Headend Systems

Continuum DVP™ Model D9640 Advanced Transmodulator

Description

The Continuum DVP™ Model D9640 Advanced Transmodulator is a new generation professional transmodulator combining the best RF specification with extended transport stream processing and monitoring in a stackable 1 RU device. Blocking services, changing PSI/SI information, monitoring of the incoming signal after the satellite reception and much more is now standard in every D9640 transmodulator.

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 D9640 was designed to combine the high requirements of SI-processing together with high-end QPSK reception and QAM modulation. As a bonus, monitoring of the incoming transport stream is added. This includes most of the TR 101 290 errors, bit rate measurement on the incoming services and a PSI/SI viewer.

The RF modulation of the D9640 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 D9640 has a graphical user interface based on Java technology. This creates a user friendly environment and limits the learning curve and training costs. Additionally, the QPSK demodulation and QAM modulation parameters can be easily changed from the front. The unit works stand alone but also fits into Scientific-Atlanta's total management solution, ROSA™. This creates a high integration of the D9640 into the complete digital solution and network. Backup scenarios are supported together with both the ROSA Network Management System as well as the ROSA Element Manager.

Features

- QPSK demodulation
  - Digital satellite receiver fully compliant with DVB-S specifications
  - L band input from 950 to 2150 MHz
  - LNC power supply
- 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
- 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
- Ethernet interface for communication with management system, web browser and SI-server

Continuum DVP Model D9640 Advanced Transmodulator

Specifications

Environmental Specifications	
Ambient temperature range Within specs Operating temperature Storage temperature	 +10°C to +40°C / +50°F to +104°F 0°C to +50°C / +32°F to +122°F -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

SAT IF Input Interface	
Number of inputs	1
Connector	F-type
Impedance	75 Ω
Frequency range	950 to 2150 MHz
Tuning step	1 MHz
Input level	-25 to -65 dBm
Return loss (950 to 2150 MHz)	≥ 8 dB
Total discrete spurious at RF input (950 to 2150 MHz)	≤ -65 dBm

Demodulator	
Demodulation	QPSK
Symbol rate	3.0 to 30.0 MBaud
Symbol step size	1 kBaud
Roll-off	α = 0.2, 0.35
Carrier capture range	± 2 MHz

Decoder	
System	DVB-S (EN 300 421)
DVB decoder inner FEC	Viterbi 1/2, 2/3, 3/4, 5/6 or 7/8
DVB decoder outer FEC	Reed-Solomon; t=8

LNB Bias	
Output voltage range	12 to 19V
Output current	Max. 450 mA
Interface	DiSEqC 1.0 complying

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)	≥ 41 dB @ RF
MER (before equalizer)	≥ 34 dB @ RF
BER (pre FEC and @ 256 QAM)	$\leq 5.10^{-9}$
SNR	≥ 50 dB in band

Continuum DVP Model D9640 Advanced Transmodulator

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 ≥ 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

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

Ethernet	
Connector	RJ-45
Interface type	10Base-T
Protocols	HTTP, SNMP, IIOP
User interface	Java

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

Continuum DVP Model D9640 Advanced Transmodulator

Ordering Information

Continuum DVP D9640 Advanced Transmodulator	Part Number
Model D9640 Continuum DVP Advanced Transmodulator	4006241

Europe & Asia
+32 56 445 445
www.saeurope.com
Americas
1-800-722-2009 or 770-236-6900
www.scientificatlanta.com

Part Number 7005288 Rev A
June 2004