# DSR-4500X

## PROFESSIONAL SATELLITE RECEIVER

**MOTOROLA**



The DSR-4500X is Motorola's advanced commercial integrated receiver/decoder (IRD) which features a wide array of outputs to meet the expanding needs of cable programmers and cable operators. In addition to the standard audio and video ports, the Motorola DSR-4500X has connections to deliver data services, MPEG-2 transport streams and headend signaling.

For a variety of data delivery applications, the Motorola DSR-4500X includes an asynchronous (RS-232) port, an isochronous (RS-422) port, and an Ethernet (10/100 BaseT) port. To help deliver complete MPEG-2 transport streams, DHEI and DVB-ASI outputs are provided. For signaling existing headend equipment, a DSR-4500X DTMF tone generator interoperates with ad insertion systems, while 3 sets of contact closures are provided for general purpose device control. Full VBI reinsertion on lines 10-22 for SID/AMOL I & II and NABTS is also standard on the Motorola DSR-4500X.

Supplementing the DSR-4500X's extensive feature set is a newly designed front panel interface that helps allow for quick set-up and installation. A single button push brings up the on screen diagnostics (OSD) - presented on a dedicated video output - to enable rapid access to pertinent information. Disaster recovery and network migration are effectively implemented by utilizing multiple RF input ports, a variable front-end tuner, the bypass mode of operation and the ability to receive clear analog programming in addition to digital signals.

The full range of DigiCipher® II symbol and code rates are supported, including the higher combined rate of 29.27 Msps, rate 3/4, combined to enable 40.46 Mbps information rate transmission.

## Features

- 8 RF inputs
- 10/100 BaseT Ethernet port
- ASI and DHEI outputs
- MPEG-2 Main Level@Main Profile and DigiCipher® II digital video
- Variable symbol rate from 3.25 Msps to 29.27 Msps
- Dolby® brand AC-3® audio processing
- VBI reinsertion SID/AMOL-I & II, NABTS and closed caption
- 4-line front panel
- Single button OSD
- DigiCipher® II conditional access control
- Quick disconnect screw terminals for easy installation of audio and data
- Bypass video and audio inputs
- DTMF cue tones for local ad insertion
- 3 sets of contact closures (1 set can be used for summary alarm)

# DSR-4500X Professional Satellite Receiver Specifications

### Input

| | |
|---|---|
| Input Signal Level | (-)65 dBm to (-)25 dBm |
| Input Frequency | 950 - 2150 MHz |
| Input Impedance | 75 Ω |
| Input Connectors | Eight (8) F-type |
| LNB Power Out F-Connector | 16V DC min/250 mA (port 1 only) |
| Port-to-Port Isolation | 40 dBm (minimum) |

### Digital Processing

| | |
|---|---|
| Modulation Modes | OQPSK and QPSK |
| Symbol Rates | 3.25, 4.88, 7.32, 9.76, 11.71, 14.63, 19.51, 29.27 Msps |
| Forward Error Correction | @3.25 to 14.63 Msps (combined) = 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8 @ 19.51 (split/combined) and 29.27 @ 3.25 to 14.63 Msps (combined)= 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8 @ 19.51 (split/combined) and 29.27 (split) Msps = 5/11, 1/2, 3/5, 3/4, 4/5, 5/6, 7/8 @ 29.27 (combined) Msps = 5/11, 1/2, 3/5, 2/3, 3/4 |

### Video (MPEG-2 mode)

| | |
|---|---|
| Frequency Response (NTSC) | ±0.75 dB p-p, 1 kHz - 4.2 MHz |
| Frequency Response (PAL) | ±0.75 dB p-p, 1 kHz - 5.5 MHz |
| Signal/Noise Ratio | 57 dB (min) |
| Differential Gain | 4.5% p-p (max) |
| Differential Phase | 4.5 deg. p-p (max) |
| Output Impedance | 75 Ω |
| Output Level | 1.0 V p-p |

### Audio (MPEG-2 mode)

| | |
|---|---|
| Outputs | 2 stereo pair or 4 mono |
| Output Level | ±16 dBm, ±1 dB into 600 Ω balanced load, adjustable (0 to -15 dB) |
| Frequency Response | ±1 dB, 20 Hz to 20 kHz |
| Total Harmonic Distortion | 0.25% or better at 1 kHz |
| Signal/Noise Ratio | 85 dB 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 |
| Isochronous Data Rate | 19.2 kbps - 2.048 Mbps, 3, 4.5, 9 Mbps |

### ASI Output

| | |
|---|---|
| Format | Asynchronous serial interface |
| Transmission | Data burst |
| Standard | CENELEC EN 50083-9 |
| Connector | BNC |

### DHEI Output

| | |
|---|---|
| Format | Differential ECL |
| Packet Clock Rate | 29.26 or 38.81 Mbps |
| Connector | DSUB-15 |

### Cue Tones

| | |
|---|---|
| Signal Type | Differential output |
| Signal Level | (-)10 dB min (600Ω)/tone |
| Connector | Quick disconnect screw terminal |

### Contact Closures

| | |
|---|---|
| Number of Closures | 3 |
| Type | Form C |

### Ethernet

| | |
|---|---|
| Connector | RJ-45 |
| Format | 10/100 BaseT |

### Physical

| | |
|---|---|
| Operating Temperature | 0° to 40°C (ambient) |
| Humidity | 5% to 95% (relative, non-condensing) |
| Dimensions | 78 cm(W) x 46 cm(D) x 8.9 cm(H) |
| Weight | 8.0 kg (approx.) |
| Power Input | 90-250 VAC, 47-63 H, 55 W (max) |

### Other

| | |
|---|---|
| Limited Warranty | One year |
| UL/TUV/CE | listed/approved |