, 812 F.3d at 1321. That is not the case presented by the Salazar patent.

III. Conclusion

The Federal Circuit's decisions in both *In re Varma* and *Convolve* are in accord Defendants' and Intervenors' proposed construction of the term "a microprocessor for generating . . ., said microprocessor creating . . ., a plurality of parameter sets retrieved by said microprocessor . . ., said microprocessor generating . . ." Under both Federal Circuit decisions, every subsequent recitation of "said microprocessor" in claims 1 and 34 of the Salazar patent must refer to the same one or more microprocessors. Accordingly, Defendants and Intervenors respectfully request that the Court adopt their proposed construction for this term.

Defendants and Intervenors' supplemental claim construction position belies common sense and is not supported by law. A rule that would allow for several microprocessors and yet at the same time require each one of those microprocessors perform each and every function would, in fact, be the same as limiting the term "a microprocessor" to one microprocessor and the distinction would be without a difference. Thus, Defendants and Intervenor's claim that they "have never argued that 'a microprocessor' means a single microprocessor" is false. Their argument is indeed that a subsequent claim element (in the body of the claim) that has an antecedent reference (here, "the microprocessor") to a separate element (in the body of the claim) preceded by indefinite article "a" (here, "a microprocessor") negates the general rule that 'a' means one or more. Neither *Varma* nor *Convolve* support Defendants' and Intervenors' argument.

The Federal Circuit in *Varma*[1] simply interpreted the construction of a discrete clause in the body of a claim ("a statistical analysis request corresponding to two or more selected investments") based on the plain language of the claim and the specification. The Court explained the Board's error was "plain from the claim phrase at issue" and "the language on its face" excluded the Board's interpretation. *In re Varma*, 816 F.3d 1352, 1362 (Fed. Cir. 2016). *Varma*'s "dog" analogy was used to demonstrate the simple logic in the Court's interpretation of the recited claim language and does not represent a legal principle that can be applied to the facts at issue here. Defendants are trying to narrow the interpretation of subsequent claim elements/clauses by narrowing the construction of a prior claim element that includes the indefinite article "a." This is inconsistent with well-established law and was not addressed nor supported by *Varma*. *See, e.g.*,

[1] In *Varma*, the Federal Circuit rejected a Patent Board interpretation of the discrete claim limitation "a statistical analysis request corresponding to two or more selected investments," where the Board had interpreted the claim to allow for two separate requests where each request had just one selected investment." *In re Varma*, 816 F.3d at 1362-63.

Convolve[2]

This Court's *Freeny* decision squarely addresses this precise issue and has been endorsed by other courts in this district. *See, e.g., Freeny v. Fossil Grp., Inc*., 2019 WL 2078783, at *14 (E.D. Tex. May 10, 2019); *Novartis Vaccines & Diagnostics, Inc. v. Wyeth & Wyeth Pharm., Inc.*, 2011 WL 3880552, at *2-3 (E.D. Tex. Sept. 2, 2011); *Automated Bus. Companies v. ENC Tech. Corp*. 2009 WL 3674507, at *11-12 (S.D. Tex. Oct. 30, 2009). Accordingly, Defendants' and Intervenors' proposed construction should be rejected.

[2] As detailed in Plaintiff's supplemental claim construction brief, *Convolve* makes clear that "absent a **clear intent** in the claims themselves, the specification, or the prosecution history, we interpret 'a processor' as 'one or more processors.'" *Convolve, Inc. v. Compaq Computer Corp*., 812 F.3d 1313, 1320-21 (Fed. Cir. 2016) (emphasis added). Defendants and Intervenors do not challenge this principle.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

JOE ANDREW SALAZAR,

Plaintiff,

v.

AT&T MOBILITY LLC, SPRINT UNITED MANAGEMENT COMPANY, T-MOBILE USA INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, INC.,

Defendants,

HTC CORP. and HTC AMERICA, INC.,

Intervenors.

CIVIL ACTION NO. 2:20-cv-00004-JRG

CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER

Before the Court is the opening claim construction brief of Joe Andrew Salazar ("Plaintiff") (Dkt. No. 97, filed on June 10, 2020),[1] the response of AT&T Mobility LLC; Sprint/United Management Company; T-Mobile USA, Inc.; Cellco Partnership d/b/a Verizon Wireless; HTC Corporation; and HTC America, Inc. (collectively "Defendants") (Dkt. No. 102, filed on June 24, 2020), and Plaintiff's reply (Dkt. No. 103, filed on July 1, 2020) and supplemental brief (Dkt. No. 112, filed on July 30, 2020). The Court held a hearing on the issues of claim construction and claim definiteness on July 24, 2020. Having considered the arguments and evidence presented by the parties at the hearing and in their briefing, the Court issues this Order.

