

ChannelMaster RX7

HD/SD Portable Receiver Integrated Decoder and Multi-Mode Demodulator

Features:

- HD/SD-MPEG2 decoding
- Multiple demodulation; FM, COFDM, VSB, QAM
- Single, dual and tri-band
- Auto detection of all DVB-T compliant set-up parameters
- Front panel display of BER, MER, link quality and RCL
- Internal 810 MHz spectrum viewer, optional
- Easy to use, fifteen quick-store user defined preset keys
- Front panel smart display for total system set-up capability
- Outputs: video/composite, audio (analog and digital AES/EBU), SDI (with embedded audio) ASI and 70 MHz
- Four audios, standard
- Four IF filter selections are offered 6, 8, 12 and 20 MHz
- RS-232 for remote control requirements
- Lightweight, ideal for portable or airborne applications
- Companion to the CMTX7 portable TX and CamPac2 wireless camera transmitter
- Integrated universal AC/DC power supply
- Optional spectrum viewer available



The ChannelMaster RX7, ushering in a new class of totally integrated, feature-rich portable microwave receivers. The ChannelMaster can be supplied in single band, 2, 7 or 13 GHz, dual band or tri-band configurations. Other frequency bands available. The ChannelMaster RX7 features an integrated DVB-T compliant COFDM demodulation that is software configurable between COFDM, analog, QAM and VSB in a single radio.

The HD/SD decoder features fast lock up time, holds lock longer and requires the digital signal faster than most decoders currently on the market. In addition, the RX7 automatically detects all digital parameters of the transmitted signal.

Fifth generation VSB provides a good platform for HD, with data rates up to 29 Mbps in a 6 MHz bandwidth. VSB provide robust signals in a variety of conditions. The pilot carrier in VSB allows the decoder to lock very quickly to the incoming signal and hold lock longer than most other formats.

The ChannelMaster sets up fast in the field and is easy to use with features such as a front panel for fast access to commonly used functions and fifteen user defined, preset buttons.

For increased flexibility a wide array of outputs are provided, including composite video/audio (analog and AES/EBU), SDI (HD) with embedded audio, ASI (HD) and 70 MHz. Four audio outputs are standard on the RX7.

To aid in signal alignment and for quality monitoring purposes, a quality meter is provided on the front panel display. Displayed parameters include RCL, link quality, MER, BER (pre and post correction) and modulation. An optionally available internal spectrum viewer is available which displays 810 MHz and allows the operator to view his signal as well as adjacent signals.

The ChannelMaster RX7 using the familiar clam shell design is lightweight for a variety of applications including airborne repeater, tripod mounted portable and ENG van receive systems.

The ChannelMaster includes a universal AC/DC power supply that operates from 90 to 260 VAC and 11 to 32 VDC.

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RF Performance:

Frequency Bands

Part Number	Frequency
23CMRX7	1.99-2.5 GHz
25CMRX7	2.3-2.7 GHz
70CMRX7	6.4-7.2 GHz
72CMRX	6.7-7.4 GHz
75CMRX7	7.1-7.7 GHz
82CMRX7	7.7-8.4 GHz
100CMRX7	10.0-10.7 GHz
130CMRX7	12.7-13.2 GHz
	(Also, dual and triband models available)
	(other plans available per user requirements)
Tuning step size:	250 kHz (US), 100 kHz (International)
70 MHz output:	-10 dBm \pm 3 dBm (75 Ohms)
Frequency stability:	\pm 5ppm (.0005%)
IF Filters	6 MHz SAW, 8 MHz SAW, 12 MHz SAW, 20 MHz LC

Demodulation Support:

Demodulation 1

Demodulation Formats:	OFDM (DVB-T)
Carriers:	2K*
Constellation:	QPSK, 16QAM, 64 QAM*
Code Rate:	1/2, 2/3, 3/4, 5/6, 7/8*
Guard Interval:	1/32, 1/16, 1/8, 1/4 *
Bandwidth:	6 MHz, 7 MHz, and 8 MHz *
Threshold:	C/N within 2dB of ET51300 744 Standard
	QPSK, 1/2, 1/32, 8MHz -93dBm
	Defined when the output BER \approx 1x10-6
Acquisition Speed	100ms Typical

Demodulation 2

Analog FM:	2 field tunable sub-carriers (optional 4)
Modulation Deviation (field selectable):	3 MHz/volt or 4 MHz/volt
Threshold:	
2 GHz	-87dBm @ 37dB video SNR
7 GHz	-86dBm @ 37dB video SNR

Demodulation 3 (optional)

Modulation Formats	VSB*
Constellation:	2 VSB, 4 VSB, 8 VSB, 8 TVSB(ATSC)*
Acquisition Speed	100 ms Typical
Threshold:	2 VSB ~ 93 dBm
	Defined when the output BER 1x10-6

* All digital modes auto detect this includes VSB and COFDM detection.
Manual selection is required between FM and Digital (VSB/COFDM).

ASI Output:

ASI output rate	Auto/fixed
	Auto: Rate determined by modulation format.
	Fixed: Adjustable output rate to 99MBPS
	(PCR retime stamped)
TS-Packet	188, 1 Byte space

MPEG Decoder:

Video:

Format:	1080i @ 23.98/24/25/29.97/30fps 1080p@ 23.98/24/25/29.97/30fps 720p@ 23.98/24/25/29.97/30fps NTSC: 720 x 480(4:2:0)/720 x 525(4:2:2) PAL: 720 x 576(4:2:0)/720 x 625(4:2:2) SD:MP@ML(4:2:0)/422@ML(4:2:2) HD:MP@HL(4:2:0)/422p@HL(4:2:2) ISO/IEC 13818-2 Variable IPB support. SD:75, 1Vp-p, NTSC/PAL HD: monitoring grade SD down-convert. 0.25 dB (10 Hz to 5MHz)
Profile:	
GOP:	
Composite Output	
Frequency Response:	
SDI output	
SD:	ANSI/SMPTE 259M
HD:	292M
	With 4 channels of embedded audio.
Audio	
Audio Coding	ISO/IEC 11172-3(Layer I and II)
Audio Bit Rate	up to 384 kbps (Layer II), 448 kbps (Layer I)
Audio Sample Rate	48 KHz
Audio Channels	2 Stereo, 4 Mono
Audio output	4xLine, Gain (0 to -9dB), 600 (18dBm = 0dBFS) 2 x AES/EBU, 150 Ω Balanced Embedded SDI (4 Channels) 40Hz - 20 KHz: \pm 0.5 dB 0.25% @ 1 KHz, +8 dBm
Frequency Response:	
Audio THD:	

FM Demodulator:

Video:	525/625 lines NTSC/PAL field selectable
Composite output	75 Ω , 1Vp-p, NTSC/PAL
Video Deviation	1V p-p for \pm 4 MHz deviation
	1V p-p for \pm 3 MHz deviation (Automatic or Selectable)
Video De-emphasis	NTSC/PAL/Bypass (CCIR 405)
Video Low Pass Filter	3.9, 4.5, 4.75 and 5.6MHz (Field Selectable)
Frequency Response:	\pm 0.25 dB (10 Hz to video filter selected)*
Baseband Response:	\pm 0.5 dB (10 Hz to 8 MHz)*