Scientific Atlanta
A CISCO COMPANY

Headend Systems

Continuum DVP™ eXtra Dense QAM Array 24 (XDQA24) for Video-on-Demand Delivery

Description

The Scientific-Atlanta® Continuum DVP™ eXtra Dense QAM Array 24 (XDQA24) is specifically targeted to cable operators looking for a high-end, cost and space-efficient edge solution for the advanced digital architecture. The Continuum DVP XDQA24 supports: XoD, broadcast, switched digital broadcast, and data applications. It is a self-contained device combining GbE Interfacing, Routing, Multiplexing, QAM modulation and up-conversion functions.

Scientific-Atlanta's DirectRF™ technology ensures QAM specifications meeting or exceeding the DOCSIS standard (1). Superior RF performance is especially critical when migrating to IP backbones for distributing broadcast services. The Continuum DVP XDQA24 allows one QAM product for narrowcast and broadcast services.

The Continuum DVP XDQA24 is an ideal bridge between flexible IP and Gigabit Ethernet-based backbone networks and existing QAM set-top boxes. Its hot-swappable, modular design allows for scalability by adding QAM cards only when more capacity is needed. QAM cards are configured automatically when inserted, which reduces set-up and maintenance time to a minimum.

The Continuum DVP XDQA24 can be configured via an embedded user interface that can be accessed with a standard Web browser. There is a dedicated Ethernet port for system management and control. An open communication protocol (SNMP) is provided to interface with the VOD management system.

Features

- Integrated solution combining GbE Interfacing, Routing, Multiplexing, QAM modulation and up-conversion
- Compact design, up to 24 QAM channels in 1 RU
- Hot-swappable, auto-configurable QAM cards containing two QAM channels on single RF connector
- Fully redundant powering (AC/DC, DC/DC, or AC/AC)
- Total capacity of 240 VOD streams (4 Mbps, 6 MHz, 256 QAM)
- New DirectRF technology significantly reduces the price per stream
- RF specifications typically meeting or exceeding DOCSIS (1)
- Works with all major VOD servers and STB brands
- Supports broadcast applications
- Support IGMP multicasts
- Supports HD streams
- Direct interfacing from all major IP/Gigabit Ethernet backbone solutions
- Extremely low power consumption
- Modular design allowing for easy expansion, upgrade and maintenance
- Available for all QAM modulation standards (64 & 256 QAM for ITU-A, B & C)
- Fully agile from 45 to 1000 MHz
- Dual GbE inputs – optical/electrical (SFP)
- Supports pre-encryption
- Self-cooling system for efficient space usage (stackable)
- Easy setup using a Web browser
- SNMP management interface

(1) Adjacent Channel Noise Specs provide the minimum intended analog channel CNR protection of 60dB for systems deploying up to 119 QAM channels; RF Output Level not taken into account

