



IP ASI to ISDB Modulator

User's Manual



Dear clients,

Thank choose Villatel . In order to give better play to the function of your device, we suggest that you take the precious time to read the user manual carefully before connecting and operating the device, so that you can master the use method and use points of the device.

Please keep this manual for future reference.

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1. Introduction

1.1 Product Overview

IPM16A is a cost-effective ISDB modulator developed according to ISDB (EN300744) standard. It has 128*3 IP inputs. After multiplexing and modulating process, it gives 16 ISDB non-adjacent carriers (96MHz~864MHz) output through the RF output interface. To meet customers' various requirements, this device is also equipped with data port for 8 MPTS output over UDP and RTP. This is very adaptable to newly generation DTV broadcasting system.

1.2 Key Features

Support maximum 3*128 IP input (MPTS/SPTS) over UDP and RTP protocol

Support 8 MPTS Output

Support 16 channel ISDB modulating

RF 96~864MHz Any Settings

Support 6 Serial TS Input (Any Multiplex)

Integrated multiplexing and modulating functions

Support accurate PCR adjusting/PID Remapping/PSI/SI rebuilding and editing

Web-based NMS management

1.3 Specifications

Modulation	Standard	ARIB STD-B31
	FFT mode	2K,4K,8K
	Bandwidth	6M
	Constellation	QPSK, 16QAM, 64QAM
	RF out	16 Channels ISDB
	RF frequency	96~864MHz, 1kHz step
	RF output level	-35dBm~-5dBm
	MER	≥40db
	Guard Interval	1/32, 1/16, 1/8, 1/4
IP Input	3ch 128 IP(SPTS/MPTS) input over UDP and RTP, RJ45,1000M/100M, Unicast/Multicast, 6ch ASI input.	
System	LCD/Keyboard operating and web-based NMS support	
	Ethernet software upgrading	
General	Dimension (W*D*H)	440mm×300mm×45mm (Box) 482mm×340mm×45mm (Max) 525mm×375mm×85mm (Pack)
	Temperature	0~40℃(work); -20~80℃(storage)
	Power supply	AC 110V±10% 50/60Hz AC 220V±10% 50/60Hz

1.4 Interface



Number	Interface Overview
1	RF out Frequency Output
2	ASI IN Serial TS Input (Any Multiplex)
3	NMS :Network Management System
4	DATA1 :128 SPTS/MPTS IP input /8 MPTS output DATA2 :128 SPTS/MPTS IP input DATA3 :128 SPTS/MPTS IP input
5	Power Switch

2. Operation

2.1 Installation

Check the possible loss or damage of the equipment during transportation before installing the equipment; Prepare the appropriate environment, connect > to the signal line, connect > to the power line, open the device, >, check the IP address of the network manager, >, adjust the network manager server, connect > to the network manager, check or modify all parameters, and then the device will be normally used after no abnormalities are found in >.

Note 1: the power supply must meet the working requirements of the equipment, such as voltage, frequency and power supply capacity.

Note 2: please observe the environment before the test and pay attention to safety during the test.

