

User Manual



H-1SDI-QAM-IPLL



H-2SDI-QAM-IPLL

1/2 SDI to QAM Modulators and IPTV Streaming Encoders

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Chapter 1 Product Introduction

1.1 Outline

H-1/2SDI-QAM-IPLL series products are THOR's all-in-one devices which integrate encoding, multiplexing and modulation to convert V/A signals into digital RF output. It adopts inner drawer-type structural design which greatly facilitates the change of encoding modules (HDMI/CVBS/SDI/YPbPr/...) as needed. To meet customers' various requirements, H-1/2SDI-QAM-IPLL is also optionally equipped with 1 ASI input for re-mux and 2 ASI out ports. MPTS and SPTS output are available via the gigabit DATA port.

With its various inputs available, our H-1/2SDI-QAM-IPLL series products are widely used in public places such as metro, market hall, theatre, hotels, resorts, and etc for advertising, monitoring, training and educating in company, schools, campuses, hospital... It's a good choice to offer additional info channels.

1.2 Main Features

- HDMI/CVBS/SDI/YPbPr... inputs(Now only HDMI and SDI board are available)
- 1*ASI in for re-mux and 2 ASI out ports(optional);
- MPEG2 HD/SD & MPEG4 AVC H.264 HD/SD video encoding
- 2* channels in (19" rack case)
- MPEG4-AAC; MPEG2-AAC; MPEG1 Layer Hand Dolby Digital AC3 2.0 audio encoding
- Dialog Normalization
- Support CC (closed caption) for SDI board
- Support low delay encoding mode(SDI and HDMI board)
- Support PSI/SI editing
- Support PID re-mapping
- Digital RF out (DVB-C/T/ATSC/ISDB-T RF Optional);
- IP out via the gigabit data port
- LCN (Logical Channel Number) support for DVB-C/T/ISDB-T modulating mode
- VCT (Virtual Channel Table) support for DVB-C/ATSC modulating mode
- Modular design, pluggable encoding modules
- LCD display, Remote control and firmware
- Web-based NMS management; Updates via web



1.3 Technical Specifications

		T (UDMI*1(the other	is boolaup)				
HDMI Encoding Input		Input		is backup)				
		Encoding	MPEG2; MPEG4 AVC/H.264					
		Bitrate	1-19.5Mbps					
		Resolution	1920*1080_60P.1	920*1080_50P.				
		1100010000	(-for MPEG4 AVC/H 264 only)					
	Video		1920*1080_60i_10	920*1080_50i				
			1280*720_60p_12	80*720_50P				
			720*480_60i_720*	720*480 60i, 720*576 50i				
HDMI1 HDMI2		Low Delay	Normal Mode 1 N	Normal Mode 1 Mode 2				
		Chroma	4.2.0	10402				
		Aspect Ratio	16.9.4.3					
		Aspeet Ratio	MPEG1 Laver II:N	IPEG 2-AAC: MP	EG 4-AAC			
		Encoding	and Dolby Digital AC3 2.0					
	Audio	Sampla rata	19VU-7					
		Ditroto	48KHZ	(/2201-hma				
		Encoding	MPEG2: MPEG4	VC/H 264				
SDI Encoding Input		Input	SDI*1	W C/11.204				
		Bitrate	1-19.5Mbps					
		Resolution	1920*1080 60P. 1920*1080 50P. (-for MPEG4					
			AVC/H.264 only)					
	Video		1920*1080_60i, 1920*1080_50i,					
SDIN			1280*720_60p, 1280*720_50P					
			720*480_60i, 720*	576_50i				
		Low Delay	Normal, Mode 1, M	1ode 2				
		Chroma	4:2:0					
		Aspect Ratio	16:9,4:3					
		Encoding	MPEG1 Layer II,N	/IPEG2-AAC, MP	EG4-AAC			
	Audio	G 1 /	and Dolby Digital A	AC3 2.0				
		Sample rate	48KHZ	(2201-has				
		Standard	$183 \wedge (DVB_{-}C)$ 192/230	320k0ps				
		RF frequency	50~960MHz, 1KHz	50~960MHz, 1KHz step				
		RF output level	-20~+3dbm, 0.1db step					
		Symbol rate	3.000~9.000Msps adjustable					
Modulation	DVB-C	RF Out	4*DVB-C carriers	combined output				
			J.83A	J.83B	J.83C			
		Constellation	16/32/64/128/256	64/ 256 QAM	64/ 256 QAM			
		D 1 111	QAM	01				
		Bandwidth	8M	6M	6M			
		Local interface	LCD + control butt	ons				
		Remote	Web NMS	0115				
General		management						
General			2 ASI out optional	(BNC type, same	one TS, mirror			
	System	Stream Out	as MPTS or SPTS)					
			IP (4 MPTS & 2 SF	PTS) out over UDI	P, RTP/RTSP			
		DATA Port	1000M					
		NMS interface	RJ45, 100M					
		Language	English	0.11				
	Physical	Power supply	100~240VAC, 50/6	UHZ				
	Specific	Onemati	482*242*44mm					
		Operation	0~45 C					