[1] Citations to the parties' filings are to the filing's number in the docket (Dkt. No.) and pin cites are to the page numbers assigned through ECF.

While the communication-signal-defining command code sets are recited distinctly from "a desired command code set," there is nothing in a plain reading of the claim language the precludes the desired set from being one of the communication-signal-defining command code sets. Indeed, and as discussed above, the '467 Patent teaches the command sets are recreated from parameters to reduce the amount of required memory—it takes less memory to store the parameters used to recreate the command sets than to store the command sets. In this light, one would expect that that the "desired command code set" that is recreated from the stored parameters may be one of the command code sets that defines the communication signals.

Accordingly, the Court holds that Defendants have failed to prove any claim is indefinite for including "a desired command code set" and further rejects Defendants' proposed construction. The Court therefore determines that this term has its plain and ordinary meaning without the need for further construction.

G. "a microprocessor for generating …, said microprocessor creating …, a plurality of parameter sets retrieved by said microprocessor …, said microprocessor generating …"

Disputed Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"a microprocessor for generating …, said microprocessor creating …, a plurality of parameter sets retrieved by said microprocessor …, said microprocessor generating …" • '467 Patent Claims 1, 34	to the extent not covered by this Court's construction in the HTC Case, plain and ordinary meaning	one or more microprocessors, each of which must perform the generating, creating, retrieving, and generating functions

The Parties' Positions

Plaintiff submits: This term should be construed to have its plain and ordinary meaning, subject to the Court's previous constructions in the HTC Case (citing *HTC CC Order* at 15–30).

Defendants' proposed construction is improperly limiting in that it requires that the microprocessor "must perform" the functions. As the Court explained in the HTC Case, the claims are directed to capability, and do not require actual performance of the functions. Dkt. No. 97 at 21–23.

In addition to the claims themselves, Plaintiff cites the following **intrinsic evidence** to support its position: '467 Patent col.7 ll.37–39, col.8 ll.22–30, col.8 ll.60–65, col.16 ll.40–45; '467 Patent File Wrapper October 31, 1997 Amendment at 1–2 (Plaintiff's Ex. B, Dkt. No. 97-3 at 2–3), February 17, 1998 Notice of Allowability at 2 (Plaintiff's Ex. C, Dkt. No. 97-4 at 3).

Defendants respond: The claims are directed to capability, and do not require actual performance, and the claims do not exclude systems of multiple microprocessors. The claims, however, require a (singular) microprocessor that is capable of performing all the recited microprocessor functions. In other words, the claims require that the same microprocessor that is capable of the recited "generating" is also capable of the later-recited "creating," "retrieving," and "generating." This does not encompass a system in which no single microprocessor is capable of performing all the recited functions, even if the system includes multiple microprocessors that in the aggregate are capable of performing all the recited functions. Dkt. No. 102 at 21–23.

Plaintiff replies: The claims are open-ended "comprising" claims and "a microprocessor" means "one or more microprocessors." This means "that any one of the one or more microprocessors can be capable of performing any one of the recited functions in this claim term, and any individual one of the microprocessors (or all the microprocessors) need not be capable of performing all of the recited functions." Dkt. No. 103 at 9–10.

Analysis

The issue in dispute distills to whether the claims require one microprocessor that is capable of performing the recited "generating," "creating," "retrieving," and "generating" functions. They

do. The plain reading of the claims is that the same microprocessor is capable of performing all the recited functions attributed to "said microprocessor."

The claims provide significant context to inform the understanding of the "microprocessor" phrases. For example, Claim 1 provides:

> **1**. A communications, command, control and sensing system for communicating with a plurality of external devices comprising:
> ***a microprocessor for generating*** a plurality of control signals used to operate said system, ***said microprocessor creating*** a plurality of reprogrammable communication protocols, for transmission to said external devices wherein each communication protocol includes a command code set that defines the signals that are employed to communicate with each one of said external devices;
> ***a memory device coupled to said microprocessor*** configured to store a plurality of ***parameter sets retrieved by said microprocessor*** so as to recreate a desired command code set, such that the memory space required to store said parameters is smaller than the memory space required to store said command code sets;
> ***a user interface coupled to said microprocessor*** for ***sending*** a plurality of signals corresponding to user selections ***to said microprocessor*** and displaying a plurality of menu selections available for the user's choice, ***said microprocessor generating*** a communication protocol in response to said user selections; and
> an ***infra-red frequency transceiver coupled to said microprocessor*** for transmitting to said external devices and receiving from said external devices, infra-red frequency signals in accordance with said communications protocols.

