

# CDSR Series

## Commercial Digital Satellite Receiver



### ○ Features & Benefits

- C/Ku Band Compatible - 950 to 1550 MHz Digital Satellite Receiver
- DigiCipher® II Encoding Compatible
- Supports Virtual Channing Mapping & Control via Extensive Software Menu
- UL Listed
- One Year Motorola Warranty

The CDSR-4400X is a professional quality, high performance, commercial digital satellite receiver. This unit is ideal for applications requiring an economically priced, commercial grade digital IRD. The CDSR-4400X is C and Ku band compatible, based upon DigiCipher® II encoding. It accepts signals in the 950 to 1550 MHz frequency range. Complete control of the CDSR-4400X is accomplished using extensive front-panel accessible menus.

The microprocessors and memory integrated into each CDSR-4400X decode and decompress the MPEG II video, audio, data and other information present in the signal, allowing significantly less information to be transmitted which reduces bandwidth requirements.

### ○ Specifications

#### RF

Frequency Range: 950 - 1550 MHz  
Isolation, Port to Port: 40 dB  
Impedance: 75 Ohm

#### Video

Frequency Response (NTSC):  $\pm 1.0$  dB  
Frequency Response (PAL):  $\pm 1.0$  dB  
Format: QPSK & QPSK DigiCipher® II  
Differential Gain: 5% p-p  
Differential Phase: 5° p-p  
Signal-to-Noise Ratio: 57 dB

#### Audio

Frequency Range: 20 Hz - 20 kHz  
Frequency Response:  $\pm 1.3$  dB  
Output Level: +16,  $\pm 1$  dB dBm  
Output Level Range: 0 to -15 dB  
Stereo L-R Separation: 80 dB  
Signal-to-Noise Ratio: 85 dB  
Harmonic Distortion: <0.3 % THD  
Impedance: 600 Ohm

#### General

Power Requirements  
Voltage: 90 to 140 VAC  
Frequency: 57 to 63 Hz  
Power: 40 W  
LNB Supply: 19 to 21 VDC 480 mA, maximum

#### Mechanical

Material: Steel Chassis  
Dimensions: 48 W x 46 D x 4.24 H cm  
Weight: 5.0 kg

#### Connectors (Rear Panel)

RF Input/LNB Power: "F" type, female  
Aux Video Input/Output: Screw Terminal  
Left Audio Input/Output: Screw Terminal  
Right Audio Input/Output: Screw Terminal  
Mono Audio Input/Output: Screw Terminal  
Cue Tone Output: Screw Terminal  
Asynchronous Data: Screw Terminal  
High Speed Data: Screw Terminal  
Ground: Screw Terminal  
TvPass™ Security Slot: Card Slot

#### Controls (Front Panel)

Keypad: Push Buttons

### ○ Ordering Information

Model	Stock No.	Description
CDSR-4400X	6195X	Commercial Digital Satellite Receiver DigiCipher II & MPEG II

Refer to product instruction manual for additional specification measurements and notes.

# CDSR Series

## Digital Satellite Receiver



### ○ Features & Benefits

- Rack Mountable - 1 EIA (1.75") Rack Space
- DVB Compliant Decompression with FEC and Virtual Channel Mapping Support
- Front Panel Mounted Push Button Switches for Easy Channel Selection
- UL Listed with Three Year Product Warranty
- Professional Commercial Satellite Receiver for EchoStar Dish Network Compatibility

The CDSR-6198 is a professional quality, high performance, commercial digital satellite receiver. The unit is designed to receive MPEG-2, DVB compliant DISH Network™ programs. The CDSR-6198 is ideal for cable systems requiring a single small DBS antenna while maintaining the highest signal quality and reliability. The best possible video and audio quality is delivered by using a combination of forward error correction (FEC) techniques.

Each receiver has a unique address stored on the communication card. The receiver automatically handles virtual channel mapping using a programmer transmitted satellite transponder lookup table. Channels are user-selectable via Push Button Switch on the front panel. Monaural and stereo audio outputs are provided.

### ○ Specifications

#### RF

Frequency Range: 950 - 1450 MHz  
Impedance: 75 Ohm  
Input Level: -70 to -30 dBm  
IF Band Width: 32 (at -3 dB) MHz

#### Video

Frequency Range Composite:  
± 0.6 (100 KHz to 4.2 MHz) dB  
Level: 1.0 (± 3 % into 75 Ohm) Vp-p  
Format: QPSK, MPEG-2 DVB  
C/L Delay Inequality: ± 40 ns  
Differential Gain: < 3 % p-p  
Differential Phase: < 3 ° p-p  
Signal-to-Noise Ratio: > 55 dB (weighted)  
Luma Delay: < 40 ns  
Line Time Distortion: < 1.5 % TILT  
Field Time Distortion: < 1.5 % TILT