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temperature

ation



1.4 Principle Chart



1.5 Appearance and Illustration

Front Panel Illustration:

	Thor 4 SDI HD Encoder-RF Modulator IP: 192. 168. 8. 136 P1: 12. 62H P2: 12. 61H	NMS	DATA	Power ©	 Lock1 Lock2 Lock3 Lock4 		Enter	Aenu Lock	
	¥	♦	↓	T	Ţ		↓	\downarrow	
	1	2	3	4	5	6	7	89	
1.	LCD Screen								
2.	NMS Port								
3.	DATA Port								
4.	Power and Alarm Indicators								
5.	Lock 1 and Lock 2: SDI input locking status; Lock 3: ASI in locking status. Lock 4: useless								
6.	. Up and Down, Left and Right Buttons								
7.	. Enter Button: for confirm								
8.	Menu Button: for back step								
9.	Lock Button: To Lock the screen	ı/ca	ncel t	he lock	stat	e			

Rear Panel Illustration:





Chapter 2 Installation Guide

2.1 Acquisition Check

When users open the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

- Encoder Modulator
- Power Cord
- Ground lead

If any item is missing or mismatching with the list above, please contact local dealer.

2.2 Installation Preparation

When users install device, please follow the below steps. The details of installation will be described at the rest part of this chapter. Users can also refer rear panel chart during the installation.

The main content of this chapter including:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing Encoder Modulator
- Connecting signal cables
- Connecting communication port (if it is necessary)

2.2.1 Device's Installation Flow Chart is Illustrated as following:



2.2.2 Environment Requirement

ltem	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, the distance between 2 rows of machine frames should be 1.2~1.5m and the distance against wall should be no less than 0.8m.

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Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: 1X10 ⁷ ~1X10 ^{10Ω} , Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/m ²)						
Environment Temperature	5~40°C(sustainable), 0~45°C(short time), installing air-conditioning is recommended						
Relative Temperature	20%~80% sustainable 10%~90% short time						
Pressure	86~105KPa						
Door & Window	Installing rubber strip for sealing door-gaps and dual level glasses for window						
Wall	It can be covered with wallpaper, or brightness less paint.						
Fire Protection	Fire alarm system and extinguisher						
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC power 220V 50Hz. Please carefully check before running.						

2.2.3 Grounding Requirement

- All function modules' good grounding designs are the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Coaxial cable's outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.
- Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm².

2.2.4 Frame Grounding

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The area of the conduction between grounding

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wire and grounding strip should be no less than 25mm².

2.2.5 Device Grounding

Connecting the device's grounding rod to frame's grounding pole with copper wire.

2.3 Wire's Connection

The grounding wire conductive screw is located at the right end of rear panel, and the power switch, fuse, power supply socket is just beside ,whose order goes like this, power switch is on the left ,power supply socket is on the right and the fuse is just between them.

• Connecting Power Cord

User can insert one end into power supply socket, while insert the other end to AC power.

• Connecting Grounding Wire

When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω .

Caution:

Before connecting power cord to this Encoder Modulator, user should set the power switch to "OFF".

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Chapter 3 Keyboard Operation

This Encoder Modulator's front panel is user-operating interface. Before operating, users can decide whether directly use the default setting or customize the input and output parameters setting. The detailed operations go as follows:

Keyboard Function Description:

ENTER: Activating the parameters which need modifications, or confirming the change after modification.

MENU: To cancel presently entered value, resume previous setting and return to previous menu.

LEFT/RIGHT: To move the "▶" to choose or set the parameters.

UP/DOWN: To modify activated parameter or page up/down when parameter is inactivated.

LOCK: To Lock the screen / cancel the lock state. After pressing lock key, the system will question

the users to save present setting or not. If not, the LCD will display the current configuration state.

At the "Factory Configuration" page, user can press "ENTER" key to restore the factory default configuration.

3.1 LCD Menu Tree







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Chapter 4 WEB NMS operation

Users can not only use front buttons for setting configuration, but also control and set the configuration in computer by connecting the device to web NMS Port. User should ensure that the computer's IP address is different from this device IP address; otherwise, it would cause IP conflict.

4.1 login

The default IP of this device is 192.168.0.136. We can modify the IP through the front panel.

Connect the pc and the device with net cable, and use ping command to confirm they are on the same network segment.

