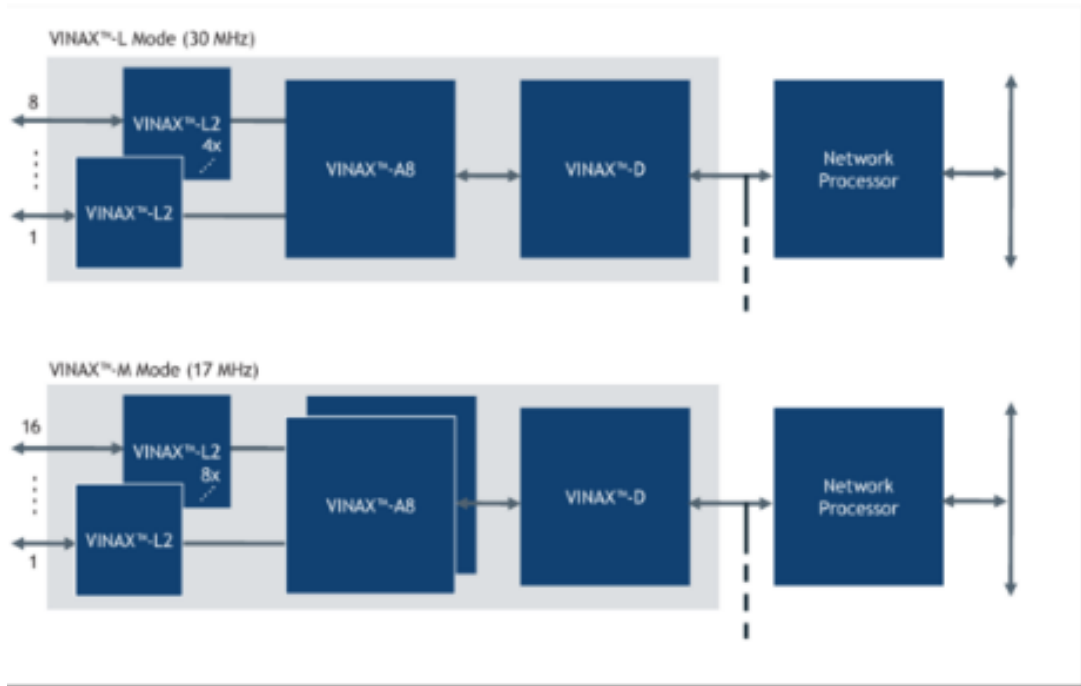


# DSL And G.fast Chips: Market Shares, Strategies, and Forecasts, Worldwide, 2014-2020

## Table of Contents

### DSL and G.Fast Chips Executive Summary

The study is designed to give a comprehensive overview of the DSL and G.Fast chip market segment. Research represents a selection from the mountains of data available of the most relevant and cogent market materials, with selections made by the most senior analysts. Commentary on every aspect of the market from independent analysts creates an independent perspective in the evaluation of the market. In this manner the study presents a comprehensive overview of what is going on in this market, assisting managers with designing market strategies likely to succeed.



Copyright 2014, WinterGreen Research, Inc.

TOC-1

[www.wintergreenresearch.com](http://www.wintergreenresearch.com)

[www.wintergreenresearch.com/blog](http://www.wintergreenresearch.com/blog)

Tel 781-863-5078

email: [info@wintergreenresearch.com](mailto:info@wintergreenresearch.com)

Lexington, Massachusetts

<b>DSL AND G.FAST CHIPS EXECUTIVE SUMMARY</b>	<b>22</b>
End To End Broadband Networks	22
DSL Set To Give Way To G.Fast	25
Vendor DSL and G.Fast Positioning	27
Data And Video Traffic Surpass Voice Traffic	29
DSL Chip Market Shares	30
DSL Chip Market Forecasts	32
<b>1. DSL CHIP MARKET DYNAMICS AND MARKET DESCRIPTION</b>	<b>34</b>
1.1 Digital Subscriber Line (DSL) Chips	34
1.1.1 Demand for Broadband Services and Market Opportunities for Service Providers	35
1.1.2 High-Performance Communications Processing	35
1.1.3 Key Benefits of DSL Technology	37
1.1.4 Improving Time-To-Market With Programmable Systems-Level Products	37
1.1.5 DSL Provides Cost-Effective, High-Performance Transmission Over Existing Copper Lines	38
1.1.6 End-to-End DSL Products	38
1.2 Stability Of Global Credit And Financial Markets	40
1.3 DSL Design Wins	41
1.3.1 Semiconductor Components	41
1.4 Communications Industry	42
1.4.1 Carrier Networking	44
1.4.2 Enterprise Networking	46
1.4.3 Cloud Computing	48

