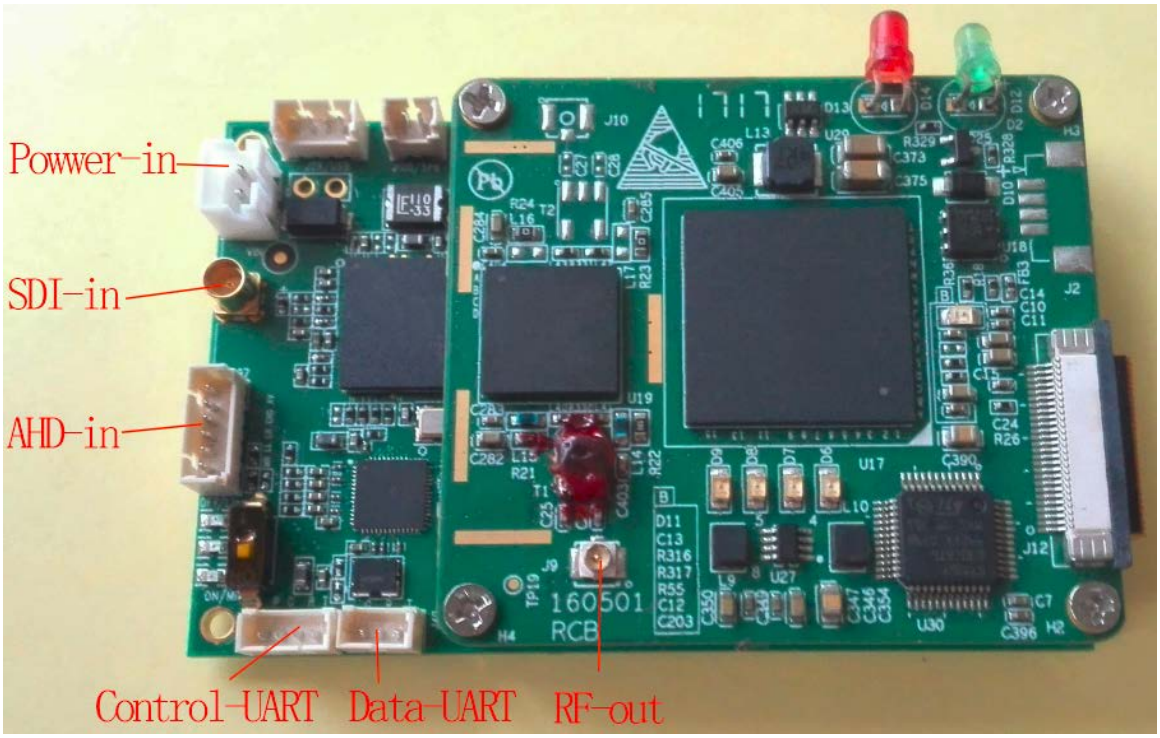
1776 Encoder Modulator COFDM Transmitter Module

-- HD video COFDM transmitter module with SDI/AHD input interface



Our module features SDI/AHD(AV compatible) inputs with COFDM modulation technology and H.265/H.264 encoding that complete video audio transmission in high-speed motion and NLOS (none line of sight) conditions with low latency. Our module consists of two boards(video codec board and COFDM modulation board) with flat cable connection. The module also provides one transparent transmission uart(one way).

Our module can work in different features mode with different firmware which should be specified before it shipped. The default normal features of our module:

- H.265 video compression and COFDM modulation;
- Video input via SDI or AHD interface
- Full HD resolution, 1080p/i @60fps;
- Adjustable working frequency, band width, bitstream rates, RF power, etc.

The default normal features of our transmitter module will be paired with our receiver module. The HD video latency from its inputting of the transmitter to the HDMI screen displaying of the receiver is about 200ms to 250ms.

Specified features implemented with different firmware:

- Normal H.264 video compression; (Paired with our receiver module.)
- Proprietary H.264 video compression only used p-frames for lowest latency;
  (Paired with our receiver module with specified firmware. The video latency from its inputting of the transmitter to the HDMI screen displaying of the receiver is about 50ms to 130ms.)
- Video input via SDI + AHD interface, two channels video compression and transmitted (Paired with our receiver module with specified firmware.)