I.G. the PC IP address is 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 0 to 255 except 252 to avoid IP conflict).

Use web browser to connect the device with PC by inputting the Encoder & Modulator's IP address in the browser's address bar and press Enter.

It will display the Login interface as Figure-1. Input the Username and Password (Both the default Username and Password are "admin".) and then click "LOGIN" to start the device setting.

	×
0	http://192.168.0.136
Login :	admin
Pass :	•••••
	Log in Sign in



4.2 Operation

Status

When we confirm the login, it displays the Status interface as Figure-2.

Level 4 v



Encoder Modulator		
to use Web Management		
Summary		
► Status	System Information	
Parameters	ojstem monadon	
Encoder 1	Software Version:	02.00.34 Build 1.00 Oct 13 2022
Encoder 2	Hardware Version:	02.00.27
► Modulator	Web Version:	1.05
► TS Config	System Version:	1.00.00.01
Output Settings	Product ID:	00354200-00000013-00000000-00000000
System	Uptime:	0 Day-00:08:52
► Network	Temperature:	48.97 Degree Celsius
Password	Vccint	997.56 mV
Configuration	VccAux:	1805.42 mV
Firmware	VccBRam:	998.29 mV
Date Time	Feedback.	
- Log		

Figure-2

Encoder 1

From the menu on left side of the webpage, clicking "Encoder 1", it displays the information of

the program	ns from the	e 1 st encodi	ng hoard as Fig	ire-3		Leve	14 v 12.2
the program			ing bound up i ige	ai C 5.		Leve	13
			192 Kbps	v		Leve	13.1
Encoder Modu	lator		64 Kbps			Leve	13.2
	nator		96 Kbps	Picture	CC Off	✓ Leve	
> Management			128 Kbps	Field	EIA 508	Leve	14.1
	Encoder	- SDI HD	192 Kops 256 Khos	Distance	Line 21	Leve	14.2
Summary			320 Kbps	Picture	CC Off	Leve	15.1
► Status	Mpeg2	Video					
Parameters	H.204	Video Format:	Mpeg2 v			X	General Settings for the input
Encoder 1	Auto 🗸	Aspect Ratio:	Auto 🗸	Field/Picture Enco	ding: Picture 🗸		
► Modulator	Auto	Video Cache:	On v	CC Switch:	CC 011 V		programs: Users can edit any item
TS Config	4:3	Video Bitrate:	14.0 Mbps (1.0 ~ 19.5 Mbp	s) Low Delay:	Normal 🗸		programs. Osers can cart any riem
Output Settings	16:9	H.264 Profile:	Main Profile v	H.264 Level:	Level 4	i 🛶	listed as needed Ticking Share
System		Out Resolution:	1920*1080_60i 🗸 Auto 🗹	Share PCR PID:		1 1	listed as needed. Ticking share
▶ Network	Main Profile v	PCR Interval:	20 (1 ~ 500ms)			1	
► Password	Automatic	Audio					PCR PID means Video PID and
Configuration Eirmware	Baseline Profile	Formati	(Hana)	Ditrata	4001/hee	1	
Date Time	Main Profile	Format:	Mpeg2 V	Bitrate:	192 Kops V	I.	PCR PID are the same one.
►Log	High Profile	Audio Grieup:	Group 1	Audio Pali:	Pair1 V		
			(0 ~ 400%)	Addio Delay.	0 (-1000	Pair 1	~
	Mpeg2 v	Status				Pair 1	
	Mpeg2	Encoder Chip Version	: 2.7.3.211 Input	Lock:		Pair 2	
	Mpeg2 AAC	Input Information:	1920x1080 501 Bitrat	14.653 Mbps			
	Mneg4 AAC	Encode Status:	Completed				
	AC 3	1/ i/				Encoding	status monitoring:
	100	Bitrate: 0.000Mb	ps		· · · · · · · · · · · · · · · · · · ·	 Internet 	
		22.000M 19.800M				Signal lo	cking, input resolution, encoding
	Group 1	17.600M					
	Group 1	13.200M				bitrate etc	
	Group 2	11.000M					
	Group 3	6.600M					
	Group 4	4.400M 2.200M					
		0.00014					
		/		After paramet	ers setting, clicking	"Apply" to ma	ike the
				r			Appy
	- <u> </u>			setting take et	fect		
				setting take ei	1001.		
Out Res	solution:						
	1920*1	1080_60i Auto					
dio	1920*1	080_50i					
Format	1440*1	080_60i	N				
connau	1280*7	20 60p	Not ticking "Aut	o", users can set	an output resolutio	n not	
Bitrate:	1280*7	20_50p					
	720*48	0_60i	higher than the ir	put resolution.			
tus	/20*5/	0_001					