1.4.4	Increasing Demands for "Next-Generation Networking" Integrated Circuits	48
1.5	Communications Strategy	50
1.6	Internet And Wireless Dominate Communications Technology	51
1.6.1	Optical Networks	52
1.6.2	Data And Video Traffic Being Added In Abundance To Voice Traffic	53
1.6.3	Semiconductor Companies Design DSL	53
1.7	Storage Industry	54
1.8	Mixed Signal Integrated Circuit Market	56
1.8.1	Network Access Last Mile Of Telecommunications Network	56
1.8.2	Metropolitan Area Networks	57
1.8.3	Internet	58
1.9	Signal Processing	58
1.10	Product Positioning	60
	<b>2. DSL AND G.FAST CHIPS MARKET SHARES AND MARKET FORECASTS</b>	<b>62</b>
2.1	End To End Broadband Networks	62
2.1.1	DSL Set To Give Way To G.Fast	65
2.1.2	Vendor DSL and G.Fast Positioning	67
2.1.3	Data And Video Traffic Surpass Voice Traffic	69
2.2	DSL Chip Market Shares	70
2.2.1	Sckipio G.Fast Gigabit Ultra Broadband	73
2.2.2	Broadcom	73
2.2.3	Ikanos	74
2.2.4	Ikanos Shipments	74
2.2.5	Ikanos VDSL	75

2.2.6	Lantiq Broadband Solutions	75
2.2.7	MediaTek / Ralink / Trendchip	75
2.3	DSL Chip Market Forecasts	76
2.3.1	G.fast and Digital Subscriber Line (DSL) Market Forecasts	79
2.3.2	G.fast Chip Market Shipments Forecasts	83
2.3.1	G.fast Modem Chipsets	87
2.3.2	Broadband DSL and G.fast Market Forecasts, Low End, Mid Range, and High End Units and Dollars	88
2.3.3	Broadband DSL and G.fast Chip Market Forecasts, Low End, Mid Range, and High End Units and Dollars	90
2.3.4	DSL and G.fast High-End Market Forecasts	91
2.3.5	DSL and G.fast Chip Mid-Range Market Shipments Forecasts	93
2.3.6	DSL and G.fast Low-End Market Forecasts	95
2.3.7	Broadband DSL and G.fast Chip Market Forecasts, Low End, Mid-Range, and High End	97
2.3.8	Broadband Subscriber Analysis	101
2.3.9	DSL Subscriber Forecasts	105
2.3.1	Digital Subscriber Line (DSL) Subscriber Markets	107
2.3.2	U.S. Broadband Connections	110
2.3.3	US's Providers AT&T and Verizon Begin Retracting From The DSL Market	110
2.3.4	Impact of Fiber on DSL	112
2.3.5	Ethernet	113
2.4	Research and Development	116
2.5	G.fast and DSL Chip Applications	118

