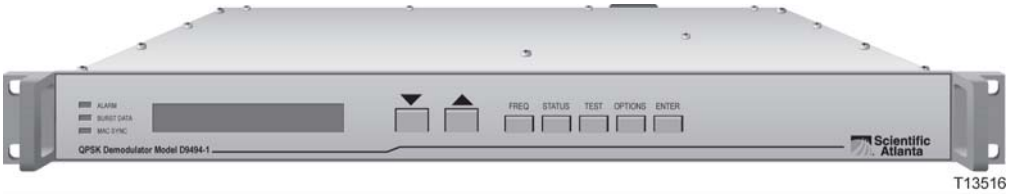
DAVIC QPSK Demodulator – Model D9494

The QPSK Demodulator Model D9494 is an integral component of Scientific Atlanta's Digital Headend product line. This device works in conjunction with the QPSK modulator and digital set-tops to provide forward signaling and reverse path communications for interactive video and data systems over a two-way CATV network. Combined, the QPSK demodulator and QPSK modulator create a DAVIC-compliant headend QPSK signaling hub.



Features

- Interfaces with the QPSK Modulator (model D9482) through ATM-25 interfaces to create a DAVIC-compliant headend signaling hub
- Provides Reed-Solomon error correction for improved performance
- Provides simple-to-use front panel controls for easy operation
- Provides provisioning, control, and status monitoring information through interface to the QPSK Modulator (model D9482) from remote Ethernet access

Product Specifications

Table 1. Product Specifications

Specification	Value
RF	
Tuner Frequency Range	5.00 to 42.00 MHz
Tuning Step Size	250 kHz
Tuner Input Ranges	-13 to +3 dBmV (range 1) -5 to +11 dBmV (range 2) +3 to +19 dBmV (range 3) +11 to +27 dBmV (range 4)
Maximum Input Power	> 35 dBmV (range 4) over specified tuner frequency range
Input Return Loss	> 12 dB
Tuner LO Leakage at Input	< -15 dBmV (range 1)
Maximum Co-channel Single-tone Interferer	< -16 dBc for BER ≤ $1x10^{-8}$
Maximum Total Adjacent Similar QPSK Carrier Power for BER ≤ $1x10^{-8}$	< +14 dBc at nominal carrier input level (no in-band noise)

Modulation	
Modulation Type	Differentially encoded QPSK
Error Correction	Shortened Reed-Solomon (59, 53), t=3
Channel Spacing	1 MHz
Data Rate	1.544 Mbps (nominal)
Maximum Cell Rate (exclusive TDMA)	3,000 ATM cells per second
Payload Datagram	ATM cell; AAL-5 compliant
Scrambling Generator	PRBS-6; generator 1 + x^5 + x^6 synchronized to first bit after 4 octet preamble
Burst Alignment	Preamble detection, followed by unique word correlation
Bit Error Rate (BER)	Better than $1x10^{-8}$ @ 18 dB E_b / N_O
Burst Noise Immunity	No lost cells for noise bursts up to -60 dBc/Hz of duration 1 μsec in any 350 μsec period
Electrical	
Voltage Options	48 VDC model: -42 to 56.7 VDC 100-240 VAC model: 90 to 264 VAC
Power	< 24 W
Connectors	
AC Input (with Option 1 only)	3-prong male socket
DC Input (with option 2 only)	Terminal Block
RF Input	Type F (75 Ω)
IF Monitor Port	Type F (75 Ω)
ATM-25	RJ-45
Alarm Relay	Terminal Block
Alarm Contact Closures	Contact type: 1 form C (NO, NC) contacts Contact rating: 115 VAC; 1A; switched
Mechanical	
Rack Mount Type	EIA RS-310
Dimensions (HxWxD)	1.75 in. x 19 in. x 16.5 in. (4.44 cm x 48.26 cm x 41.91 cm)
Environmental	
Operating Temperature	0° to 50°C (32° to 122°F)
Operating Humidity	0 to 95% non-condensing

Ordering Information

Table 2. Ordering Information

QPSK Demodulator	Part Number
Model D9494-1 DAVIC QPSK Demodulator AC	4021501
Model D9494-2 DAVIC QPSK Demodulator DC	4021502

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