Description

The Model D9634 and D9638 Advanced QAM Modulators with Re-multiplexing, which are part of the Continuum DVP™ D9600 Advanced Headend Processor family, are a new generation re-multiplexer and professional QAM modulators combining the best RF specification with re-multiplexing, extended transport stream (TS) processing and monitoring in a stackable 1 RU device. Blocking services, changing PSI/SI information, monitoring of the incoming signal and much more is now standard in every Model D9634 and D9638 Advanced QAM Modulator with Re-multiplexing.

Re-multiplexing and excellent RF specifications are very important in every cable environment. But many times small changes have to be made to the signal prior to modulation. This can be as simple as inserting a new NIT table or blocking services and components, thus regenerating most of the SI-tables (including EIT table). The Model D9634 and D9638 Advanced QAM Modulators with Re-multiplexing were designed to combine the high requirements of SI-processing together with high end QAM modulation. Also monitoring of the incoming signal is added. This includes most of the TR 101 290 errors, bit rate measurement on the incoming services and an interpreter PSI/SI viewer.

The optional built-in scrambler allows easy integration with several leading Conditional Access (CA) Systems. Using several CA systems is possible through the Simulcrypt support. Furthermore, redundancy is supported in order to help minimize a system failure.

The RF modulation of the Model D9638 Advanced QAM Modulator with Re-multiplexing supports a full range of variable bit rates, signal bandwidths and QAM constellations, while the output up-converter is fully agile allowing any output frequency.

The Model D9634 and D9638 Advanced QAM Modulators with Re-multiplexing have a graphical user interface based on Java technology. This creates a user friendly environment and limits the learning curve and training costs. Additionally, the QAM modulation parameters can be easily changed from the front. The unit fits into Scientific-Atlanta's total management solutions, the ROSA™ Network Management System. This creates a high integration of the Model D9634 and D9638 Advanced QAM Modulators with Re-multiplexing into the complete digital solution.

**Continuum DVP D9600 Advanced Headend Processor
Model D9634 and D9638 Advanced QAM Modulators
with Re-multiplexing and optional built-in scrambler**

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Features

- Re-multiplexing
  - Up to 4 ASI streams for the D9634 and up to 8 ASI streams for the D9638
  - Possibility to configure a main – backup relationship on the inputs
  - Configurable ASI input Loop Through
  - Each input supports MPTS – SPTS or a PID stream
- QAM modulation and upconverter
  - Supports a full range of variable data rates, signal bandwidths and constellations
  - Complies with ITU-T J.83 standards, annex A (DVB) and C (Japan)
  - Tuneable output RF frequency
  - Front panel RF testpoint (-20 dB)
  - 61 dBmV (RMS) output level
- Advanced Processing
  - PID filtering / re-mapping on each input
  - Blocking of services/components
  - PCR re-stamping
  - Transis loop for easy integration of Scientific-Atlanta's Transis™ Rate Compressor device
- Basic Monitoring
  - Error Monitoring on each input (includes most TR 101 290 errors)
  - Detailed bit rate measurement of incoming services (programs)
  - Built-in PSI/SI viewer
- Extended PSI-SI capabilities
  - Dynamic PSI/SI re-generation
  - PSI/SI play-out carousel
  - Import of all PSI/SI tables
- Optional built-in DVB Scrambler
  - DVB Simulcrypt V3 interface
  - Supports several leading CA Systems
- Management
  - Graphical User Interface based on Java Technology
  - Front panel LCD and buttons for easy set-up and direct alarm status information
  - Full remote control and diagnostics with ROSA management system
  - Backup & automatic level control available with the ROSA management system
- Main and Backup ASI input and loop through
- Ethernet interface for communication with management system, web browser and SI-server

**Continuum DVP D9600 Advanced Headend Processor
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Specifications

Environmental Specifications	
Ambient temperature range	
Within specs	+10°C to +40°C / +50°F to +104°F
Operating temperature	0°C to +50°C / +32°F to +122°F
Storage temperature	-20°C to +70°C / -4°F to +158°F
Power supply (nominal)	100 to 240 V AC ± 10 %, 47 to 63 Hz
Power consumption	< 50 W

Mechanical Specifications	
Height	44 mm / 1.74 in. (1 RU)
Width	482 mm / 19 in.
Depth	470 mm / 18.5 in.
Weight	Approx. 5.6 kg / 12.4 lbs