2.2 Connect

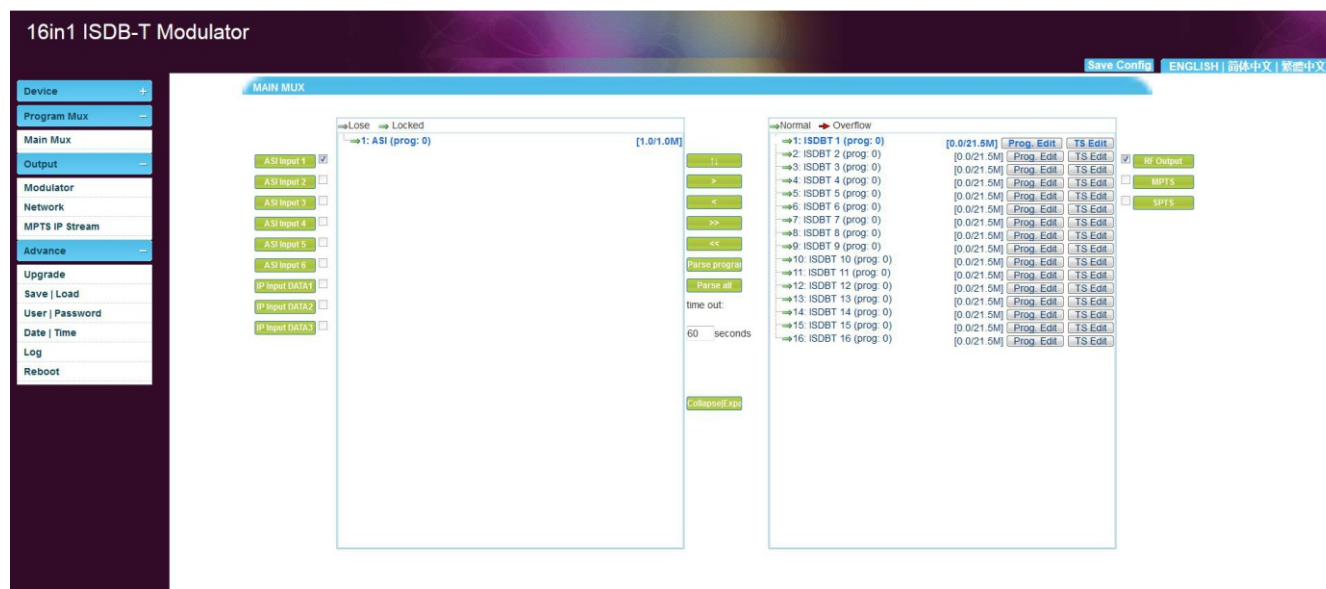
Set the computer and the device IP in the same network segment according to the device network manager address (192.168.0.136)

The IP address of the computer cannot be the same as that of the device

In the address bar of Firefox browser, ENTER: 192.168.0.136 and press "ENTER". ENTER the user name: admin password: admin and ENTER the configuration window of the digital TV modulator.

2.3 Parameter Settings

2.3.1 TS Multiplex Settings



The input interface is on the left and the output interface is on the right

L1-L3 corresponds to three interface boards in the back panel

In the TS stream setting column, parameters of the output channel can be set: stream selection, general parameters, PID transparent transmission. Mainly is carries on the choice to the output program.

In this interface, you can click the "+" button and input the corresponding IP address to add the input program source.

After the program source is added into the device as required, the selected program can be output or deleted through the arrow to the right and left of ">" "<" ">>" "<<".

2.3.2 Modulation Parameter

output channel status, parameter view, modulation mode setting, etc

16in1 ISDB-T Modulator

Device +

Program Mux -

Main Mux

Output -

Modulator

Network

MPTS IP Stream

Advance -

Upgrade

Save | Load

User | Password

Date | Time

Log

Reboot

RF OUT

Channel	Frequency	Status	Bit(Act/Max)	Edit ALL
1	124.000 MHz	●	0.0/21.5 M	Edit
2	224.000 MHz	●	0.0/21.5 M	Edit
3	324.000 MHz	●	0.0/21.5 M	Edit
4	424.000 MHz	●	0.0/21.5 M	Edit
5	524.000 MHz	●	0.0/21.5 M	Edit
6	624.000 MHz	●	0.0/21.5 M	Edit
7	724.000 MHz	●	0.0/21.5 M	Edit
8	824.000 MHz	●	0.0/21.5 M	Edit
9	924.000 MHz	●	0.0/21.5 M	Edit
10	1024.000 MHz	●	0.0/21.5 M	Edit
11	1124.000 MHz	●	0.0/21.5 M	Edit
12	1224.000 MHz	●	0.0/21.5 M	Edit
13	1324.000 MHz	●	0.0/21.5 M	Edit
14	1424.000 MHz	●	0.0/21.5 M	Edit
15	1524.000 MHz	●	0.0/21.5 M	Edit
16	1624.000 MHz	●	0.0/21.5 M	Edit