2.6	G.Fast / DSL Chip Prices	120
2.7	DSL Chip Regional Market	128
2.7.1	DSL Regional Market Analysis	130
2.7.2	xDSL and G.fast Connections	131
2.7.3	Video Industry Is Undergoing Fundamental Changes	132
2.7.4	DSL Component Shipments by Vendor by Region	134
2.7.5	China	135
<b>3.</b>	<b>DSL AND G.FAST CHIPS: PRODUCT DESCRIPTION</b>	<b>136</b>
3.1	Skipio G.Fast	136
3.1.1	G.fast Chipsets Skipio Creates New Era of Affordable Gigabit Ultra Broadband	136
3.1.2	FTTH vs. G.Fast Costs for Services Providers	136
3.1.3	Skipio G.fast Devices	138
3.1.4	Lantiq Residential Gateway Reference Design Based on Skipio G.fast Solution	138
3.2	Broadcom	139
3.2.1	Broadcom BCM6519 Multi-DSL Transceiver	141
3.2.2	Broadcom BCM6529 Low Power Dual-Channel Analog Front End Device	142
3.2.3	Broadcom BCM65300 VDSL2 G.Vector Central Office SoC	143
3.2.4	Broadcom BCM65x00 Family Central Office High Density Multi-DSL Chipset	144
3.2.5	Broadcom BCM6515 High-Performance VoIP Digital Signal Processor	147
3.2.6	Broadcom xDSL CPE Solutions	148
3.2.7	BCM63168 xDSL Integrated Access Device SoC	152

3.2.8	BCM6338 ADSL2+ Router Solution	153
3.2.9	BCM6348 Single-Chip ADSL2+ CPE Chip	153
3.2.10	BCM6358 Single-Chip ADSL2+ Integrated Access Device Solution	154
3.2.11	BCM6362 Single-Chip IAD with Integrated ADSL2+, 802.11n and DECT	155
3.2.12	BCM6368 Residential VDSL2/ADSL2+ Gateway Solution	157
3.3	Lantiq	158
3.3.1	Lantiq VDSL2	158
3.3.2	Lantiq - VINAX™ V3 Architecture	160
3.3.3	Lantiq One Chip Solution VRX220 Carrier xDSL Entry Gateway Solution	161
3.3.4	Lantiq XWAY™ VRX200	163
3.3.5	Lantiq XWAY™ VRX288 / VRX208	163
3.3.6	Lantiq XWAY™ VRX268 / VRX208	163
3.3.7	Lantiq CONVERGATE™	164
3.3.8	Lantiq MELT	164
3.3.9	Lantiq VINETIC™-LTC	164
3.3.10	Lantiq Smart SLIC™-T	165
3.3.11	Lantiq XWAY™ DANUBE	165
3.4	Ikanos	165
3.4.1	Ikanos Chipsets for Central Office and Customer Premises Equipment	167
3.4.2	Ikanos Chipsets for Central Office Equipment	169
3.4.3	Ikanos Chipsets for Customer Premises Equipment	169
3.4.4	• Ikanos Velocity™ A/VDSL CO Chipset	170

3.4.5	Ikanos Accelity™-2+ 8-Port VDSL2 Central Office Chipsets	172
3.4.6	Ikanos' Accelity™ DA87781 VDSL2 CPE Chipset	175
3.4.7	Ikanos Fx™-5 CO	177
3.4.8	Ikanos Orion™ Plus CX98124-11Z	180
3.4.9	Ikanos' Orion™ Plus Four-Channel Single-Pair High-Speed Digital Subscriber Line (SHDSL) Chipset	180
3.4.10	Ikanos Fusiv Vx185/183	182
3.5	Analog Devices	186
3.5.1	Analog Devices VDSL Deployment Configurations	187
3.5.2	Analog Devices Data Rates And Spectrum Allocation	189
3.5.3	Analog Devices VDSL Data Rates	190
3.6	Google	195
3.6.1	Google Developing Method For Operating A Vectored VDSL Line Group 196	
3.6.2	Google Addresses DSL Vectoring	197
3.7	MediaTek xDSL(Ralink) / Trendchip	199
3.8	IXYS Integrated Circuits	201
	<b>4. DSL CHIP TECHNOLOGY</b>	<b>202</b>
4.1	Google DSL Memory Efficiency	202
4.1.1	Google Approach to Vectoring Mitigation Of Crosstalk Inherent In Twisted-Pair DSL Networks	202
4.1.2	Google Approach to Changing DSL Characteristics and Operating Conditions	203
4.1.3	Google DSL Non-Uniform Symbol Usage Distribution	203
4.2	Gigabit (or 1,000 Mbps) FTTP Deployments	204

