

# DSR-4520X

## PROFESSIONAL SATELLITE RECEIVER



The Motorola DSR-4520X is the new advanced featured DigiCipher® II integrated receiver/decoder (IRD). The Motorola DSR-4520X digital satellite receiver is designed for cable operators and other commercial satellite operations who want to maintain their signal in a digital format. Incorporating multiple digital outputs, the Motorola DSR-4520X is the IRD to provide solutions for today's needs and tomorrow's opportunities. Digital outputs on the Motorola DSR-4520X include: serial digital interface (SDI) output, AES/EBU audio outputs and asynchronous serial interface (ASI) output. Digital data outputs include: Internet protocol data, isochronous data and asynchronous data.

The SDI output provides 2 channels of embedded audio to allow easy routing of video and audio through a cable facility. The discrete AES audio outputs can be used in combination with the SDI video without the need for audio de-embedding equipment. Dolby® digital audio pass-through is available on both the SDI embedded audio and the discrete AES audio outputs. A complete MPEG-2 transport stream is available through the ASI output.

IP data is output directly onto one of the 2 Ethernet connectors on the DSR-4520X. A transport stream consisting entirely of IP data can be output from the DSR-4520X Ethernet port. The Ethernet connections also allow remote command/control capabilities. Additional data delivery applications are supported through asynchronous (RS-232) and isochronous (RS-449) ports.

For more information regarding any of these features contact your Motorola sales representative.

### HIGHLIGHTS INCLUDE:

- SDI output with 2 channels of embedded audio
- 2 discrete AES digital audio outputs
- 10/100 BaseT Ethernet port
- ASI output
- Variable symbol rate from 3.25 Msps to 29.27 Msps
- Supports maximum 47.2 Mbps throughput for *MegaPipe* configurations
- Dolby® brand AC-3® audio processing
- VBI reinsertion SID/AMOL-I & II, NABTS and closed caption
- Separate video output for diagnostic

- on-screen-display (OSD)
- DigiCipher II conditional access control
- 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)

## GENERAL SPECIFICATIONS

### Input

Signal Level:	(-165 dBm to (-)25 dBm
Input Frequency:	950 - 2150 MHz
Input Impedance:	75 $\Omega$
Input Connectors:	Eight (8) F-type
LNB Power Out:	16V DC min/250 mA (port 1 only)
Port-to-Port Isolation:	40 dBm (minimum)

### Digital Processing

Modulation Modes:	QPSK and QPSK
Symbol Rates:	3.25, 4.88, 7.32, 9.76, 11.71, 14.63, 19.51, 29.27 Msps
FEC Rates:	5/11 (19.51 & 29.27 Msps only), 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8

### SDI

Standard:	SMPTE-259M
Output Level:	800 mV $\pm$ 80 mV
Connector:	BNC
Output Impedance:	75 $\Omega$

### Digital Audio

Standard:	AES-3id
# of Channels:	2
Connector:	BNC

### Composite Video

Frequency Response (NTSC):	$\pm$ 0.75 dB p-p, 1 kHz - 4.2 MHz
Frequency Response (PAL):	$\pm$ 0.75 dB p-p, 1 kHz - 5.5 MHz
Signal/Noise:	57 dB (min)
Differential Gain:	4.5% p-p (max)
Difference Phase:	4.5 deg. p-p (max)
Output Impedance:	75 $\Omega$
Output Level:	1 V p-p

### Analog Audio

Output:	2 stereo pair or 4 mono
Output Level:	$\pm$ 16 dBm, $\pm$ 1 dB into 600 $\Omega$ balanced load, adjustable (0 to (-)15 dB)
Frequency Response:	$\pm$ 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 $\Omega$
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

### Cue Tones

Signal Type:	DTMF Differential output
Signal Level:	(-10 dB min (600 $\Omega$ )/tone
Connector:	Quick disconnect screw terminal

### Contact Closures

Closures:	3 (1 summary alarm)
Type:	Form C

### Ethernet

Connector:	RJ-45
Format:	10/100BaseT
Max Throughput:	47.2 Mbps
# of Connectors:	2

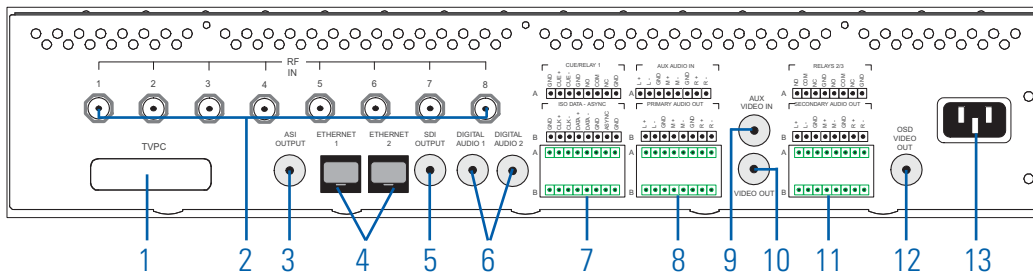
### Physical

Operating Temperature:	0 to 40°C (ambient)
Humidity:	5 to 95% (relative, non- condensing)
Dimensions:	78cm(W) x 46cm(D) x 8.9cm(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

## INPUTS/OUTPUTS



- |                          |                              |  |
|--------------------------|------------------------------|--|
| 1..... TVPass® Card Slot | 6..... Digital Audio 1 & 2   | 10..... Composite Video Out                |
| 2..... RF Input Ports    | 7..... Cue Tones/Relay 1/2/3 | 11..... Secondary Audio Output & Relay 2/3 |
| 3..... ASI Output        | 8..... Primary Audio Output  | 12..... OSD Video Out                      |
| 4..... Ethernet 1 & 2    | 9..... Auxiliary Video Input | 13..... Power Cord Connector               |
| 5..... SDI Output        |                              |  |