Figure-3

Low Delay setting

This encoder modulator can achieve the low delay from encoding side to STB decoding side. User can configure the low delay option accordingly in the Web GUI as Figure-4:



Vide	0							
	Video Format:	Mpeg2 v					Normal	~
	Aspect Ratio:	Auto 🗸		Field/Picture Encoding:	Picture v		Mode 1	
	Video Cache:	On 🗸		CC Switch:	CC Off v		Manual	
	Video Bitrate:	14.0	Mbps (1.0 ~ 19.5 Mbps)	Low Delay:	Manual v			
	DTS Delay:	200	(1 ~ 500)	GOP Bframe:	2	(<= 3)		
	GOP Pframe:	4	(<= 6)					
	H.264 Profile:	Main Profile 🗸 🗸		H.264 Level:	Level 4 v)		
	Out Resolution:	1920*1080_60i v	Auto 🗹	Share PCR PID:				
	PCR Interval:	20	(1 ~ 500ms)					



There are 4 low delay options:

- 1. Normal: to disable the low delay function.
- 2. Mode 1: to activate the low delay function in the default Mode 1 configuration.
- 3. Mode 2: to activate the low delay function in the default Mode 2 configuration.
- 4. **Manual:** to configure DTS Delay, GOP B frame and GOP P frame to get a low delay result accordingly.

The delay is mainly affected by the different combination of **Video Format**, **Video Bit-rate**, **Low delay Mode** and **the Resolution** of signal source etc.

NOTE: The delay duration will also be impacted as the decoding performance of the STB side change. Users need to apply a well-performed STB or other decoding terminals to achieve a low delay.

Encoder 2

Similarly, from the menu on left side of the webpage, clicking "Encoder 2", it displays the information of the programs from the 2^{nd} (SDI) encoding board. In this example. SDI 2 has no signal input.



Web Managen							
NF							
Ene	oder - SDI HD						
ters	Video						
er 1		(17)					
ler 2	Video Format:	Mpeg2	~				
ator	Aspect Ratio:	Auto	*	Field/Picture Encoding:	Picture	~	
t Settings	Video Cache:	On	~	CC Switch:	CC Off	~	
	Video Bitrate:	14.0	Mbps (1.0 ~ 19.5 Mbps)	Low Delay:	Normal	×	
	H.264 Profile:	Main Profile	~	H.264 Level:	Level 4	v	
rk	Out Resolution:	1920*1080_601	Auto	Share PCR PID:			
vord	PCR Interval:	20	(1~500ms)				
uration	(ALCONDANC)						
Time	Audio						
	Format:	Mpeg2	~	Bitrate:	192 Kbps	×	
	Audio Group:	Group 1	×	Audio Pair:	Pair 1	~	
	Audio Gain:	100	(0 ~ 400%)	Audio Delay:	0	(-1000 ~ 1000ms)	
	Status						
	Encoder Chip Versio	on: 2.7.3.211	Input Lock:	•			
	Input Information:	Unknown	Bitrate:	0.000 Mbps			
	Encode Status:	Standby					
	Bitrate: 0.000M	bps					
	22.000M						
	19.800M						
	17.600M						
	15.400M						
	13.200M						
	11.000M						
	8.800M						
	6.600M						
	3 200M						
	0.000M						

Figure-5

TS Config

Click "TS Config", it will display the encoded program information as Figure-6. Users can parse and multiplex encoded programs in this interface.

Encoder Modulator	Output TS 1	
welcome to use Web	Output TS 3	
Summary TS Config	Output TS 4	
Parameters Encoder 1 Encoder 2	S1- Stream Select General	
► Modulator →Not Locked → L ► TS Config ⊕ →1: Encoder 1 () ● Output Settings (a) + 2 (1) (1) √-1 System a) →2: Encoder 2 ()	ocked rog: 1/1) [14.7/17.1M] 01 orog: 0/1) [0.0/0.0M]	
Network Password Configuration Firmware Distribution		Refresh Popl
► Log		(180
		Al Isput Al Output
Parse program	ime out: 60 seconds	



Output TS 1/2/3/4 represents the 4 carrier outputs and 4 MPTS out. Users can configure different program group for each carrier output as needed.

 $\ensuremath{\overline{\mathsf{CA}}}\xspace$ Filter : To enable/disable the CA filter

✓ PID Remap: To enable/disable the PID remapping

Refresh Input To refresh the input program information



Refresh Output To refresh the output program information

Select the wanted input program(s) firstly and click this button to transfer the selected program(s) to output.

Cancel the multiplexed programs from the output area after your program selection.