4.3	VDSL G.Fast and Vectoring 2.0	206
4.3.1	G.fast – Uses 106mhz Of Phone Wire Spectrum To Deliver Gigabit	
Broadband	207	
4.3.2	G.fast – Uses 106mhz Of Wire Spectrum To Deliver Gigabit Broadband	
	209	
4.4	Copper Pair Bonding	212
4.4.1	DSL Vectoring	213
4.4.2	G.Fast & FTTdp Model From Lantiq	214
4.4.3	Germany Puts Off Vectoring Another Six Months	215
4.4.4	G.FAST At Hundreds Of Meg Demoed By British Telecom & Huawei	215
4.4.5	France Telecom Wants Fiber To The Basement, Not All The Way Home	
	215	
4.4.6	Broadcast / G.Fast Interference	216
4.4.7	Vectoring Costs From \$300 (Dense) To \$1500 (Fiber To The Farm)	217
2.8	Cost Dynamics Of Deploying Fiber	217
4.4.8	xDSL REPEATERS	218
4.4.9	G.fast	218
4.4.10	Production-Ready G.hn/G.now	221
4.5	Delivering Video-Intensive Services	221
4.6	VDSL vs. Cable	222
4.7	Ikanos Technologies	225
4.7.1	Advanced Bonding Capabilities	226
4.7.2	Flexible Network Interfaces	226
4.8	Ikanos NodeScale™ Vectoring	226
4.8.1	Ikanos Quality Video (iQV) technology	227



4.9 Telecommunications and DSL Standards Organizations	236
4.9.1 ATIS	236
4.9.2 Broadband Forum	236
4.9.3 ETSI	237
4.9.4 FSAN	237
4.9.5 Home Gateway Initiative	238
4.9.6 The International Telecommunications Union	239
4.9.7 TTC	239
4.9.8 UNH-IOL	239
4.9.9 The FTTH Council Europe	240
4.9.10 The FTTH Council Asia-Pacific	240
4.9.11 The Broadband Forum	241
4.9.12 Home Gateway Initiative	241
4.9.13 Communications Standards Bodies:	241
<b>5 DSL CHIP COMPANY PROFILES</b>	<b>244</b>
5.1 Analog Devices	244
5.1.1 Analog Devices Focus On Key Strategic Markets	245
5.1.2 Analog Devices Broad Line Of High-Performance ICs	247
5.1.3 Analog Devices Digital Signal Processing Products	247
5.1.4 Analog Devices Revenue	248
5.1.5 Analog Devices Revenue Trends by End Market	251
5.1.6 Analog Devices Industrial –	251
5.1.7 Analog Devices Automotive –	251
5.1.8 Analog Devices Consumer –	251
5.1.9 Analog Devices Communications –	252

5.1.10	Analog Devices Markets and Applications	252
5.1.11	Analog Devices Industrial and Instrumentation Segments	252
5.1.12	Analog Devices Defense/Aerospace Segment	253
5.1.13	Analog Devices Energy Management Segment	254
5.1.14	Analog Devices Healthcare Segment	255
5.1.15	Analog Devices Automotive Segment	256
5.1.16	Analog Devices Consumer Segment	258
5.1.17	Analog Devices Communications Segment	259
5.1.18	Analog Devices Segment Financial Information and Geographic Information	260
5.1.19	Analog Devices Revenue Trends by Product Type	260
5.1.20	Analog Devices Revenue Trends by Geographic Region	260
5.2	Arris	261
5.2.1	Arris Revenue	261
5.3	Broadcom	262
5.3.1	Broadcom Broadband Communications Solutions	266
5.3.2	Broadcom Mobile & Wireless (Solutions for the Hand)	266
5.3.3	Broadcom Infrastructure & Networking (Solutions for Infrastructure)	267
5.3.4	Broadcom Customers and Strategic Relationships	267
5.4	BroadLight	268
5.5	Cavium	269
5.5.1	Cavium Customers and Target Markets	271
5.6	Freescale Semiconductor	271
5.6.1	Freescale Embedded Innovation	271

