

MP7200

RF Recorder / Player

Idea

ADIVIC RF Recorder, MP7 SERIES is an exquisite RF- engineering tool for both field testing and performance testing. MP7200 is engineered for all existing RF communications and all modulation schemes, analogue and digital. MP7200 is capable of RF signal real-time record and play.

All of ADIVIC MP7 Series, with its small size and light weight design, can be easily for field testing. All MP7 Series adopt user-friendly TFT-LCD touch screen. MP7200 RF recorder and player system covers the frequency spectrum from 25MHz to 2.7GHz. It satisfies various wireless communication applications. The RF recorder can support a large range of digital or analog modulation signals in the frequency spectrum. The RF signal can be stored in a large size HDD. Those all can be analyzed via MATLAB software or played RF signal by MP7200 or MP9000 RF player.

With the bandwidth of acquisition 25MHz (20MHz Guaranty Bandwidth), it allows the users to record and analyze the wanted channel signal, adjacent channel signal, noise/fading signal and any distortion signals accordingly.

Introduction

The RF recorder incorporates a hardware capture module covering the frequency spectrum from 25MHz to 2.7GHz.

MP7200 has two RF input interfaces which can support active and passive antenna types. The swap HDD and eSATA interface can easily extend the storage ability.

Each recording can be easily named via the friendly UI. Remote control function can be operated via Ethernet RJ45 interface. MP7200 RF player also supports segment play function.

Users can set any start and stop points in any RF file to play.

Design

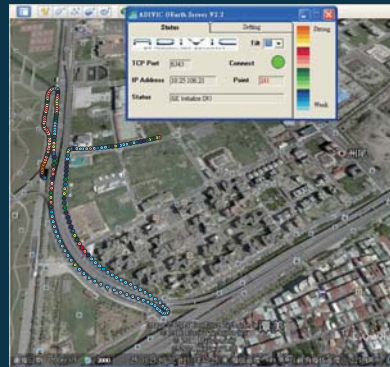


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Location Function

GPS location log function can support the recordings of the GPS NEMA. The data can be transmitted via Ethernet to other PCs installed with Google Earth software and ADIVIC's utility software, and users can freely define the power level color class and the rate of GPS location update according to each recording length and mobile speed. It helps users to see clearly the geographical condition via Google earth. Users can free download Google Earth software from Google web. Please notice that PCs need to be connected to the Internet to get the Google Earth map data during operation.

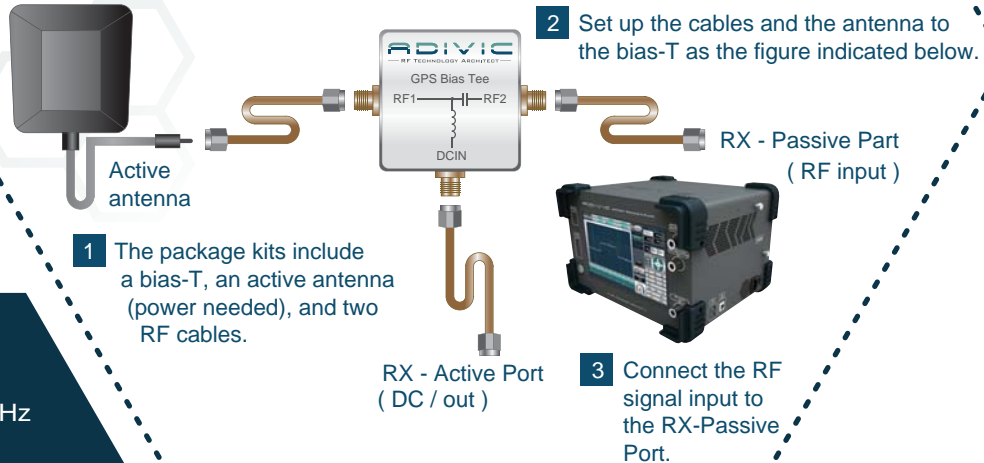


UI

GPS Signal Recorder Scenario

ADIVIC, GPS Option allows MP7200 to record low-power-level signals, such as GPS signals with its package kits. An active antenna is used in this case, however via the passive input port to the recorder in order to get the maximum gain. The following instructions will guide you to set up the kits properly :

The GPS Option Package Setup Instruction



- FREQUENCY COVERAGE: 25MHz to 2.7GHz
- ADJUSTABLE BANDWIDTH FROM 1MHz TO 25MHz (20MHz Guaranty BW)
- SAMPLE RATE: 100MS/s
- RESOLUTION: 14 BIT
- NOISE FLOOR: < -165dBm/Hz
- CONVENIENT MOBILE FIELD TESTING SOLUTION FOR DTV AND GPS
- SPECTRUM ANALYZER / Marker / Channel Power Measurement
- eSATA INTERFACE FOR EXTERNAL STORAGES.
- SWAP INTERNAL SATA 2.5" SSD (300GB x2) or HDD(500GB x 2)
- SUPPORTS GPS NEMA DATA LOGGING RECORDING and power color marker
- 10.2" TOUCH SCREEN
- RF FILE FORMAT SUPPORT MATLAB SOFTWARE ANALYZER
- FILE SEGMENT PLAY FUNCTION
- Remote control