All Input To select all the input programs

All Output To select all the output programs

Parse program To parse programs time out 60 seconds time limitation of parsing input programs

Encoder Modulator			
Summary Status Parameters Encoder 1 Encoder 2 Modulator FTS Config Output Settings System Network Password Configuration Frimware Date Time Log	Output TS 1- Output TS 1- Program Information Program From Input: Service Name: Program Number: Major Channel Number: Major Channel Number: Source Id: Short Name: Logic Channel Number: Service Provider: Service Provider: PINT PID: PCR PID: MPEG-2 Video PID: MPEG-2 Audio PID:	Stream Select General CH1_Encoder 1 [101] [1 [1001 [1 [1 [1 [bx01 [1 [bx020 [bx021 [bx023 []	[close] [close]
		_	

Figure-7

General

Click "General" from the menu to set Character Encoding option according to the program name language, NIT and VCT etc as Figure-8.

Encoder Modulator					
anagement					
Summary Status	TS Config				
Parameters Encoder 1 Encoder 2	Output TS 1+	Stream Select General			
Modulator TS Config	Stream				
Output Settings System	Character Encoding: TS ID:	NORMAL V NORMAL UCS-2	SDT Insert: ON ID:	1	
Network Password Configuration	NIT NIT Insert:	GBK ISO-8859-5			
Firmware Date Time	VCT				
►Log	VCT Insert: VCT Mode:	CVCT v	Modulation Mode: Carrier Frequency:	4 500.000 (30-1000MHz)	
					Apply

Figure-8



Set Web Insert for NIT Insert and Click "+" from this page, it will display the screen as Figure-9 where it requires to add NIT descriptor. Please follow your configuration in Modulator page to edit the NIT descriptor.

Encoder Modul	ator			1			
ement					NIT Descriptor	[cl	ose]
Summary Status Parameters Encoder 1 Encoder 2 Modulator T5 Config	TS Config Output TS 1- Stream	Stream Select General			TS ID: ON ID: Frequency: Constellation: Symbol Rate: FEC Inner: FEC Outer:	[1] [4 50 000)/MHz [16 0/AM ↓ [8875 Ksps [17 canv ↓ not outer FEC ↓	
Output Settings	Character Encoding	NORMAL V	SDT Insert:			Add Ck	se
System	TS ID:	1	ON ID:		-		
Network Password	NIT						
Configuration Firmware Date Time Log	NIT Insert: Private Data: Network Name: Version Number:	Web insert Ø (0x00000000	Network ID: Version Mode: LCN Mode:	1 Automatic v European v			
	Index TS	D ON ID Frequency	Constellation	Symbol Rate 📑 🏦			
	VCT						
	VCT Insert: VCT Mode:	CVCT V TVCT CVCT	Modulation Mode: Carrier Frequency:	4	Hz) Insert VCT in	J.83B case.	
						Apply	

Figure-9

Modulator

This unit is equipped with 4 DVB-C frequencies output. User can configure the modulation parameters of the 4 carrier outputs by clicking the \checkmark .

