UNITED STA	TES PATENT AND TRADEMARK OFF	FICE
BEFORE TH	E PATENT TRIAL AND APPEAL BOA	.RD
	ARRIS GROUP, INC. Petitioner	
	V.	
	TQ DELTA, LLC Patent Owner	
	Case:	

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,238,412

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
United States Patent and Trademark Office
PO Box 1450
Alexandria, Virginia 22313–1450
Submitted Electronically via the Patent Review Processing System



TABLE OF CONTENTS

I.	IN	NTRODUCTION	14
II.	M	IANDATORY NOTICES – 37 C.F.R. § 42.8	2
A		Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)	2
В		Related Matters Under 37 C.F.R. § 42.8(b)(2)	2
C	•	Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)	3
D	٠.	Service Information Under 37 C.F.R. § 42.8(b)(4)	3
III. PAYMENT OF FEES – 37 C.F.R. § 42.10		PAYMENT OF FEES – 37 C.F.R. § 42.103	4
IV.		REQUIREMENTS FOR IPR – 37 C.F.R. § 42.104	4
A		Grounds for Standing Under 37 C.F.R. § 42.104(a)	4
B R		Identification of Challenge Under 37 C.F.R. § 42.104(b) and Relief uested	4
C	•	Claim Construction Under 37 C.F.R. §§ 42.100(b), 42.104(b)(3)	5
D	١.	Supporting Evidence under 37 C.F.R. § 42.104(b)(5)	6
V.	S	UMMARY AND TECHNICAL BACKGROUND of the '412 Patent	7
A		The Alleged Invention of the '412 Patent	7
В	•	Level of Ordinary Skill in the Art	8
VI.		DETAILED EXPLANATION UNDER 37 C.F.R. § 42.104(b)	8
A	•	Overview of Publications Being Used for Grounds of Rejection	8
	1.	Technical Overview of US Patent 4,679,227	8
	2.	Technical Overview of US Patent 4,438,511	10
	3.	Technical Overview of US Patent 5,838,268	11
	4.	Technical Overview of US Patent 6,219,378	12
	5.	Technical Overview of TR-024 Reference	13
	vei	Claims 1, 3, 5, 7, 9, 11, and 16-21 are obvious under 35 U.S.C. § 103(a) the combination of US Patent 4,679,227, US Patent 4,438,511, and US 8,268	15
,	1.		
		a. Preamble: A transceiver capable of transmitting test information over communication channel using multicarrier modulation comprising:	



	b.	Limitation [A]: a transmitter portion capable of transmitting a message 18
	c. vari	Limitation [B]: wherein the message comprises one or more data iables that represent the test information
	syn	Limitation [C]: wherein bits in the message are modulated onto DMT nbols using Quadrature Amplitude Modulation (QAM) with more than 1 per subchannel and
	data	Limitation [D]: wherein at least one data variable of the one or more a variables comprises an array representing power level per subchannel ormation
2.		Claim 324
	a.	Preamble: A transceiver capable of receiving test information over a numerication channel using multicarrier modulation comprising:24
	b.	Limitation [A]: a receiver portion capable of receiving a message24
	c. vari	Limitation [B]: wherein the message comprises one or more data iables that represent the test information25
		Limitation [C]: wherein bits in the message are modulated onto DMT abols using Quadrature Amplitude Modulation (QAM) with more than 1 per subchannel and
	data	Limitation [D]: wherein at least one data variable of the one or more a variables comprises an array representing power level per subchannel ormation
3.		Claim 525
		Preamble: In a transceiver capable of transmitting test information over ommunication channel using multicarrier modulation, a method apprising:
	b.	Limitation [A]: transmitting a message25
	c.	Limitation [B]: wherein the message comprises one or more data iables that represent the test information
		Limitation [C]: wherein bits in the message are modulated onto DMT abols using Quadrature Amplitude Modulation (QAM) with more than 1 per subchannel and
		Limitation [D]: wherein at least one data variable of the one or more a variables comprises an array representing power level per subchannel ormation



4.	(Claim 7	.26
		Preamble: In a transceiver capable of receiving test information over munication channel using multicarrier modulation, a method	
	con	nprising:	.26
	b.	Limitation [A]: receiving a message	.26
	c. var	Limitation [B]: wherein the message comprises one or more data riables that represent the test information	.26
	•	Limitation [C]: wherein bits in the message are modulated onto DMT nbols using Quadrature Amplitude Modulation (QAM) with more than per subchannel and	1
		Limitation [D]: wherein at least one data variable of the one or more a variables comprises an array representing power level per subchanne ormation.	
5.	(Claim 9	.27
		Preamble: A non-transitory computer-readable information storage dia having stored thereon instructions that, if executed, cause a nsceiver to perform a method comprising:	.27
	b.	Limitation [A]: transmitting a message	.27
	c. var	Limitation [B]: wherein the message comprises one or more data riables that represent the test information	.27
	•	nbols using Quadrature Amplitude Modulation (QAM) with more than	
		Limitation [D]: wherein at least one data variable of the one or more a variables comprises an array representing power level per subchanne ormation.	
6.	(Claim 11	.28
		Preamble: A non-transitory computer-readable information storage dia having stored thereon instructions that, if executed, cause a nsceiver to perform a method comprising:	.28
	b.	Limitation [A]: receiving a message	.28
	c.	Limitation [B]: wherein the message comprises one or more data	28



	syn	Limitation [C]: wherein bits in the message are modulated onto DMT nbols using Quadrature Amplitude Modulation (QAM) with more than 1 per subchannel and
	dat	Limitation [D]: wherein at least one data variable of the one or more a variables comprises an array representing power level per subchannel ormation.
7.	(Claim 1629
	con	Preamble: A communications system for DSL service comprising a set DSL transceiver capable of transmitting test information over a munication channel using multicarrier modulation and a second DSL asceiver capable of receiving the test information over the munication channel using multicarrier modulation comprising:29
	b.	Limitation [A]: a transmitter portion capable of transmitting a message 30
	c. var	Limitation [B]: wherein the message comprises one or more data iables that represent the test information
	syn	Limitation [C]: wherein bits in the message are modulated onto DMT nbols using Quadrature Amplitude Modulation (QAM) with more than 1 per subchannel and
	dat	Limitation [D]: wherein at least one data variable of the one or more a variables comprises an array representing frequency domain received e channel noise information; and
	f.	Limitation [E]: a receiver portion capable of receiving the message33
	g. var	Limitation [F]: wherein the message comprises the one or more data iables that represent the test information
	DM	Limitation [G]: wherein the bits in the message were modulated onto IT symbols using Quadrature Amplitude Modulation (QAM) with more n 1 bit per subchannel and
	idle	Limitation [H]: wherein at least one data variable of the one or more a variables comprises the array representing frequency domain received e channel noise information
8.	(Claim 1734
	con	Preamble: In a communications system for DSL service with a first L transceiver capable of transmitting test information over a mmunication channel using multicarrier modulation and a second DSL asceiver capable of receiving the test information over the



DOCKET

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.