ASI Input Interface	
Number of inputs	4 (D9634) or 8 (D9638) inputs
Connector	BNC-type
Input Impedance	75 Ω
Interface type	Asynchronous Serial Interface (ASI)(according to EN 50083-9)
Packet format	Auto detection: 188 / 204 byte packets (non-channel encoded)
Bit rate	1 to 215 Mbit/s (minimum 1 Mbit/s payload)
Syntax	SPTS or MPTS (according to ISO/IEC 13818)

ASI Output Interface	
Number of outputs	2 + 1 ASI loop for transrating
Connector	BNC-type
Output Impedance	75 Ω
Interface type	Asynchronous Serial Interface (ASI)(according to EN 50083-9)
Bit rate	1 to 200 Mbit/s
Syntax	SPTS or MPTS (according to ISO/IEC 13818)

Ethernet (management)	
Number of connectors	2
Connector type	RJ-45
Interface type	1 x 10Base-T 1 x 10/100Base-T for CA system
Protocols	HTTP, SNMP, IIOP
User interface	Java

Conditional Access (optional, to be used in low-speed mode)	
Scrambling Algorithm	DVB Common Scrambling Algorithm
Level and mode of scrambling	Service/Program level scrambling support, Component level scrambling support
Number of connectors	1
Connector type	RJ-45
Interface type	Ethernet 10/100Base-T, ASI
Simulcrypt	Simulcrypt version 3
CAS	Conax™, Philips™, Beijing Compunicate Technology™, Irdeto™, Nagra™, Tsinghua Tongfang™, France Telecom™, NDS™, and others

Specifications - continued

RF Output Interface	
Number of outputs	1 output + 1 RF test point
Connector	F-type
Output impedance	75 Ω
Return loss	45 to 870 MHz $\geq$ 14 dB
Frequency range	Channel edges within 45 and 870 MHz
Tuning step	25 kHz
Channel bandwidth (CBW)	6 MHz (ITU-C); 7 or 8 MHz (ITU-A)
Frequency accuracy	± 3 ppm (at room temperature)
Frequency stability	± 3 ppm (within specified temperature range)
Output level (per channel)	50 dBmV to 61 dBmV in steps of 0.5 dB
Output level accuracy	± 1 dB (at room temperature)
Output level stability	± 1 dB (within specified temperature range)
Frequency response	± 0.4 dB in Channel Bandwidth
Integrated phase noise (DSB) and modulated adjacent noise	Exceeds (EURO) DOCSIS specifications
RF mute isolation	> 70 dB
Total discrete spurious inband (fc ± 3 MHz)	< -60 dBc @ max power
Inband spurious and noise (fc ± 3 MHz)	< -55 dBc @ max power
Other channels discrete spurious (50 to 950 MHz)	< -60 dBc @ max power
Out of band CNR	> 75 dBc @ 100 MHz offset

QAM Signal	
Channel encoding	Randomisation, Reed-Solomon, Trellis and Interleaving according to ITU-T Annex A, or C
Symbol rate	5 – 7 MBaud (ITU-A) or 5 – 5.5 MBaud (ITU-C)
QAM constellations	64 & 256 QAM
MER (after equalizer)	$\geq$ 41 dB @ RF
MER (before equalizer)	$\geq$ 34 dB @ RF
BER (pre FEC and @ 256 QAM)	$\leq 5.10^{-9}$
SNR	$\geq$ 50 dB in band

RF Test Point	
Connector	F-type, 75 Ω
Return loss	$\geq$ 18 dB
RF level	-20 dBc ± 0.5 dB

Transport Stream Processing
PID filtering / re-mapping capability
Dynamic PSI/SI regeneration
Built-in PSI/SI viewer
Detailed bit rate measurement of incoming services
Error monitoring

Ordering Information

Continuum DVP D9600 Advanced Headend Processor Model D9634 and D9638 Advanced QAM Modulators with Re-multiplexing	Part Number
Model D9634 Continuum DVP Advanced QAM Modulator with Re-multiplexing (4 ASI inputs)	4007306
Model D9638 Continuum DVP Advanved QAM Modulator with Re-multiplexing (8 ASI inputs)	4007307

Continuum DVP D9600 Advanced Headend Processor Model D9634 and D9638 Advanced QAM Modulators with Re-multiplexing and built-in scrambler	Part Number
Model D9634 Continuum DVP Advanced QAM Modulator with Re-multiplexing and built-in scrambler (4 ASI inputs)	4008736
Model D9638 Continuum DVP Advanved QAM Modulator with Re-multiplexing and built-in scrambler (8 ASI inputs)	4008737

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Part Number 7005320 Rev B
March 2006