

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Maged F. Barsoum et al.
U.S. Patent No.: 10,693,700 Attorney Docket No.: 19688-0196IP1
Issue Date: June 23, 2020
Appl. Serial No.: 16/726,037
Filing Date: December 23, 2019
Title: RECEIVERS INCORPORATING NON-UNIFORM
MULTIDIMENSIONAL CONSTELLATIONS AND CODE RATE
PAIRS

Mail Stop Patent Board

Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

**PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT
NO. 10,693,700 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42**

TABLE OF CONTENTS

I. REQUIREMENTS FOR IPR UNDER 37 C.F.R. § 42.104.....1

 A. Standing1

 B. Challenge and Relief Requested.....1

II. OVERVIEW OF THE '700 PATENT4

 A. Brief Description of the '700 Patent.....4

 B. Summary of the Prosecution History of the '700 Patent.....8

 C. Level of Ordinary Skill in the Art.....9

III. CLAIM CONSTRUCTION9

IV. APPLICATION OF PRIOR ART TO THE CHALLENGED CLAIMS.....10

 A. Ground 1A: Eroz in view of DVB-T render claims 1, 8, 10, 11, 18, 20,
 21, 28, and 30 obvious10

 1. Overview of Eroz10

 2. Overview of DVB-T.....13

 3. Combination of Eroz and DVB-T19

 4. Manner in which the EDC renders the Challenged Claims obvious
 23

 B. Ground 1B: EDC and DeGaudenzi render claims 1, 6, 8, 10-11, 16, 18,
 20-21, 26, 28, and 30 obvious.....49

1.	Overview of DeGaudenzi.....	49
2.	Combination of EDC+DeGaudenzi	57
3.	Manner in which the EDC+DeGaudenzi render claims 1, 6, 8, 10- 11, 16, 18, 20-21, 26, 28, and 30 obvious.....	59
C.	Ground 2A: EDC and Sommer render claims 4, 14, and 24 obvious	66
1.	Overview of Sommer	66
2.	Combination of EDC+Sommer.....	69
3.	Manner in which the EDC+Sommer renders the Claims 4, 14, and 24 obvious	72
D.	Ground 3A: EDC and DVB-S2 render claims 7, 17, and 27 obvious....	75
1.	Overview of DVB-S2.....	75
2.	Combination of EDC+DVB-S2	77
3.	Manner in which the EDC+DVB-S2 renders the Claims 7, 17, and 27 obvious	80
E.	Ground 4A: EDC and DVB-TS, render claims 9, 19, and 29 obvious ..	85
1.	Overview of DVB-TS	85
2.	Combination of EDC+DVB-TS	86
3.	Manner in which the EDC+DVB-TS renders the Claims 9, 19, and 29 obvious	87
F.	Ground 2B-4B:.....	91

V. THE *ADVANCED BIONICS* TEST FAVORS INSTITUTION—§ 325(D).92

VI. DISCRETIONARY DENIAL IS NOT MERITED IN VIEW OF
PETITIONER’S *SOTERA* STIPULATION93

VII. CONCLUSION.....94

VIII. PAYMENT OF FEES – 37 C.F.R. § 42.103.....94

IX. MANDATORY NOTICES UNDER 37 C.F.R § 42.8(a)(1).....94

 A. Real Parties-In-Interest Under 37 C.F.R. § 42.8(b)(1)94

 B. Related Matters Under 37 C.F.R. § 42.8(b)(2).....94

 C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3).....95

 D. Service Information95

EXHIBITS

- LGE1001 U.S. Patent No. 10,693,700
- LGE1002 Prosecution History for U.S. Patent No. 10,693,700
- LGE1003 Expert Declaration of Dr. Bertrand Hochwald
- LGE1004 U.S. Patent Pub. No. 2004/0054960 to Eroz et al. (“Eroz”)
- LGE1005 ETSI EN 300 744 V1.2.1, *Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for digital terrestrial television*, July 1999 (“DVB-T”)
- LGE1006 D. Sommer and G.P. Fettweis, *Signal Shaping by Non-Uniform QAM for AWGN Channels and Applications Using Turbo Coding*, January 2000 (“Sommer”)
- LGE1007 [RESERVED]
- LGE1008 Ulrich Reimers et al., *DVB The Family of International Standards for Digital Video Broadcasting*, Second Edition, 2005 (“Ulrich”)
- LGE1009 ETSI EN 302 307 V1.1.2, *Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications*, June, 2006 (“DVB-S2”)
- LGE1010 U.S. Provisional application No. 60/933,319 (“319 Provisional”)
- LGE1011 Declaration of June Munford
- LGE1012 Stipulation by Petitioner, LGE, *Constellation Designs, LLC v. LG Electronics, Inc. et al*, Case No. 2:21-cv-00448 (E.D. Tex.)

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.