5.7	Ikanos	272
5.7.1	Ikanos Outsourcing and Value Chain	273
5.7.2	Ikanos Net Loss	274
5.7.3	Service Provider Platform Deployments	276
5.7.4	Ikanos Revenue	277
5.7.5	Ikanos Acquired from Conexant Systems, its Broadband Access Product	
Line	280	
5.7.6	Ikanos Product Lines	281
5.7.7	Ikanos Solution	282
5.7.8	Key Features of Ikanos Technology	284
5.7.9	Ikanos Major Service Provider Customers	285
5.7.10	Ikanos Service and Support for Customers and Service Providers	287
5.7.11	Sales, Business Development and Product Marketing	288
5.7.12	Ikanos Go to Market Strategy	288
5.7.13	Ikanos / Aricent	288
5.7.14	Ikanos / ASSIA, Inc.	288
5.7.15	Ikanos / Atheros	289
5.7.16	Ikanos / DSP Group	289
5.7.17	Ikanos / D2 Technologies	290
5.7.18	Ikanos / Gatespace	290
5.7.19	Ikanos / Jungo	290
5.7.20	Ikanos / picoChip	291
5.7.21	Ikanos / Ralink	291
5.7.22	Ikanos / SoftAtHome	291
5.7.23	Ikanos / Sunrise Telecom	292

5.7.24	Ikanos / Wintegra	292
5.8	Infineon Technologies	292
5.8.1	Infineon Technologies Revenue	293
5.9	IXYS Integrated Circuits Division	294
5.9.1	IXYS Integrated Circuits Distribution Channels	295
5.9.2	IXYS Integrated Circuits / Clare	295
5.10	Lantiq	296
5.11	Marvell	297
5.12	MediaTek / Ralink Technology	298
5.12.1	MediaTek / Ralink / Trendchip xDSL	300
5.12.2	MediaTek xDSL(Ralink)	302
5.13	PMC-Sierra	0
5.14	Pulse	0
5.15	Sckipio	0
5.16	Shantou New Tideshine Electron	1
5.17	Shenzhen Chaoyue Electronics Co., Ltd.	2
5.18	Shenzhen Sky Foundation	2
5.19	Shenzhen Tianxiaowei Electronics Co., Ltd.	3
5.20	ZTE	3
5.20.1	ZTE Revenue	5
5.21	Other xDSL Chip Based Products and Market Participants	6

## List of Tables and Figures

Table ES-1	26
DSL G.Fast Chip Market Driving Forces	26
Table ES-2	27
Vendor DSL and G.Fast Competitive Positioning Factors	27
Figure ES-3	30
Global Voice vs. Data Traffic	30
Figure ES-4	31
DSL Chip Market Shares, Dollars, 2013	31
Figure ES-5	33
DSL and G.Fast Chip Market Shipments Forecasts Dollars, Worldwide, 2014-2020	33
Figure 1-1	36
DSL / FTTx Speeds	36
Table 1-2	59
Highly-Integrated Chip Solutions	59
Table 1-3	60
Digital DSL Product Positioning	60
Table 1-4	61
Digital DSL Advantages	61
Table 2-1	66
DSL G.Fast Chip Market Driving Forces	66
Table 2-2	67

Vendor DSL and G.Fast Competitive Positioning Factors	67
Figure 2-3	70
Global Voice vs. Data Traffic	70
Figure 2-4	71
DSL Chip Market Shares, Dollars, 2013	71
Table 2-5	72
DSL Component Shipments Dollars, Worldwide, 2013	72
Figure 2-6	77
DSL and G.Fast Chip Market Shipments Forecasts Dollars, Worldwide, 2014-2020	77
Table 2-7	78
Broadband DSL and G.fast Chip Market Forecasts, Dollars Worldwide, 2014-2020	78
Figure 2-8	80
DSL Chip Market Shipments Forecasts Dollars, Worldwide, 2014-2020	80
Figure 2-9	81
DSL Chip Unit Forecasts, Number, Worldwide, 2014-2020	81
Table 2-10	82
Broadband DSL and G.fast Copper Broadband Infrastructure Market Forecasts, Units Worldwide, 2014-2020	82
Figure 2-11	84
G.fast Chip Market Shipments Forecasts Dollars, Worldwide, 2014-2020	84
Figure 2-12	86
G.fast Chip Unit Forecasts, Number, Worldwide, 2014-2020	86
Table 2-13	88
Broadband DSL and G.fast Market Forecasts, Low End, Mid Range, and High End Units and Dollars Worldwide, 2014-2020	88
Table 2-14	89
Broadband DSL and G.fast Market Forecasts, Low End, Mid Range, and High End Units Worldwide, 2014-2020	89