Specification:

IO

HD Video input	SDI, MMCX Connector
AHD Video input	6PIN PH1.25mm Connector
TTL UART data	3PIN PH1.25mm Connector
TTL UART control	4PIN PH1.25mm Connector
Power in	2PIN PH2.0mm Connector
RF output	IPEX

Modulation

Modulation Formats	COFDM(DVB-T)
Carriers	2K
Bandwidth	Configurable from 1MHz to 8MHz, step by 1KHz
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/32, 1/16, 1/8, 1/4
Constellation	QPSK, 16QAM, 64QAM
Bitrates	0.5Mbps to 31.67Mbps

RF

Frequency Bands	200MHz~2300MHz(other bands can be supported with special manufacturing)
Tuning Step size	1KHz
Power out	Configurable from -93dBm to -5dBm(subject to frequency)

Video and Audio

Video input	SDI or AHD(AV compatible), auto-detected after system start-up
Video formats	1080@60P, 1080@50P, 1080@30P, 1080@25P, 1080@24P, 1080@60I, 1080@50I, 1080@30I, 720@60P, 720@50P, 720@30P, …… 720*480 60I(NTSC), 720*576 50I(PAL) AHD 720P@25P/30P, AHD 1080P@25P/30P
Video Coding	H.265
Audio input	Embedded SDI or AV audio(Specify Mic in/Line in)
Audio Coding	AAC, 16bit, stereo, 32Kbps
Encryption	AES256

*AHD: Analog High Definition

Monitoring and control

Comprehensive setup with our programmer or other device via control UART.

Temperature range

Full specification: 0° to +70°C Ambient Storage: –40° to +80°C

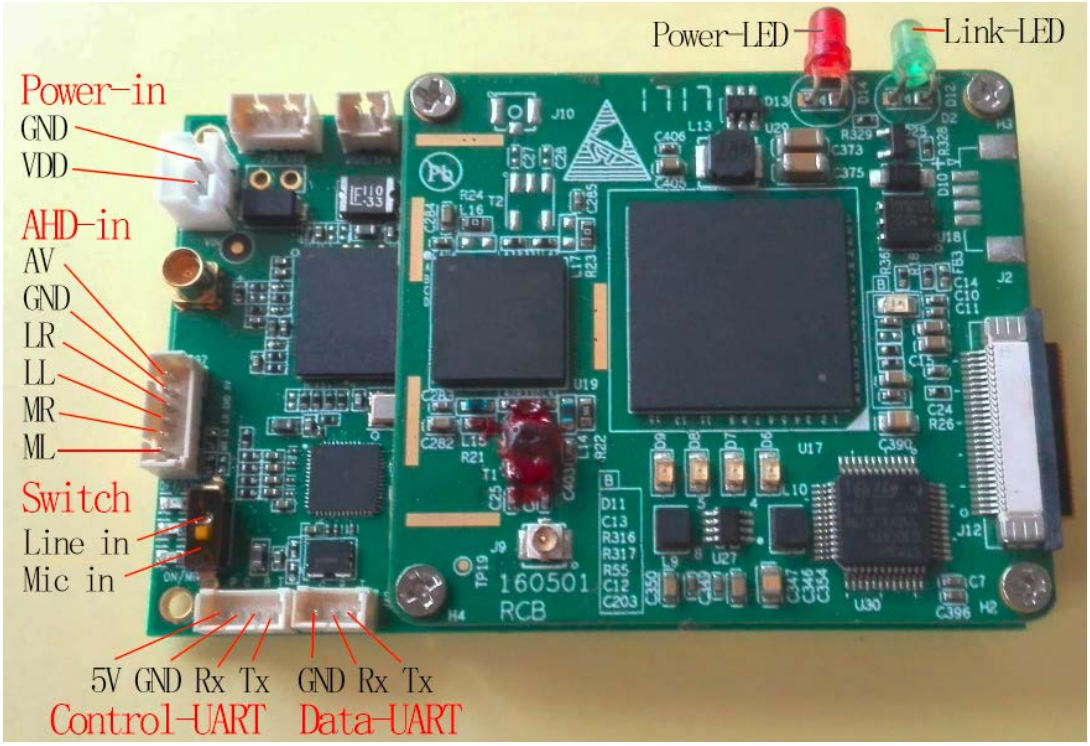
Dimensions

70x45x13mm(not including connectors out of the board)

Power requirements

Input range: 7~24VDC Power consumption: <350mA@12V

Signals description



AHD-in

PIN	Signal
AV	Analog video input
GND	GND
LR	Line in right(Audio)
LL	Line in left(Audio)
MR	Mic in right(Audio)
ML	Mic in left(Audio)

For Mic audio input, turn the Switch to “Mic in” and connect to mic in PINs; For line audio input, turn the Switch to “line in” and connect to line in PINs.

Data UART and Control Uart

TTL, 3.3V signal

Power-LED

Red light when board is powered

Link-LED

Green blinks on transmitting