2.3.3 MPTS IP Stream

MPTS IP output channel status, parameter view, setting, etc

16in1 ISDB-T Modulator

[Save Config](#)

Device +

Program Mux -

Main Mux

Output -

Modulator

Network

MPTS IP Stream

Advance -

Upgrade

Save | Load

User | Password

Date | Time

Log

Reboot

MPTS IP STREAM

Tips:
 1.RTSP can be supported by choosing RTP as the output protocol
 2.RTSP Output format for MPTS1 is as follows rtsp://192.168.2.136:6666/mpts1
 3.RTSP Output format for SPTS1 is as follows rtsp://192.168.2.136:6666/spts1
 4.192.168.2.136 in RTSP output format is the IP address of DATA-1
 5.RTSP Output Protocol must have two channel ports spaced at or greater than 2

General:

Protocol: UDP Set

Channel Info.(Alarm/Active/Total): 0/0/8

Channel	Address	Port	TTL	Enable	Null PKT Filter	Source TS	Out ETH	Bit(Act/Max)	Edit ALL
1	239.2.2.2	2000	128	✗	✓	ISDBT 1[124.000 MHz]	DATA1	0.0/21.5 M	
2	239.2.2.2	2002	128	✗	✓	ISDBT 9[924.000 MHz]	DATA1	0.0/21.5 M	
3	239.2.2.2	2004	128	✗	✓	MPTS 1	DATA1	0.0/120.0 M	
4	239.2.2.2	2006	128	✗	✓	MPTS 2	DATA1	0.0/120.0 M	
5	239.2.2.2	2008	128	✗	✓	MPTS 3	DATA1	0.0/120.0 M	
6	239.2.2.2	2010	128	✗	✓	MPTS 4	DATA1	0.0/120.0 M	
7	239.2.2.2	2012	128	✗	✓	MPTS 5	DATA1	0.0/120.0 M	
8	239.2.2.2	2014	128	✗	✓	MPTS 6	DATA1	0.0/120.0 M	

2.3.4 Network Settings

Set IPTV input IP address and other parameters

4in1 DVB-T Modulator

Save Config

ENGLISH

简体中文

Device

Status

Band

L1(MOD-DVBT 4RF)

L2(MOD-DVBT 4RF)

L3(MOD-DVBT 4RF)

Program Mux

Main Mux

Output

Modulator

Network

MPTS IP Stream

Advance

Modulator Switch

Upgrade

Save | Load

Date | Time

Log

NETWORK

NMS

IP Address:192.168.0.136

Subnet Mask:255.255.255.0

Gateway:192.168.0.1

Web Manage Port:80

MAC Address:60.20.17.04.02.18

Apply

DATA-1

IP Address:192.168.2.136

Subnet Mask:255.255.255.0

Gateway:192.168.2.1

MAC Address:60.30.17.04.02.18

Apply

2.3.5 Configuration

Save or restore the device system configuration, or load other configuration parameters

4in1 DVB-T Modulator

Save Config

ENGLISH

简体中文

Device

Status

Band

L1(MOD-DVBT 4RF)

L2(MOD-DVBT 4RF)

L3(MOD-DVBT 4RF)

Program Mux

Main Mux

Output

Modulator

Network

MPTS IP Stream

Advance

Modulator Switch

Upgrade

Save | Load

Date | Time

Log

CONFIGURATION

Save To Device

Load From Device

Load Default Config

Save To PC

Load From PC

When you change the parameter you should save configuration ,otherwise the new configuration will lost after reboot.

Save

CLEAR CONFIG

Clear current configuration File.Reboot the device,device will enter factory mode.