'467 Patent col.25 l.57 – col.26 l.18 (emphasis added). Thus, the claimed system includes "a microprocessor" having various structural characteristics defined by its functions and by its relationships to other structural limitations. Claim 34 is similar in this respect. Plaintiff contends that "a microprocessor" of the claims, because it means "one or more microprocessors," encompasses a plurality of microprocessors that in the aggregate satisfy the functional (and presumably relational) limitations. For example, Plaintiff contends that Claim 1 encompasses a multi-microprocessor system in which no single microprocessor is configured "for generating" control signals, for "creating" reprogrammable communication protocols, for "retriev[ing]"

parameter sets, and for "generating" a communication protocol in response to a user selection. Plaintiff's argument also necessarily implies that no single microprocessor is "coupled to" a memory device, a user interface, and an infra-red frequency transceiver. Rather, Plaintiff contends that each recited microprocessor limitation may be satisfied by a different microprocessor.

The Court agrees with Defendants that under Federal Circuit precedent, at least one microprocessor must satisfy all the functional (and relational) limitations recited for "said microprocessor." The parties dispute the import of two Federal Circuit opinions: *Convolve, Inc. v. Compaq Computer Corp.*, 812 F.3d 1313 (Fed. Cir. 2016) and *In re Varma*, 816 F.3d 1352 (Fed. Cir. 2016). Both opinions involve interpretation of a claim element introduced with the indefinite article "a" and further defined by claim-recited characteristics of the element. Both opinions hold that claim language alone may require a singular element to have all recited characteristics. *Convolve* states that starting position of such an interpretation:

> This court has repeatedly emphasized that an indefinite article "a" or "an" in patent parlance carries the meaning of "one or more" in open-ended claims containing the transitional phrase "comprising." … The exceptions to this rule are extremely limited: a patentee must evince a clear intent to limit "a" or "an" to "one."

Convolve, 812 F.3d at 1321 (quotation and modification marks omitted). In the context of interpreting "a processor" defined simply by enumerated functions that it executes, *Convolve* found no intent to limit the claims (claim 9 and 15) to one processor performing all the functions. *Id*. In the context of interpreting "[u]ser interface for . . . working with a processor . . . comprising" in other claims (claims 1, 3, and 5), however, *Convolve* found an intent to limit "a processor" to a singular processor having all the claim-recited characteristics:

> Here, unlike claims 9 and 15, the language and structure of claim 1 demonstrate a clear intent to tie the processor that "output[s] commands to the data storage device" to the "user interface." Specifically, claim 1 recites "a processor" in the preamble before recitation of "comprising," and the claim body uses the definite article "the" to refer to the "processor." This reference to "the processor," referring back to the "a processor" recited in preamble, supports a conclusion that the recited user

> interface is "operatively working with" the same processor to perform all of the recited steps. In other words, the claim language requires a processor associated with the user interface to issue the shaped commands of the claims. Given this claim language, which contrasts with the claims described above that allow for multiple processors, we conclude that claims 1, 3, and 5 require the user interface to work with a single processor in performing all of the claim steps.

Id. *Varma*, in the context of interpreting "a statistical analysis request corresponding to two or more selected investments," similarly found that a single "statistical analysis request" must correspond to two or more selected investments:

> But while "a" sometimes is non-restrictive as to number, permitting the presence of more than one of the objects following that indefinite article, context matters even as to whether the word has that meaning.. . . And here the question is not whether there can be more than one request in a claim-covered system: there can. Rather, the question is whether "a" can serve to negate what is required by the language following "a": a "request" (a singular term) that "correspond[s]" to "two or more selected investments." It cannot. For a dog owner to have "a dog that rolls over and fetches sticks," it does not suffice that he have two dogs, each able to perform just one of the tasks. In the present case, no matter how many requests there may be, no matter the variety of the requests the system may receive, the system must be adapted to receive a request that itself corresponds to at least two investments.

Varma, 816 F.3d at 1362–63. Thus, while a claim element introduced by an indefinite article and further defined by claim-recited characteristics may not be limited to one instance of the element, the way in which the characteristics are recited may dictate that at least one instance of the element must have all the claim-recited characteristics.

In the claims at issue here, one "microprocessor" is set forth in the claims as including a variety of characteristics. The claim-recited characteristics are not just a simple listing of functions to be performed by "a microprocessor." Rather, the characteristics are repeatedly introduced using "said microprocessor." Those characteristics include the functions that "said microprocessor" is necessarily configured to perform as well as the structural relationship between "said microprocessor" and other structural elements. In this respect, the claims here are distinguishable from claims 9 and 15 addressed in *Convolve* and are analogous to claims 1, 3, and 5 addressed in

Convolve and the claim addressed in *Varma*. Notably, the repeated use of "said microprocessor" to enumerate the functional and relational characteristics of "a microprocessor" suggests that the same microprocessor that is "coupled to" various structural elements is the one that is configured to perform the various recited microprocessor functions. In other words, one microprocessor must have all the recited characteristics.