expected by the second	Modulator Center Frequency Level(All Carriers) # 1	: 662 000 MHz : 6.0 dBm Frequency 650 000 MHz	Standard: J83A(DVB-C Channel Info-(Alarm/Ar Constellation 64 QAM	Standard: Level(CH Carriers) Channe Erable: Start Frequery Bandwidth: Constelation: Symbol Rate 6875 Kaps	UBSA(0VB-C) √ 0 (20 - 43 dBm) 0 50000 (50 - 960 MHz) 00000 (50 - 960 MHz) 8000 80000 (50 - 960 MHz) 8000 Kapa) 8000 5000 Kapa) 8000 5000 Kapa) 8100 BHt(Act/MA • 14.7/38.0	J.338 J.83C
welcome to use mary atus motors coder 1 coder 2 doductor S Confg utput Stattings en en twork assword onfiguration mmare g	Modulator Center Frequency Level(All Carriers) # 1	: 662 000 MHz : 6.0 dBm Frequency 650 000 MHz	Standard: J.83A(DVB-C Channel Info.(AlarmiAr Constellation 64 QAM	Constellation: Symbol Rate: tive/Total]: 0/4/4 Symbol Rate 6875 Ksps	Es QAM	ax /
welcome to use mary matus meters coder 1 coder 2 dulator Config tput Settings sm twork sseword onfiguration mware ie Time }	Modulator Center Frequency Level(All Carriers) 1	: 662.000 MHz : 6.0 dBm Frequency 650.000 MHz	Standard: J.83A(DVB-C Channel Info.(AlarmiAr Constellation 64 QAM	tive/Total]: 0/4/4 Symbol Rate 6875 Ksps	Bars (2000 - 9000 Kaps) Juster Case Status Bit(Act/M 14.7/38.0 14.7/38.0	ax)
mary meters meters coder 1 coder 2 dulator Config tput Settings m twork sesserd onfiguration mware ie Time }	Modulator Center Frequency Level(All Carriers) # 1	: 662 000 MHz : 6.0 dBm Frequency 650 000 MHz	Standard: J.83A(DVB-C Channel Info.(Alarm/Ar Constellation 64 QAM	tive/Total]: 0/4/4 Symbol Rate 6875 Ksps	Status Bit(Act/M	ax Z
tus eters coder 1 coder 2 dulator Confg uput Settings m work sisword figuration mware e Time	Center Frequency Level(All Carriers) # 1	: 662.000 MHz : 6.0 dBm Frequency 650.000 MHz	Standard: J 83A(DVB-C Channel Info.(Alarm)A Constellation 64 QAM	tive/Total): 0/4/4 Symbol Rate 6875 Ksps	Status Bit(Act/Ma 14.7/38.0	ax)
beters soder 1 dod 2 dulator Config put Settings put	Center Frequency Level(All Carriers) # 1	: 662.000 MHz : 6.0 dBm Frequency 650.000 MHz	Standard: J.83A(DVB-C Channel Info.(Alarm/Ar Constellation 64 QAM) ttive/Total): 0/4/4 Symbol Rate 6875 Ksps	Status Bit(Act/Ma 14.7/38.0	ax)
oder 1 oder 2 dulator Config put Settings m work sword figuration ware b Time	Level(All Carriers) # 1	: 6.0 dBm Frequency 650.000 MHz	Channel Info.(Alarm/A Constellation 64 QAM	ttive/Total): 0/4/4 Symbol Rate 6875 Ksps	Status Bit(Act/Me 14.7/38.0	ax) /
dulator Confg put Settings m work sword diguration nware e Time	#	Frequency 650.000 MHz	Constellation 64 QAM	Symbol Rate 6875 Ksps	Status Bit(Act/Ma 14.7/38.0	ax) /
Autority and Settings Autority and Settings work sword figuration tware b Time	1	650.000 MHz	64 QAM	6875 Ksps	• 14.7/38.0	м/
m work sword figuration ware F Time	2					
work sword figuration ware > Time	2	658.000 MHz	64 QAM	6875 Ksps	• 0.0/38.0	м 🖌
figuration ware > Time	3	666.000 MHz	64 QAM	6875 Ksps	• 0.0/38.0	м 🖌
e Time	4	674.000 MHz	64 QAM	6875 Ksps	0.0/38.0	м 🖉
				Channel 1 Config.		loso]
				Standard	J.83A(DVB-C) V	
				Level(CH Carriers).	0.0 (-20 ~ +3 dBm)	
				Channel Enable	•	
				Frequency:	(50.000 (50 ~ 960 MHz)	
				Constellation:	6975 (2000 - 5000 Ken-)	



Output Settings

Click "Output Settings" from the left menu, it will display the page as Figure-11 where to configure

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the 4 MPTS output and 2 SPTS Output by clicking the \checkmark .

me to use Web Ma	ni						IP Address Por Step	s: 224.2.2.2 t: 2001 p: 1			
Immary Status	Output	Settings					Protoco Pkt Lengti	h: (UDP h: (7	*		
rameters		IP Stream(GE_DATA)				NUI PKT Fille	r. U			
Encoder 1		Chan	nel Info.(Alarm/Active	e/Total): 0/2/6					Apply	/ Close	-
Modulator TS Config Output Settings		#	IP Address	Port	Protocol	Pkt Length	Null PKT Filter	Program	Status	Bit(Act/Max)	2
stem		MPTS 1	224.2.2.2	2001	UDP	7			۲	25.3/38.8 M	→ ∠
Network		MPTS 2	224.2.2.2	2002	UDP	7			٠	0.0/38.8 M	1
Password Configuration		MPTS 3	224.2.2.2	2003	UDP	7			٠	0.0/38.8 M	1
Firmware Date Time		MPTS 4	224.2.2.2	2004	UDP	7			۲	0.0/38.8 M	1
.og		SPTS 1	224.2.2.2	3001	UDP	7		TV-101(MPTS1)	٠	12 7/20.0 M	-> Z
		SPTS 2	224.2.2.2	3002	UDP	7		NULL	٠	0.0/20.0 M	2
	MPTS 1 Config.			[close]		SPTS 1 Conf	īg.		[close]	
	Enab IP Addres Po Protoc Pkt Leng	le: 224.2.2.2 ss: 224.2.2.2 irt: 2000 ol: UDP th: 7	× ×				Enable: Output Bitrate: IP Address: Port: Protocol: Pkt Length:	20.000 224.2.2.2 3000 UDP 7	Mbps		

Figure-11

Network

When user clicks "Network", it will display the page as Figure-12. It displays the network information of the device. Here users can change the device network configuration as needed.