Clear

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2.3.5 System Upgrade

FIRMWARE

- Tips:
1. Please get firmware (Software.pkg /OS.pkg/Hardware.bin) from the manufacturer, do not make any changes, choose firmware to upgrade.
 2. Do not turn off the power when the equipment is upgraded. Otherwise the equipment will be damaged.
 3. When the upgrade is successful, you need to reboot the machine and the new firmware will work.
 4. upgrade Software.pkg/Hardware.bin will keep about 10 seconds.
 5. upgrade OS.pkg will keep about 1 minutes.
 6. Upgrading requires a very stable network and advises against connecting to the Internet.

Software Version: 3020.1127

Hardware Version: 3.3.0.0

OS: 1.26.1.74G

File:

浏览... 未选择文件。

Upgrade

2.3.6 LOG

Device status information

4in1 DVB-T Modulator

Device

Status

Basic

L1(MOD-DVBT 4RF)

L2(MOD-DVBT 4RF)

L3(MOD-DVBT 4RF)

Program Mux

Main Mux

Output

Modulator

Network

MPTS IP Stream

Advanced

Modulator Switch

Upgrade

Save | Load

Date | Time

Log

LOG

Log Type: [System Log] Auto Refresh: [0]

Export

Clear log

[19700101-00 00 00] device info: start_device
[19700101-00 00 00] device info: create_device
[19700101-00 00 00] device info: modulator_get_fpga_bin
[19700101-00 00 00] device info: modulator_init_data/app/fpga_dvbt bin tar.gz
[19700101-00 00 00] device info: load fpga ok
[19700101-00 00 10] device info: cpu_read_option 0xf
==led_set_check_if_module()==

FPGA version: 514-0x202
FPGA modulator_type: 1-0x1

hard_hide_modulator: 0
--far_open--
set_phy_58e1111() indio 0 read phy id 0xf
read_id_58e1111() phy addr: 0xf id 0
set_phy_58e1111() indio 1 read phy id 0xf
read_id_58e1111() phy addr: 0xf id 0
[19700101-00 00 20] devmod info: device_register_module--key_menu
[19700101-00 00 20] devmod info: device_register_module--system_config
OEM 0 modulator_type_fpga-1
OEM 0 hard_hide_modulator 0
[19700101-00 00 20] system info: dev_info--language 1 - 0
[19700101-00 00 20] devmod info: device_register_module--countdown:1
[19700101-00 00 20] system info: dev_info--language 1 - 0
[19700101-00 00 20] system info: --os_thread_create_user_if_ [0x90410]
[19700101-00 00 20] devmod info: device_register_module--countdown:2
band_init()
band_init() open 0x0
band_read_x0(band_index 0 fd 307) id 0x31
band_read_x0(band_index 0 fd 307) ver 0x0
band_register_module(band_index 0) BAND_ID_ASI_2H_4DVBT
band_init() band_index 0 ext id 0x31
band_init() open 0x1
band_read_x0(band_index 1 fd 309) id 0x31
band_read_x0(band_index 1 fd 309) ver 0x0
band_register_module(band_index 1) BAND_ID_ASI_2H_4DVBT
band_init() band_index 1 ext id 0x31
band_init() open 0x2

3. Trouble Removal

3.1 Prevention Measures

- 1) Put equipment in the environmental temperature 0 °C ~ 45 °C, other conditions meet the requirements of operating range.
- 2) Check that the supply voltage is within the specified range and that all connections are correct.
- 3) Check that the supply voltage is within the specified range and that all connections are correct.
- 4) Please do not switch the machine frequently (switch the machine at least every 10 seconds or more).

3.2 Common Problems

Common problems	The solution
boot failure	Check that the input voltage and connection of the power supply operating range are correct
signal failure	Check whether the signal source is normal. Check that the cables are properly connected
Program Scan failure	The program name and program number of the output signal are manually added in the TS stream setting

4. Packing list

Number	Name	Count	Comment
1	IPM16A Modulator	1	
2	Power line	1	
3	ASI	1	