The Motorola DSR-4400MD is a powerful digital headend product, capable of simultaneous decryption of up to 24 services. Whether your application is to feed a 256 QAM channel or a 64 QAM channel, the DSR-4400MD is the answer. With the DSR-4400MD, you can output a full MPEG-2 multiplex at an information rate of 38.8 Mbps or 26.97 Mbps, depending on your needs.

The Motorola DSR-4400MD comes equipped with industry standard interfaces that enable seamless connection to DigiCipher II IRT-1000/2000, MPS Remultiplexer and other head-end equipment for cable encryption and cable modulation.

The ASI and DHEI inputs provide additional flexibility for the Motorola DSR-4400MD by allowing loop-through decryption capabilities when more than 24 services of decryption are required. They also provide a convenient mechanism for monitoring and troubleshooting the signal as it passes through the cable headend.

The full range of DigiCipher II system symbol and code rates is supported, including the higher combined symbol rate of 29.27 Msps, rate 3/4 to enable 40.46 Mbps information rate transmission. With the lower SCPC rates, the DSR-4400MD becomes a flexible product that supports partial transponder utilization. Packaged in a 1RU chassis, the DSR-4400MD offers local monitoring of a single service and the ability to step through the authorization and encryption state of each service. In the event of a transport stream fault, or loss of authorization for any of the provided services, the DSR-4400MD will trigger an alarm indication for the user.

**HIGHLIGHTS INCLUDE:**

- Delivers 256 and 64 QAM satellite multiplexes
- Concurrent decryption of up to 24 services, each service may include video, multiple audio channels and data
- DHEI and ASI inputs and outputs. Selectable 38.8 (default) or 26.97 Mbps transport outputs
- MCPC and SCPC operation
- Dual L-Band input ports
- 1RU chassis
- Analog video and audio for local monitoring
- Supports both C-band and Ku-band
- Improved diagnostics
- Virtual channel maps downloaded over satellite
- Operating system firmware can be downloaded over satellite link
- Selectable DHEI output clock rates of 29.26 or 38.81 MHz
- Form-C relay for fault signaling
- Asynchronous data up 19.2 kbps
- Closed caption pass-through F1/F2
- Outputs NTSC video and analog audio for local monitoring or “standard” IRD operation
- DigiCipher II conditional access control
- Cue-tones via subcarrier or digitally generated
## Technical Specifications

### Input
- **Input Signal Level:** (-)160 dBm to (-)25 dBm
- **Input Frequency:** 950 - 1550 MHz
- **Input Impedance:** 75 Ω
- **Input Connectors:** Two (2) F-type
- **LNB Power Out F-Connector:** 16V DC min/450 mA

### Digital Processing
- **Modulation Modes:** QOQSK and QPSK
- **Symbol Rates:** 3.25 to 29.27 Msps
- **FEC Rates:**
  - 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8 (@3.25 to 29.27 Msps)
  - 5/11 (@ 19.51 and 29.27 Msps)
- **Eb/No:** 4.0 db @ 19.5 Msps (FEC=3/4)

### Video
- **Frequency Response (NTSC):** ±0.9 dB, p-p, 1 kHz - 4.2 MHz
- **Frequency Response (PAL):** ±0.9 dB, p-p, 1 kHz - 5.5 MHz
- **Signal/Noise Ratio:** 57 dB (min)
- **Differential Gain:** 4.5% p-p (max)
- **Difference Phase:** 4.5 deg. p-p (max)
- **Output Impedance:** 75 Ω
- **Output Level:** 1.0 V p-p ± 10%

### Audio
- **Output:** 1 stereo pair or 2 mono
- **Output Level:** ±18.0 dBm, ±1.0 dB into 600 Ω balanced load, adjustable (0 to -15 dB)
- **Frequency Response:** ±1.3 dB, 20 Hz to 20 kHz
- **Total Harmonic Distortion:** 0.3% or better at 1 kHz
- **Signal/Noise Ratio:** 85 dB or better at 1 kHz
- **Isolation, L/R:** 80 dB at 1 kHz
- **Impedance:** 600 Ω
- **Connector:** Quick disconnect screw terminal

### Data
- **Asynchronous Data Rate:** 1.2, 2.4, 4.8, 9.6 and 19.2 kbps

### ASI Input/Output
- **Format:** Asynchronous serial interface
- **Standard:** CENELEC EN 50083-9

### DHEI Input/Output
- **Format:** MPEG-2
- **Packet Clock Rate:** 29.26 or 38.81 Mbps

### Decryption
- **Number of Services:** up to 24 independently encrypted services

### Cue Tones
- **Signal Type:** Differential output
- **Signal Level:** -3 dBm, (600 Ω)/tone min
- **Connector:** Quick disconnect screw terminal

### Alarm Relay
- **Form C:** Quick disconnect screw terminal

### Physical
- **Operating Temperature:** 0° to 40°C ambient
- **Humidity:** 95%, relative maximum
- **Dimensions:** 48 cm/18.90" (W) x 46 cm/18.11" (D) x 4.2 cm/1.65" (H)
- **Weight:** 5.0 kg/11 lbs (approx.)
- **Power Input:** 90-250 VAC, 47-63 H, 25 W (max)

### Other
- **Limited Warranty:** One year
- **UL/TUV/CE:** Listed/approved