Encoder Modul	ator				
Summary	Network				
▶ Status	Network				
Parameters					_
Encoder 1		NMS			
Encoder 2		IP Address:	192.168.0.136		
Modulator TS Config		Subnet Mask:	255.255.255.0		
► Output Settings		Gateway:	192.168.0.1		
System		Web Management Port:	80		
▶ Network		MAC Address:	20:10:12:34:50:78		
▶ Password				Apply	
Configuration Firmware					
► Date Time		DATA			
► Log		IP Address:	102 169 2 126		
		Subnet Mask:	255 255 255 0		
		Gateway:	192.168.2.1]	
		MAC Address:	20:20:12:34:56:78		
				Apply	



Password

From the menu on left side of the webpage, clicking "Password", it will display the screen as

Tel: (800) 521-8467



Figure-13 where to set the login account and password for the web NMS.

Encoder Modulator	
welcome to use Web Manag	
Summary	Password
Parameters Encoder 1 Encoder 2 Modulator	Modify the login name and password to make the device safely. If forget the name or password you can reset it by keyboard. The default login name and password is "admin" Also please note the capital character and lowercase character.
► Induator ► TS Config ► Output Settings System	Current VeserName: admin Current Password: New UserName:
Network Password Configuration Firmware	New Password:
► Date Time ► Log	Appl

Figure-13

Configuration

From the menu on left side of the webpage, clicking "Configuration", it will display the page as Figure-14 where to save, restore, make factory set, backup and load your configurations.

Encoder Modulator		
velcome to use Web Manage		
Summary ▶ Status	Configuration	
Parameters Encoder 1 Encoder 2	Save Restore Factory Set Backup Load	
► Modulator ►TS Config ► Output Settings	When you change the parameter you shoud save configuration ,otherwise the new configuration will lost after reboot.	
System ▶ Network		ve config
Password Password Configuration Firmware Date Time Log		
Encoder Modulator		
e Web Management		
Summary > Status	Configuration	
Parameters Encoder 1 Encoder 2	Save Restore Factory Set Backup Load	
Modulator TS Config Output Settings	Load latest saved configuration, after click the "Restore" then please click the "Save config" button, otherwise the "Restore" parameter will lost after reboot.	
System		
Configuration		store
► Firmware ► Date Time ► Log		
Encoder Modulator		
se Web Management		
Summary	Configuration	
Parameters	Save Restore Factory Set Backup Load	
Encoder 1 Encoder 2 Modulator TS Config	Set all configuration back to default, after click the "Factory Set" then please click the "Save config" button otherwise the default parameter will lost after reboot.	
► Output Settings System		
Network Password Configuration Firmware Date Time		actory set
► Log		



Encoder Modu	lator
Management	
Summary ▶ Status	Configuration
Status Parameters Encoder 1 Encoder 2 Modulator TS Config Output Settings System Network Password Configuration Firmware Date Time Log	Save Restore Factory Set Backup Load Backup current configuration to the local file, we suggest do this before set the configuration or update firmware. Restup configuration
Encoder Mo	odulator v 2022-12-26
► Status	Comguration
Parameters	
Encoder 1 Encoder 2	Save Restore Factory Set Backup Load
Modulator TS Config Output Settings	Load the backup file to restore your configuration. Warning: 1. New configuration will replace the old one please backup current configuration before load file. If you use a wrong file, the device may not work.
Network Password	Please do not turn off the power while file loading, otherwise the device will not work.
Configuration Firmware	Open Browse
► Date Time ► Log	Load contig



Firmware

From the menu on left side of the webpage, clicking "Firmware", it will display the screen as

Figure-15 where to update firmware for the device.

Encoder Modula	or .	
agement		
Summary Status	Firmware	
Parameters Encoder 1 Encoder 2 Modulator TS Config Output Settings	Warning: 1. Update the firmware in order to improve the functionality of the device. Please make sure to use the correct firmware file. 2. The update process may take some time, please do not turn off the power during the upgrade. 3. After the upgrade has completed, please manually reboot the device.	
System Network Password Configuration Firmware	Current Software Version: 02.00.34 Build 1.00 Oct 13.2022 Current Hardware Version: 02.00.27 Browse Ito File Selected	
► Date Time ► Log	Upprofe	

Figure-15

Date | Time

Users can set timezone and configure NTP server to update Date and Time in the device.



