# 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

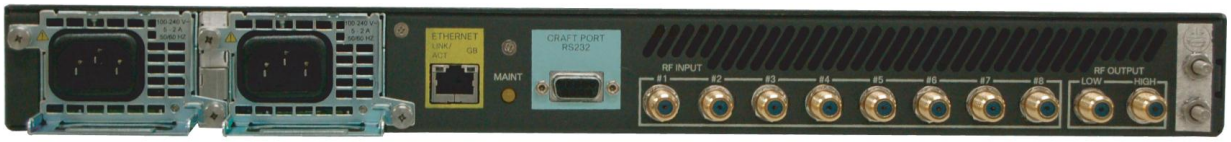
### Improved Reliability

- 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)<br>-5 dBmV to +11 dBmV (range 2)<br>+3 dBmV to +19 dBmV (range 3)<br>+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 ≤$1x10^{-8}$<br>*Nominal carrier input level, adjacent channel QPSK Carrier sourced from Cisco STB (upstream transmitter exceeds SCTE55-2 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 | *(Continued from Page 2)* |
|---|---|
| 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 ±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 | ±2 dB |
| Receiver Timing Accuracy | ±1.9 µs |
| Bit Error Rate (BER) | Better than $1x10^{-8}$ @ 18 dB $E_b / N_0$ |
| Burst Noise Immunity | No lost cells for noise bursts up to -60 dBc/Hz of duration 1 µs in any 350 µs 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<br>0 ± 0.25 dB @ ±270 kHz<br>-3 ± 0.25 dB @ +386 kHz<br>< -21 dB @ ±500 kHz<br>≤ -40 dB @ ±772 kHz<br>≤ -60 dB @ ±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)<br>-42 VDC to 56.7 VDC (D9485-2 DC) |
| Power | 87 W with Dual Power Supplies at 25°C<br>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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