Feature

Worldwide Radio Broadcasting Standard

FM/RDS/TMC
 IBOC - HD Radio
 Satellite Radio
 DAB

Worldwide TV Broadcasting Standard

DVB-T/H
 DVB-T2
 DVB-SH
 CMMB
 ISDB-T
 ISDB-T_{SB}
 MediaFLO

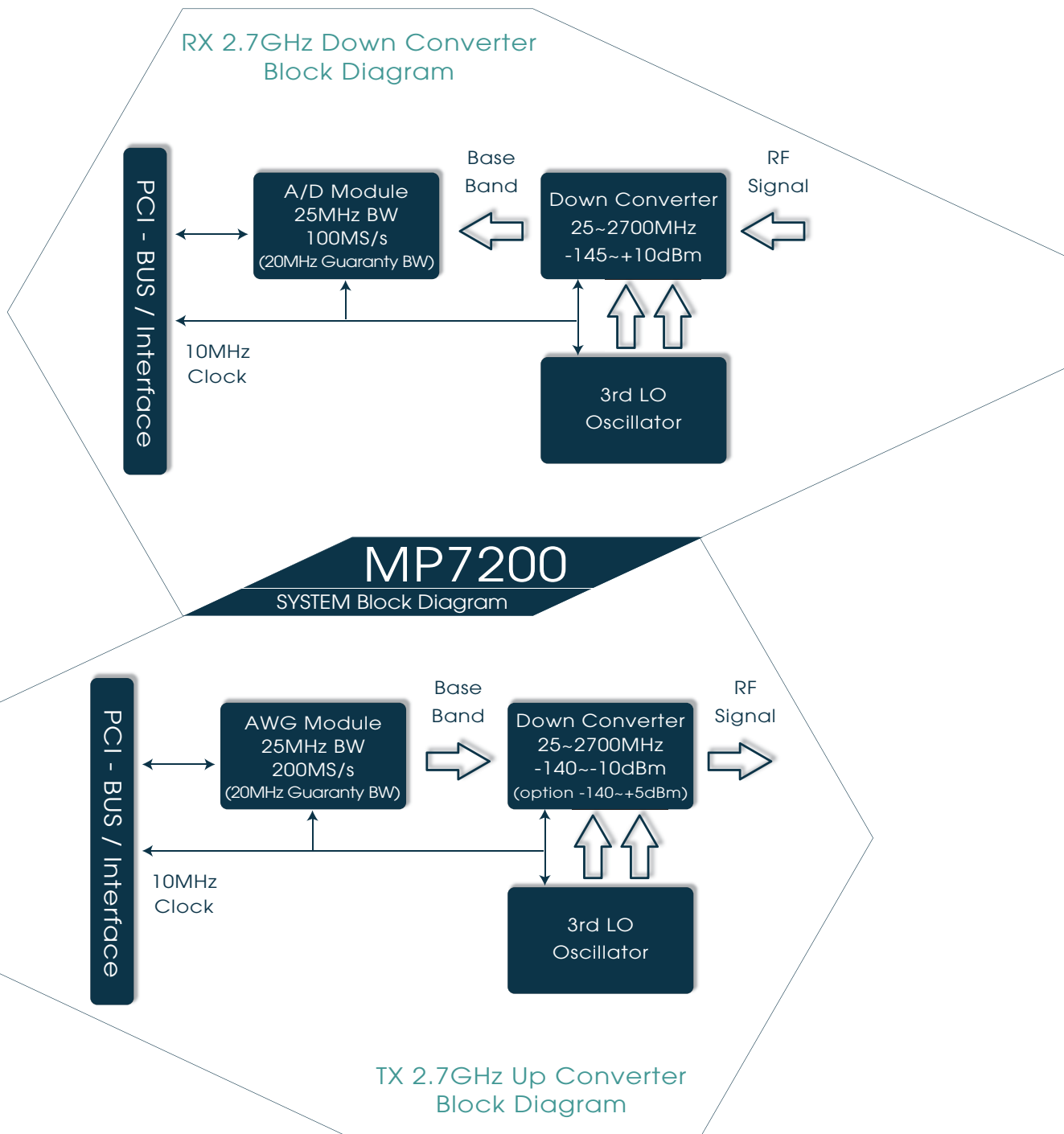
Worldwide Navigation Standard

GPS
 CNSS
 CLONASS
 GALILEO

ATSC-MH
 T-DMB
 DVB-C
 DVB-C2
 OPEN Cable
 ATSC
 DTMB
 NTSC
 PAL
 SECAM

Standard

MP7200
 RF Recorder / Player



	MP7100	MP7200	MP9000
Model	RF Recorder/IF Player	RF Recorder/Player	RF Player
TFT Touch Screen	Capacity	Capacity	Resistive
Frequency	48MHz-1GHz 1575.42MHz	25MHz-2.7GHz	25MHz-2.7GHz
Bandwidth	24MHz(20MHz Guaranty BW)	25MHz (20MHz Guaranty BW)	25MHz (20MHz Guaranty BW)
Record	◆	◆	
Play	IF 36/44MHz -20dBm	◆	◆
Segment Play		◆	◆
SAI* SSD/HDD	◆		
SWAP SSD/HDD	◆	◆	
Power	DC 9V to 36V 120W	AC 100-250V	AC 100-250V
Size	L:27.8xW:24.2xH:23.6 cm	L:34.6xW:30.2xH:22.9 cm	L:36 x W:34 x H:20 cm
Weight approx	9 Kgw	14.3 Kgw	17 Kgw