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Specifications

GbE Input Interface	
Number of inputs	1+1 (for redundancy)
Connector	Optical/electrical Small Form Factor Pluggable (SFP) (2)
Interface type	Gigabit Ethernet according to IEEE 802.3ab (Electrical) or IEEE 802.3z (Optical)
Data rate	960 Mbps
Syntax	VBR and CBR MPEG SPTS and MPTS on UDP (RFC-768)
RF Outputs	
Number of outputs	Max. 12 x 1 (each with 2 adjacent QAM channels)
Connector	F-type, 75 Ω
Frequency Range Step size Stability Accuracy	 Channel edges between 45 and 1000 MHz (tunable) 25 kHz ± 3 ppm ± 3 ppm
Channel Bandwidth	6, 7 or 8 MHz depending on QAM transmission standard
Level Range Stability Accuracy	 45 to 55 dBmV RMS per QAM Channel in 0.5 dB steps ± 1 dB ± 1 dB
Active channel Return Loss (typical)	14 dB (45-750 MHz) 13 dB (750-870 MHz) 12 dB (870-1000 MHz)
Inter-channel carrier suppression	50 dBc
Management Interface	
Interface type	Ethernet 10/100 Base-T
Connector	RJ-45
Protocols	HTTP, SNMP, HTML, JAVA, FTP
Signal Specifications	
Channel encoding	Scrambling, Reed-Solomon, Trellis and Interleaving according to ITU-T Annex A, B or C
MER (before equalizer)	≥ 35 dB (at RF)
MER (after equalizer)	≥ 43 dB (at RF)
BER (256 QAM)	$\leq 5.10^{-9}$ (ITU-A/C pre FEC) $\leq 1.10^{-13}$ (ITU-B pre FEC / post trellis)
QAM constellations	64 & 256 QAM
Environmental Specifications	
Operating temperature	+32°F to +122°F (0° to +50°C)
Storage temperature	-40°F to +158°F (-40° to +70°C)
Altitude	-200 to +10000 feet AMSL
Operating humidity	5% to 95%, non-condensing
Power supply (nominal)	100 to 240 V AC or -48 V DC
Normal service voltage range	90 to 254 V AC or -38 to -58 V DC
Power consumption (fully loaded)	< 230 W
Chassis Mechanical Specifications	
Height	1.75 in. / 44.45 mm (1 RU)
Width	19 in. / 482.6 mm
Depth	21.0 in. / 533.4 mm
Weight	16.5 lbs / 7.48 kg

(2) SFP Module not included

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Ordering Information

Continuum DVP Dense QAM Array components	Part Number
Housings	
1 RU Chassis (AC/DC powering slots)	4008531
1 RU Chassis (DC/DC powering slots)	4008532
1 RU Chassis (AC/AC powering slots)	4008533
Power Supplies	
AC Power Supply	1001815
DC Power Supply	1001773
AC Power Cords	
Argentina	207340
Australia	1000897
China	745415
Europe	3989835
Italy	3993130
Japan	3993133
UK	3989836
US	3989838
QAM Modulator	
QAM Modulator Card (Quad channels) XDQA24	4009670
SFP Plug-ins – WDM types	
GbE SFP Module 850 nm (LC, up to 500 m)	4002019
GbE SFP Module 1310 nm (LC, up to 5 km)	4002020
GbE SFP Module 1310 nm (LC, up to 10 km)	4003461
GbE SFP Module 1310 nm (LC, up to 25 km)	4002021
GbE SFP Module 1310 nm (LC, up to 40 km)	4003466
GbE SFP Module 1550 nm (LC, up to 40 km)	4002022
GbE SFP Module 1550 nm (LC, up to 70 km)	4002023
SFP Plug-ins – CWDM types	
GbE SFP Module 1470 nm (LC, up to 40 km)	4002003
GbE SFP Module 1490 nm (LC, up to 40 km)	4002004
GbE SFP Module 1510 nm (LC, up to 40 km)	4002005
GbE SFP Module 1530 nm (LC, up to 40 km)	4002006
GbE SFP Module 1550 nm (LC, up to 40 km)	4002007
GbE SFP Module 1570 nm (LC, up to 40 km)	4002008
GbE SFP Module 1590 nm (LC, up to 40 km)	4002009
GbE SFP Module 1610 nm (LC, up to 40 km)	4002010
GbE SFP Module 1470 nm (LC, up to 70 km)	4002011
GbE SFP Module 1490 nm (LC, up to 70 km)	4002012
GbE SFP Module 1510 nm (LC, up to 70 km)	4002013
GbE SFP Module 1530 nm (LC, up to 70 km)	4002014
GbE SFP Module 1550 nm (LC, up to 70 km)	4002015
GbE SFP Module 1570 nm (LC, up to 70 km)	4002016
GbE SFP Module 1590 nm (LC, up to 70 km)	4002017
GbE SFP Module 1610 nm (LC, up to 70 km)	4002018
SFP Plug-ins – 1000 BT copper	
GbE SFP Module 1000 BT copper	4006222

Note : All Class 1 SFP plug-ins according to IEC 60825-1 (1997) Amendment 2 (2001)

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