#### Audio

Frequency Range: 20 Hz - 20 kHz (±1 dB)  
Output Level  
(Left and Right): 0 (into 600 Ω) dBm  
Mono: 1 (into 10K Ω) Vp-p  
Stereo L-R Separation: 50 dB  
Signal-to-Noise Ratio: 80 dB  
Harmonic Distortion: < 0.1 (at 1 KHz) % THD  
Dynamic Range: 90 dB  
Left to Right Balance: < 0.8 dB

#### General

Power Requirements  
Voltage: 110 (± 22%) VAC  
Frequency: 54 to 66 Hz  
Power: 23 W

LNB Supply RHCP Polarity Switching:  
+13.3 (±7%) V  
LHCP Polarity Switching: +18.3 (±7%) V  
Current: 300 (max) mA  
Protection: Lightning, short circuit  
Safety: UL listed 1409

#### Mechanical

Dimensions (WxHxD):  
19.00 x 1.75 x 14.5 in  
482.6 x 44.4 x 368.3 mm  
Weight: 5.00 lbs, 2.27 kg  
Operating Temperature:  
32 to 122 °F, (0 to 50) °C

#### System Specifications

TV System: NTSC  
Input Symbol Rate: 20 Msps  
Inner FEC: Convolutional Rate 3/4  
Outer FEC: Reed Solomon coding (204,188) t=8  
Demultiplexing: ISO/IEC 13818-1  
Video Decoding: ISO/IEC 13818-2 (MP-ML)  
Audio Decoding: MPEG 1, layer 1 and 2

#### Connectors (Rear Panel)

RF Input/LNB Power: "F" type, female  
Video Composite: "F" type, female  
Left And Right Audio Output: Terminal Strip  
Mono Audio Output: Terminal Strip

#### Controls (Front Panel)

Channel Selector: Push Buttons

Refer to product instruction manual for additional specification measurements and notes.

### ○ Ordering Information

Model	Stock No.	Description
CDSR-6198A	6198A	Commercial Digital Satellite Receiver Dish Network DBS Programming

# CDSR Series

## Commercial Digital Satellite Receiver



### ○ Features & Benefits

- Rack Mountable - 1 EIA (1.75") Rack Space
- DVB Compliant Decompression with FEC and Virtual Channel Mapping Support
- Front Panel Mounted Push Button Switches for Easy Channel Selection
- UL Listed with Three Year Product Warranty
- Professional Commercial Satellite Receiver for Bell ExpressVu Compatibility

The CDSR-6181 Series is a professional quality, high performance, commercial digital satellite receiver. The unit is designed to receive the MPEG-2, DVB compliant Bell ExpressVu programs. The CDSR-6181 is ideal for cable systems requiring a single small DBS antenna while maintaining the highest signal quality and reliability. Proprietary on-board software shields the receiver from consumer DBS transmitted instructions. Each receiver has a unique address stored on the communication card. The receiver automatically handles virtual channel mapping using a programmer transmitted satellite transponder lookup table. Channels are user-selectable via push button switches on the front panel. The CDSR-6181 delivers the best possible video and audio quality by using a combination of forward error correction (FEC) techniques. Monaural and stereo audio outputs are provided.

### ○ Specifications

#### RF

Frequency Range 950 - 1450 MHz  
Impedance: 75 Ohm  
Input Level: -70 to -30 dBm  
IF Band Width: 32 (at -3 dB) MHz

#### Video

Frequency Range Composite:  
± 0.6 (100 KHz to 4.2 MHz) dB  
Level: 1.0 (± 3 % into 75 Ohm) Vp-p  
Format: QPSK, MPEG-2 DVB  
C/L Delay Inequality: ± 40 ns  
Differential Gain: < 5 %p-p  
Differential Phase: < 5 ° p-p  
Signal-to-Noise Ratio: > 50 dB (weighted)  
Luma Delay: < 40 ns  
Line Time Distortion: < 1.5 % TILT  
Field Time Distortion: < 1.5 % TILT

#### Audio

Frequency Range: 20 Hz - 20 kHz (±1 dB)  
Output Level  
(Left and Right): 0 (into 600 Ohm) dBm  
Mono: 1 (into 10K Ohm) Vp-p  
Stereo L-R Separation: 50 dB  
Signal-to-Noise Ratio: 80 dB  
Harmonic Distortion: < 0.1 (at 1 KHz) % THD  
Dynamic Range: 90 dB  
Left to Right Balance: < 0.8 dB

#### General

Power Requirements  
Voltage: 110 (± 22%) VAC  
Frequency: 54 to 66 Hz  
Power: 23 W

LNB Supply RHCP Polarity Switching:  
+13.3 (±7%) V  
LHCP Polarity Switching: +18.3 (±7%) V  
Current: 300 (max) mA  
Protection: lightning, short circuit  
Safety: UL listed 1409