Encoder Modu	lator
t Summary ▶ Status	Date Time
Parameters Encoder 1 Encoder 2 Modulator TS Config Output Settings System Network Password	1970-01-01 00 28:47 Timezone: ((GMT) Greenwich Mean Time, Dublin, Edinbu ∞) NTP Server 1:
Configuration Firmware Date Time Log	Set Timezone Set 1179 Update from browser
	Figure-16

Log:

The Kernel and System log here are for the R&D debugging reference.

welcome to use V		
Receiption in the second		
nmary	Log	
itatus		
ameters		
ncoder 1	Log Type: Kernel Log v Auto 0 v Export	
incoder 2	[0.00000] Booting Linux on physical CPU 0x0	^
lodulator	[0.000000] Linux version 3.19.0-xilinx (root@localhost.localdomain) (gcc version 4.9.1 (Sourcery CodeBench Lite 2014.11-30))#10 SMP PREEMPT Wed Mar 9 20:02:15 CST 2022	
S Config	0.0000001 CPU: ARM/7 Processor [413/c090] revision 0 (ARM/7), cr=18c5387d	
Jutput Settings	U.UUUUUUU UVU: PPT / VIPT nonaliasing data cache, VIPT aliasing instruction cache	
	0.000000 macmine mode: xmx,gymq/1000	
tem	0.000001 kmm v native Data acto writelate	
etwork	[0.000000] On node 0 totalpages: 65536	
assword	0.0000000 free area init node: node 0, pgdat 40689a40, node mem map 4fdf0000	
onfiguration	0.000000] Normal zone: 512 pages used for memmap	
rmware	[0.000000] Normal zone: 0 pages reserved	
ate Time	[0.000000] Normal zone: 65536 pages, LIFO batch:15	
pg	0.0000001 PERCPU: Embedded 10 pages/cpu @4tdd2000 s8512 r8192 d24256 u40960	
	0.0000000 pcpu alloc 38512 ro132 d24256 u49560 alloc≈10°4056	
	U.UUUUUUU populainoo: (ii) ii (ii) ii D. 0000001 Built 1 sonaleiste ja Zona poder mobilitu ereuning on Total nanae: 65024	
	Overvovo jourin z komenta in conte oruer, intorinty grouping on , total pages, douze Overvovo jourin z komenta namenana line; consensativeSR 015200	
	0.000000 log buf len individual max cou contribution: 131072 bytes	
	0.0000000 log buf len total cpu extra contributions: 131072 bytes	
	0.0000000] log_buf_len min size: 131072 bytes	
	[0.000000] log_buf_len: 262144 bytes	
	[0.000000] early log buf free: 129688(98%)	
	[0.000000] PID hash table entries: 1024 (order: 0.4096 bytes)	
	0.000000 Dentry cache hash table entries: 32768 (order: 5, 131072 bytes)	
	U.UUUUUUU IInode-cache hash table entries: 15,354 (order: 4, 555,556 bytes) C. 0000001 Mamman 292562/VICE0144/VICe0144/VICe01414 and 2,304 and 4, 1556/ and 4, 2137/ init 2004 kee 23126/ analysis (1529/ and 4, 2137/ and 4, 2137	
	U.UUUUUUU Interinty: 2220247V202144A available (H0.54K Kenter UUUE, 245K IVAGBA, 1060K f00ata, 212K INI, 305K 055, 23136K f0564V40, IN304K Cma-f0564V40, UK nighmem) [0.000000] Vicinal kennel memory lavvid:	
	[0.000000] weeter 0.000000 (4 kB)	
	0.000000 fixmap 0xfc00000 0xff00000 (3072 kB)	
	[0.000000] vmalloc : 0x50800000 - 0xf000000 (2792 MB)	
	0.0000000 lowmem : 0x40000000 - 0x50000000 (256 MB)	
	[0.000000] pkmap : 0x3fe00000 - 0x40000000 (2 MB)	
	[0.000000] modules : 0x3f000000 - 0x3fe00000 (14 MB)	
	[0.000000] text: 0x40008000 - 0x40616dc8 (6204 kB)	
	[0.000000] .int: 0x40517000 - 0x4054c000 (212 kB)	
	[0.000000] .data: 0x4054c000 - 0x40543a7a0 (250 KB)	
	U.UUUUUUU J.BSS UXAUBABABA UVAUBABABA (JUKB)	
	Consumer intermediate and the second of the second se	

Figure-17



Chapter 5 Troubleshooting

Our ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All of our products have been passed the testing and inspection before ship out factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by us. To prevent potential hazard, please strictly follow the operation conditions.

Prevention Measure

- Installing the device at the place in which environment temperature between 0 to 45 °C
- Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Checking the input AC within the power supply working range and the connection is correct before switching on device
- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed



Chapter 6 Packing list

• Encoder Modulator

1 pc

• Power cord

1 pc

• Ground Lead

1 pc