*Shock Absorber of Independent HDD Mechanism

Specification

MP7200 2.7 GHz RF Signal Analyzer Specifications

Frequency		
Frequency range25MHz to 2.7 GHz	
Real-time bandwidth.....	1~20 MHz(20MHz Guaranty BW)	
Frequency resolution.....	1KHz step minimum	
Resolution bandwidth (RBW).....	Fully adjustable (100 Hz to 3MHz)	
Warm-up time (typical).....	30 minutes	
Temperature stability	±20 ppb maximum	
Initial achievable accuracy.....	±50 ppb maximum	
Aging		
Per year.....	±100 ppb maximum	
Per day.....	±1 ppb maximum	
Initial achievable accuracy.....	±50 ppb maximum	
Spectral purity		
Phase Noise@1 kHz offset, 1GHz.....	<-80 dBc/Hz	
RF input Spurious Response.....		<-90 dBm
Noise Density		
Passive Port (Gain : 40dB/100MHz).....	<-165dBm/Hz	
Active Port (Gain : 20dB/100MHz).....	<-145dBm/Hz	
Amplitude(Passive Port)		
Input level Accuracy (15 to 35°C).....	<+/- 1dB	
Input signal range@CW mode.....	-145 dBm~-30 dBm	
Gain Range.....	0~+40 dB@ 5dB step	
Input level resolution.....	0.01dB	
Maximum DC input.....	±50 VDC	
Group delay.....	30 ns Typical	
Amplitude (Active Port)		
Input level Accuracy (15 to 35°C).....	<+/- 1dB	
Input signal range @CW mode.....	-135 dBm~+10 dBm	
Gain Range.....	-5~+20 dB@ 5dB step	
Input level resolution.....	0.01dB	
DC Voltage Output Range.....	0~+10V@0.1Vstep	
Group delay.....	30 ns Typical	
RF input		
Passive RF input	50ohm , AC-coupled N female	
Active RF input	50ohm , DC-coupled N female	
IF Band		
Resolution.....	14 bits	
Sample rate.....	100MS/s	
Storage		
Storage.....	640 GByte	
Calibration		
Calibration	1 year	
Environment		
Operating temperature	0 to +50°C	
Relative humidity.....	10 to 90%	
Storage temperature	-20 to 70 °C	
Relative humidity.....	5 to 95%	

MP7200 2.7 GHz RF Signal generator Specifications

Frequency Characteristics	
Frequency range25MHz to 2.7 GHz
Real-time bandwidth (Digital vector modulation bandwidth)	20 MHz maximum
Frequency resolution.....	1KHz step minimum
Warm-up time (typical)	30 minutes
Temperature stability.....	±20 ppb maximum
Per year.....	±100 ppb maximum
Per day	±1 ppb maximum
Initial achievable accuracy.....	±50 ppb maximum
Spectral purity	
Phase Noise@1KHz offset, 1Ghz.....	<-80 dBc/Hz
Spurious Responses	
Second harmonic.....	< -40 dBc
Output third-order distortion (IMD) (two -13 dBm tones, >200 kHz apart).....	-70 dBc Typical
LO leakage.....	<-80dBm
RF Output Characteristics	
Output power range	-145 dBm to -10 dBm
Amplitude resolution.....	0.1 dB step minimum
Amplitude Accuracy.....	<+/-1 dB -100dBm~-10dBm <+/-2 dB <-100dBm
Output Impedance.....	50 ohm
Overload protection on RF output	
Maximum reverse RF power	1 W maximum
Maximum DC input.....	±50 VDC
Noise Floor@1GHz	
-40dBm output power	<-150dBm/Hz Typical
-50dBm output power.....	<-165dBm/Hz Typical
Flatness	
IF Band(20MHz) flatness.....	1 dB Typical
Group delay.....	30 ns Typical
RF Output	
RF Output.....	50ohm , AC-coupled N female
IF Band	
Resolution.....	14 bits
Sample rate.....	100MS/s
Calibration	
Calibration	1 year
Operating Environment	
Operating temperature	0 to +50°C
Relative humidity.....	10 to 90%
Storage temperature	-20 to 70 °C
Relative humidity.....	5 to 95%
Power	
AC.....	100V to 240V
Mechanical	
Dimensions.....	(L):34.6x(W):30.2x(H):22.9 cm
Weight.....	approx 14.3 kgw