#### Mechanical

Dimensions (WxHxD):  
19.00 x 1.75 x 14.5 in  
482.6 x 44.4 x 368.3 mm  
Weight: 5.00 lbs, 2.27 kg  
Operating Temperature:  
32 to 122 °F  
(0 to 50) °C

#### System Specifications

TV System: NTSC  
Input Symbol Rate: 20 Msps  
Inner FEC:  
Convolutional Rate 1/2, 3/4, 2/3, 5/6, 7/8  
Outer FEC:  
Reed Solomon coding (204,188) t=8  
Demultiplexing: ISO/IEC 13818-1  
Video Decoding: ISO/IEC 13818-2 (MP-ML)  
Audio Decoding: MPEG 1, layer 1 and 2

#### Connectors (Rear Panel)

RF Input/LNB Power: "F" type, female  
Video Composite: "F" type, female  
Left And Right Audio Output: Terminal Strip  
Mono Audio Output: Terminal Strip

#### Controls (Front Panel)

Channel Selector: Push Buttons

Refer to product instruction manual for additional specification measurements and notes.

### ○ Ordering Information

Model	Stock No.	Description
CDSR-6181	6181A	Commercial Digital Satellite Receiver Bell ExpressVu DBS Programming

# CDSR Series

## Commercial Digital Satellite Receiver



### ○ Features & Benefits

- Rack Mountable - 1 EIA (1.75") Rack Space
- Professional Commercial Satellite Receiver for DirecTV Compatibility
- Front Panel Mounted Push Button Switches for Easy Channel Selection
- UL Listed with Three Year Product Warranty
- DirecTV MPEG-1 & MPEG-2 Decompression and Virtual Channel Mapping Supported

The CDSR-6199 & CDSR-6182 are professional quality, high performance commercial digital satellite receivers. The CDSR-6199 and the CDSR-6182 are single receivers. Both Units occupy one 1.75" EIA Rack Space. The units are designed to receive MPEG-1 & MPEG-2 DirecTV programs. They are ideal for cable systems requiring a single small DBS antenna while maintaining the highest signal quality and reliability.

Each receiver has a unique address stored on the communication card. The receiver automatically handles virtual channel mapping using a programmer transmitted satellite transponder lookup table. Channels are user-selectable via Push Button Switch on the front panel. Monaural and stereo audio outputs are provided.

### ○ Specifications

#### RF

Input Frequency Range: 950 - 1450 MHz  
Impedance: 75 Ohm  
Return Loss: -10 dB (max into 75 Ohms)  
Input Level: -65 to -25 dBm  
Total Bandwidth: 24 MHz  
Adj. Chan. Power:  $\pm 4$  dBm  
Modulation: QPSK  
Pulse Shaping Sq. Root:  
Nyquist 20% excess BW  
Transmit Symbol Rate: 20 MSPS

#### Video

Level: 1.0 ( $\pm 3$  into 75 Ohm) Vp-p  
Chrominance to Luminance Delay:  $\pm 75$  ns  
Luminance K Factor  
(2T Pulse):  $\leq 5$  %  
Differential Gain:  $\leq 10$  %

#### Audio

Output Voltage:  
0.2 (min) to 2.0 (max) Vrms  
Impedance: 10 K ohm  
S/N:  $>90$  dB  
THD:  $\leq 0.05$  %  
Dynamic Range:  $>90$  dB  
A/V Time Differential:  $\pm 20$  ms  
Gain Differential L-R:  $\leq 1.5$  dB (50 Hz - 15 KHz)  
Phase Differential L-R:  $\leq 3$  deg (50 Hz - 15 KHz)

#### General

Power Requirements  
Voltage: 110 ( $\pm 20\%$ ) VAC  
Frequency: 54 to 66 Hz  
Power: 20 (max) W

#### LNB Supply

Current: 300(max) mA  
Protection: Lightning, Short Circuit  
Safety: UL Listed 1409

#### System Specifications

TV System: NTSC  
Connectors (Rear Panel)  
RF Input/LNB Power: "F" female  
Video: "F" female  
Mono, L/R Audio: Terminal Strip  
Phone Line Connection: RJ-11

#### Controls (Front Panel)

Channel Selector: Push Button Switch  
Enter Channel: Toggle Switch  
Power: Toggle Switch  
LED Indicator: Green LED

#### Mechanical

Dimensions: 19 x 1.75 x 18 in.  
Weight: 5.4 lbs.  
Operating Temperature: 0 to 50 °C

Refer to product instruction manual for additional specification measurements and notes.

### ○ Ordering Information

Model	Stock No.	Description
CDSR-6199	6199	Commercial Digital Satellite Receiver DIRECTV DBS Programming
CDSR-6182	6182	Commercial Digital Satellite Receiver DIRECTV DBS Programming with Balanced Audio