Accordingly, the Court construes this phrase as follows:

- "a microprocessor for generating …, said microprocessor creating …, a plurality of parameter sets retrieved by said microprocessor …, said microprocessor generating …" means "one or more microprocessors, at least one of which is configured to perform the generating, creating, retrieving, and generating functions."

H. "said communications protocols" and "said microprocessor generating a communication protocol in response to said user selections"

Disputed Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"said microprocessor generating a communication protocol in response to said user selections"[4] • '467 Patent Claims 1, 34	to the extent not covered by this Court's construction in the HTC Case, plain and ordinary meaning	said microprocessor generating a communication protocol different from the reprogrammable communication protocols alternatively, • indefinite
"said communications protocols" • '467 Patent Claims 1, 34	plain and ordinary meaning	indefinite

[4] The parties identify the term with the singular "selection," the claims recite "selections." Dkt. No. 108-1 at 53–56.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

JOE ANDREW SALAZAR, *Plaintiff*, v. AT&T MOBILITY LLC, SPRINT UNITED MANAGEMENT COMPANY, T-MOBILE USA INC, CELLCO PARTNERSHIP, INC. D/B/A VERIZON WIRELESS, INC., *Defendants*.	§ § § § § § § § § § §	**CIVIL ACTION NO. 2:20-CV-00004-JRG**

VERDICT FORM

In answering the following questions and completing this Verdict Form, you are to follow all the instructions I have given you in the Court's Final Jury Instructions. Your answers to each question must be unanimous. Some of the questions contain legal terms that are defined and explained in detail in the Final Jury Instructions. You should refer to and consider the Final Jury Instructions as you answer the questions in this Verdict Form.

As used herein, the following terms have the following meanings:

- "Salazar" or "Plaintiff" means Joe Andrew Salazar.
- "AT&T" refers to AT&T Mobility LLC.
- "Sprint" refers to Sprint United Management Company.
- "T-Mobile" refers to T-Mobile USA, Inc.
- "Verizon" refers to Cellco Partnership d/b/a Verizon Wireless, Inc.
- "Defendants" collectively refers to AT&T Mobility LLC, Sprint United Management Company, T-Mobile USA Inc., Cellco Partnership, Inc. D/B/A Verizon Wireless, Inc.
- The "'467 Patent" refers to U.S. Patent No. 5,802,467.
- The "Asserted Claims" collectively refers to Claims 1–7, 29–30, and 34 of the '467 Patent.

IT IS VERY IMPORTANT THAT YOU FOLLOW THE INSTRUCTIONS PROVIDED IN THIS VERDICT FORM

READ THEM CAREFULLY AND ENSURE THAT YOUR VERDICT COMPLIES WITH THEM

QUESTION NO. 1:

Did Salazar prove by a preponderance of the evidence that Defendants infringed **ANY** of the Asserted Claims?

YES _____

NO X

QUESTION NO. 2:

Did Defendants prove by clear and convincing evidence that any of the following Asserted Claims are invalid?

Check "Yes" or "No" for each Asserted Claim listed below:

Claim 1 of the '467 Patent	Yes: _____	No: X
Claim 2 of the '467 Patent	Yes: _____	No: X
Claim 3 of the '467 Patent	Yes: _____	No: X
Claim 4 of the '467 Patent	Yes: _____	No: X
Claim 5 of the '467 Patent	Yes: _____	No: X
Claim 6 of the '467 Patent	Yes: _____	No: X
Claim 7 of the '467 Patent	Yes: _____	No: X
Claim 29 of the '467 Patent	Yes: _____	No: X
Claim 30 of the '467 Patent	Yes: _____	No: X
Claim 34 of the '467 Patent	Yes: _____	No: X

If you answered "NO" to Question No. 1 OR "YES" to *ALL* Asserted Claims in Question No. 2, then DO NOT answer Question No. 3.

Answer Question No. 3 ONLY as to any Asserted Claim that you have found BOTH to be infringed and not invalid.

QUESTION NO. 3:

What sum of money, if paid now in cash, has Salazar proven by a preponderance of the evidence would compensate Salazar for his damages resulting from infringement through September 28, 2015?

Answer, separately for each Defendant, in United States Dollars and Cents, if any:

AT&T $ _____

Sprint $ _____

T-Mobile $ _____

Verizon $ _____

FINAL PAGE OF JURY VERDICT FORM

You have now reached the end of the Verdict Form and should review it to ensure it accurately reflects your unanimous determinations. The Jury Foreperson should then sign and date the Verdict Form in the spaces below. Once this is done, notify the Court Security Officer that you have reached a verdict. The Jury Foreperson should keep the Verdict Form and bring it when the jury is brought back into the courtroom.

Signed this 9 day of August, 2021.

_____
JURY FOREPERSON