

Cisco Model D9485 DAVIC QPSK Platform

The Cisco® Model D9485 DAVIC QPSK Platform provides DAVIC-compliant headend QPSK signaling capability utilizing a robust design and refined operation via the front panel or web-based GUI.

The D9485 works in conjunction with digital set-tops, including the Cisco Explorer® family of set-tops, to provide forward signaling and reverse path communications for interactive video and data systems over a conventional two-way CATV plant. In addition to the benefit of dual redundant powering (AC or DC) and state of the art components, a single D9485 DAVIC QPSK Platform contains the combined core functionality of one D9482 QPSK Modulator and eight D9494 Demodulators in a compact 1RU chassis.

Figure 1. Model D9485 QPSK Platform



Features

Incorporates “Bridge” Concept

- Integrates one QPSK modulator and eight QPSK demodulators
- Contains interleaving and Reed-Solomon FEC for improved performance
- Implements DAVIC MAC control algorithm
- Provides 10/100/1000BASE-T Ethernet for all application data plus remote operation
- Provides simple-to-use front panel controls for easy operation

Reduced Environmental Footprint

- Lower power consumption (60% reduction)
- No new DNCS System Release required

Improved Reliability

- Dual-redundant powering
- Integrated HW design eliminates ATM interfaces
- Architected with state of the art components

Improved Operational Experience

- SNMP monitoring capability
- Web UI support
- Front-to-back airflow

Figure 2. Back Panel Connectors



Product Specifications

Table 1. Product Specifications

Specifications	Value
Data Interfaces	
Primary Data Connection	10/100/1000 BASE-T Ethernet
Craft Port	RS-232
RF Upstream	
Tuner Frequency Range	5 MHz to 26.5 MHz
Tuning Step Size	250 kHz
Tuner Input Ranges	-13 dBmV to +3 dBmV (range 1) -5 dBmV to +11 dBmV (range 2) +3 dBmV to +19 dBmV (range 3) +11 dBmV to +27 dBmV (range 4)
Total RF Power	≤ 35 dBmV (5 MHz to 42 MHz)
RF Input Impedance	75 Ω
Input Return Loss	> 12 dB (5 MHz to 42 MHz)
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 for BER ≤ 1x10 ⁻⁸ Nominal carrier input level, adjacent channel QPSK Carrier sourced from Cisco STB (upstream transmitter exceeds SCT55-2 adjacent channel energy specification)
RF Downstream	
Tuner Frequency Range (Low Frequency Port)	70 MHz to 130 MHz
Tuner Frequency Range (High Frequency Port)	70 MHz to 1002 MHz
Tuning Step Size	250 kHz
RF Output Power Level	+50 dBmV to +60 dBmV (minimum range)
RF Output Impedance	75 Ω

RF Downstream	<i>(Continued from Page 2)</i>
Inband Spurious Outputs (50 MHz to 1002 MHz)	< -60 dBc
Noise Floor (out-of-band)	< -132 dBc/Hz (> 25 MHz from output frequency)
Output Power Level with Carrier Squelched	< 0 dBmV
Output Frequency Error (over temperature)	< 10 ppm over product lifetime
RF Test Point Level	-20 dB $\pm$ 2 dB over output frequency range
Modulation (Upstream)	
Modulation Type	Differentially Encoded QPSK
Error Correction	Reed-Solomon, K= (59,53), t=3
Symbol Rate	772 KSym/s
RSSI Accuracy	$\pm$ 2 dB
Receiver Timing Accuracy	$\pm$ 1.9 μ s
Bit Error Rate (BER)	Better than 1×10^{-8} @ 18 dB E_b / N_0
Burst Noise Immunity	No lost cells for noise bursts up to -60 dBc/Hz of duration 1 μ s in any 350 μ s period
Modulation (Downstream)	
Modulation Type	Differentially Encoded QPSK
Error Correction	Reed-Solomon, K= (55,53), t=1
Symbol Rate	772 KSym/s
Symbol Pulse Shaping	Square Root Raised Cosine, alpha = 0.30
Spectral Mask	Response @ Offset from Center 0 $\pm$ 0.25 dB @ $\pm$ 270 kHz -3 $\pm$ 0.25 dB @ $\pm$ 386 kHz < -21 dB @ $\pm$ 500 kHz $\leq$ -40 dB @ $\pm$ 772 kHz $\leq$ -60 dB @ $\pm$ 1 MHz
Modulation Error Ratio	> 35 dB un-equalized
Electrical	
Voltage Options	90 VAC to 264 VAC, 47 Hz to 63 Hz (D9485-2 AC) -42 VDC to 56.7 VDC (D9485-2 DC)
Power	87 W with Dual Power Supplies at 25°C 102 W with Dual Power Supplies at 50°C
Connectors	
AC Input (D9485-2 AC)	3-prong male socket (IEC 60320-1 C14)
DC Input (D9485-2 DC)	Screw Terminal
RF Input & Output	Type F, Female
RF Test Point	BNC Female
Ethernet	RJ-45 Female
Craft Port	DB-9 Female
Mechanical	
Rack Mount Type	EIA RS-310
Dimensions (H x W x D)	1.75 in. x 19 in. x 19.5 in. (4.44 cm x 48.26 cm x 49.5 cm)

Environmental	
Operating Temperature	0° to 50°C (32° to 122°F)
Operating Humidity	0 to 95% non-condensing
ROHS	Directive 2002/95/CE Compliant

Ordering Information

Table 2. Ordering Information

DAVIC QPSK Platform	Part Number
Main Unit	
Model D9485 DAVIC QPSK Bridge, 2 x AC PS Module	D9485-2AC
Model D9485 DAVIC QPSK Bridge, 2 x DC PS Module	D9485-2DC
Model D9485 DAVIC QPSK Bridge, No PS Modules included (fits up to 2 x PS modules)	D9485
Spare Power Supplies	
Model D9485 AC Power Supply Module (100-240VAC), SPARE	D9485-PWR-AC=
Model D9485 DC Power Supply Module (-48VDC), SPARE	D9485-PWR-DC=



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