Figure 2-15	91
DSL and G.fast Chip High End Market Shipments Forecasts Dollars, Worldwide, 2014-2020	91
Figure 2-16	92
DSL and G.fast High-End Market Forecasts, Units, Worldwide, 2014-2020	92
Figure 2-17	93
DSL and G.fast Chip Mid-Range Market Shipments Forecasts Dollars, Worldwide, 2014-2020	93
Figure 2-18	94
DSL and G.fast Mid-Range Market Forecasts, Units, Worldwide, 2014-2020	94
Figure 2-19	95
DSL and G.fast Chip Low End Market Shipments Forecasts Dollars, Worldwide, 2014-2020	95
Figure 2-20	96
DSL and G.fast Low-End Market Forecasts, Units, Worldwide, 2014-2020	96
Table 2-21	97
Broadband DSL and G.fast Chip Market Forecasts, Low End, Mid-Range, and High End Units Worldwide, 2014-2020	97
Table 2-22	98
Broadband DSL and G.fast Market Forecasts, Low End, Mid Range, and High End Units and Dollars Worldwide, 2014-2020	98
Table 2-23	99
Broadband DSL and G.fast Market Forecasts, Low End, Mid Range, and High End Units and Dollars Percent of Total Shipments Worldwide, 2014-2020	99
Table 2-24	100
Broadband DSL and G.fast Market Forecasts, Low End, Mid-Range, and High-End Units and Dollars Percent of Total Shipments Worldwide, 2014-2020	100
Figure 2-25	102
DSL and G.fast Copper Infrastructure Subscriber Forecasts, Number, Worldwide, 2014-2020	102

Figure 2-26	103
G.fast Copper Infrastructure Subscriber Forecasts, Number, Worldwide, 2014-2020	103
Figure 2-27	106
DSL Subscriber Forecasts, Number, Worldwide, 2014-2020	106
Table 2-28	109
Broadband DSL, Cable Modem, Wireless Device, and Fiber to the Home Subscribers Worldwide, 2014-2020	109
Table 2-29	114
Ethernet Market Aspects	114
Figure 2-30	115
Explosion of Protocols	115
Figure 2-31	117
Broadband Services Typical Speed in Mbps	117
Table 2-32	118
Broadband Fiber Cost Per Household to Build Out	118
Table 2-33	119
DSL Chip Applications	119
Figure 2-34	129
DSL Regional Market Segments, 2013	129
Table 2-35	130
DSL Regional Market Segments, 2013	130
Table 2-36	134
DSL Component Shipments by Vendor by Region Dollars, Worldwide, 2013	134
Figure 3-1	137
FTTH vs. G.Fast Costs for Services Providers	137
Table 3-2	140
Broadcom DSL Products	140
Table 3-3	141
Broadcom BCM6519	Multi-DSL Transceiver
Features	141



Table 3-4	142
Broadcom BCM6529 Low Power Dual-Channel Analog Front End Device Features	142
Table 3-5	144
Broadcom BCM65300 VDSL2 G.vector Central Office SoC Features	144
Table 3-6	145
Broadcom's new BCM65x00 Family Central Office SoC Features	145
Table 3-7	148
Broadcom BCM6515 High-Performance VoIP Digital Signal Processor Features	148
Table 3-8	149
Broadcom Applications	149
Table 3-9	159
Lantiq VINAX™ V3 Key Features	159
Table 3-10	161
Lantiq VDSL Products	161
Table 3-11	162
Lantiq Cost-Optimized Design Functions	162
Figure 3-12	166
Ikanos 496pix_Velocity_Chipset2	166
Table 3-13	168
Ikanos Communications Processors	168
Table 3-14	169
Ikanos DSL Chipsets	169
Figure 3-15	171
Ikanos Velocity Chip Architecture	171
Table 3-16	172
Ikanos Velocity™ A/VDSL CO Chipset Key Features	172
Figure 3-17	173
Ikanos Accelity-2+ AD11008	173
Table 3-18	174

Ikanos Accelity-2+ AD11008 Key Features	174
Table 3-19	175
Ikanos Accelity-2+ AD11008 Applications	175
Table 3-20	175
Ikanos Accelity™ DA87781 Applications	175
Table 3-21	176
Accelity DA87781 Family Product Key Features	176
Figure 3-22	178
Ikanos Central Office Architecture	178
Figure 3-23	179
Ikanos DSL System Architecture Block Diagram	179
Figure 3-24	181
Ikanos Orion™ Plus Block Diagram	181
Table 3-25	182
Ikanos Orion™ Plus CX98124-11Z Key Features	182
Table 3-26	184
Ikanos Fusiv Vx185/183 Key Features	184
Figure 3-27	185
Ikanos Fusiv Vx185 System Architecture	185
Table 3-28	186
Analog Devices Very-High-Speed Digital Subscriber-Line (VDSL) Technology Issues	186
Figure 3-29	188
Analog Devices Deployment of VDSL Limited To A Loop Length	188
Table 3-30	190
Analog Devices VDSL Data Rates And Spectrum Allocation	190
Figure 3-31	192
Analog Devices VDSL Frequency Plan For North America	192
Figure 3-32	193
Analog Devices Magnitude Response Of A Bridged-Tap Loop	193
Table 3-33	198

Google Addresses DSL Vectoring	198
Table 3-34	199
MediaTek Product Advantages	199
Table 3-35	200
MediaTek / Ralink Comprehensive Product Portfolio	200
Figure 4-1	205
Network Configurations	205
Figure 4-2	206
Innovation In Copper Supports Fiber to Curb Rollout Leveraging Endpoints Using G.fast	206
Figure 4-3	208
G.fast Vectoring	208
Figure 4-4	210
Fiber to the Distribution Point Architecture	210
Figure 4-5	213
Typical DSL Downstream Broadband Capability	213
Figure 4-6	219
G.fast Copper Network Solution	219
Figure 4-7	222
Broadband Services Typical Speed in Mbps	222
Table 4-8	227
Ikanos NodeScale Vectoring Product Key Features	227
Table 4-9	228
Ikanos Quality Video (iQV) technology Key Features	228
Table 5-1	246
Analog Devices Embedded In Electronic Equipment	246
Table 5-2	253
Analog Devices Industrial And Instrumentation Market Applications	253
Table 5-3	254
Analog Devices Defense/Aerospace Products	254
Table 5-4	255

Analog Devices Energy Management Segment Products	255
Table 5-5	256
Analog Devices Healthcare Segment Innovative Technologies	256
Table 5-6	257
Analog Devices Green Automotive Segment	257
Table 5-7	257
Analog Devices Safety Automotive Segment	257
Table 5-8	257
Analog Devices Comfort Automotive Segment	257
Table 5-9	258
Analog Devices Consumer Segment Products	258
Table 5-10	259
Analog Devices Communications Segment Systems	259
Table 5-11	260
Analog Devices Revenue by Region	260
Table 5-12	266
Broadcom Broadband Communications Solutions	266
Table 5-13	268
Broadcom Customers and Strategic Relationships	268
Table 5-14	281
Ikanos Product Lines	281
Table 5-15	286
Ikanos Works Directly With Various Major Service Providers	286
Figure 5-16	299
MediaTek Revenue	299
Table 5-17	301
MediaTek Industry Leadership	301
Figure 5-18	302
MediaTek Product Portfolio	302
Table 5-19	303
MediaTek Product Advantages	303

**DSL And G.fast Chips:**

**Table of Contents and List of Tables and Figures**

Table 5-20	304
MediaTek / Ralink Comprehensive Product Portfolio	304