

# HDMI / IP Digital RF Modulator



KC101

# SAFETY INSTRUCTIONS

### CONNECTING TO THE MAINS SUPPLY

This product has to be connected to the mains supply.

Before carrying out maintenance operation or modification of the installation, the device has to be disconnected.

#### 🔔 OVERVOLTAGE

An over-voltage cause short-circuits or fire. Never overload the power lines. Always use the power supply provided for single channel series.

#### 🔔 LIQUIDS

should be protected from splashes; Do not place objects filled with liquids on it; If any liquid should accidentally fall into the cabinet, disconnect the power plug.

### 🔔 CLEANING

Disconnect the module before cleaning. Use only a humid cloth without solvent.

#### 🔔 VENTILATION

the ventilation holes should not be obstructed;

not be installed in a hermetically sealed environment;

Other electronic products or heat producing items keep a minimum distance of 15 cm around the apparatus for sufficient ventilation;

#### ACCESSORIES

Only use the supplied power adaptor;

The use of accessories not manufactured by the manufacturer can cause damage to the module.

#### INSTALLATION OF THE MODULE

Do not expose the unit to rain or moisture; Do not installed in direct sunlight or in humid place; Respect the minimum and maximum temperature specifications

# PACKAGE CONTENT

IP QAM Modulator1pcPower Adapter1pc

# **GENERAL DESCRIPTION**

The IF101 is a portable IP QAM modulator that can bring IP streaming, USB storage to RF coax output.

The IF101 can be widely used in digital headend system, broadcasting and Hotel TV systems and etc.

# **FEATURES**

- Support 1\* 10/100 Mbps IP and HDMI input
- USB playback (Format FAT32)
- LCD & web controlled, updated via web
- Support DVB-C/ DVB-T RF output
- Support multiple network streaming protocols

# **APPEARANCE INTRODUCE**



- 1. LCD Screen
- 2. Directional keys (up,down,left,right)
- 3. Enter Key
- 4. ESC(Cancel/Return)
- 5. Status & Power LED
- 6. Power input
- 7. Fan



- 8. RF output
- 9. Reset Button
- 10. NMS Control
- 11. IP DATA
- 12. HDMI input
- 13. USB Port

# **TECHNICAL SPECIFICATIONS**

Input					
IP	1x RJ45, 10/100 Mbps				
Protocol	IPv4/v6, TCP, UDP, HTTP, HLS, RTP, RTSP, RTMP, IGMP (Multicast)				
Control	LCD with 6 keys & NMS				
USB	1x USB(Media formats:MPEG-TS, MPEG4, AVI, MOV, MPEG, MKV)				
HDMI	1x HDMI				
Encoding					
Encoding Format	MPEG4/H.264				
Resolution	Max output: 1080 60P				
Modulation	-				
MER	Typ. 35dB				
RF range	100~950MHz, 1KHz step				
RF output level	95dBµV(30dB Attenuation)				
Standard	DVB-T DVB-C				
Bandwidth	6,7, 8M	Constellation	16QAM,32QAM		
Constellation	QPSK, 16QAM, 64QAM		64QAM, 128QAM,		
Code Rate	1/2, 3/5, 2/3, 3/4, 5/6, 7/8	-	256QAM		
Guard interval	1/4, 1/8, 1/16, 1/32	Symbol rate	5.000-8.000Msps		
FFT	2К, 8К	-	ADJ		
System					
Management	LCD + Control buttons/Ether	net			
Language	English	English			
Upgrade	Ethernet				
General					
Power Supply	DC 12V 2A				
Dimension	128 x 125 x 44mm				
Weight	450g				
Environmental For Operating	Temperature: 5°C- 40°C Relative Humidity: 80% @ 30°C				
19" Rack	1U Rack Mount, 4U Rack Mo	ount			

# **APPLICATION DIAGRAM**





HD TV

### The solution used the following our products

1.HCl421 - 4 x HDMI/CVBS to IP Video Encoder

2.KC101 - HDMI / IP Digital RF Modulator(H.264-1080/60P)

# WEB OPERATION INSTRUCTION

The device is configured using NMS. Access to the NMS is via the network connection

### **1. IP Address of Computer Setting**

We must choose the static IP address according to the default gateway address. The first three numbers must be the same (192.168.0.x in the example). System Control> Network Connections> LAN Connection> Properties> Internet Protocol Version 4 TCP/IPv4 > Properties> Use the following IP address: IP address Computer: 192.168.0.20 and Subnet mask: 255.255.255.0.

WLAN Status	×	WLAN Properties	×	Internet Protocol Version 4 (TCP/IPv4	) Properties
General		Networking		General	
Connection IPv4 Connectivity: IPv6 Connectivity: Media State: SSID: Duration: Speed: Signal Quality: Details Wireless Activity	Internet No network acces Enabled SZ_SG 00:00:06 433.3 Mbps stud	Connect using: Connect using: Cualcomm Atheros QCA9377 ( This connection uses the following ite Connection uses the f	Wireless Network Adapter Configure ems: TCP/IPv4) Multiplexor Protocol ver TCP/IPv6) ery Responder ery Mapper I/O Driver	You can get IP settings assigned auto this capability. Otherwise, you need to for the appropriate IP settings. Obtain an IP address automatica Use the following IP address: IP address: Subnet mask: Default gateway: Obtain DNS server address auto Obtain DNS server address auto	matically if your network supports o ask your network administrator lly 192 . 168 . 0 . 20 255 . 255 . 255 . 0 192 . 168 . 0 . 1 matically
Sent	- Received	Instal Uninsta	Properties	Our DNS server add     Preferred DNS server:	fresses:
Bytes: 207,517	Diagnose	Description Transmission Control Protocol/Inte wide area network protocol that pr across diverse interconnected net	met Protocol. The default ovides communication works.	Alternate DNS server:	Advanced
	Close		OK Cancel		OK Cance

### 2. NMS Log in

Each machine can have different username and password settings. Please log in before operation. Default IP is 192.168.0.168; Username: admin Password: admin

Flamecrest Modulator	Username Password	admin
Status	Log in	
Media Source		
Modulator		
Settings		
Update		
Log out		
Update Log out		

# 3.NMS Home Page & Status

Contents of the home page includes : **Status/Media Source/Modulator/Setting/ Update/Log out.** 

Click "Status" label and click the "Refresh "button to read the current status. Here you can know the NMS, Modulator and Player information.

Flamecrest Modulator     Version       Status     IP Address       Media Source	
Status IP Address 192.168.0.168	
Media Source	
- Modulator	
- IP Streaming Modulator Type 2.3	
- Videos Core Version 2.3.5.21	
Video Format H264	
- M3U Playlist	
- HDMI Input Player	
Modulator Version IH101-20210112-141049	
IP Address 192.168.0.136	
Settings Subnet Mask 255.255.0	
Update Default Gateway 192.168.0.1	
Log out USB Free Size 8.9G,vfat,rw,Path=	
Source HDMI	
Web Connection Connected	
Refresh	

### 4.Media Source

### 4.1 IP streaming

Click IP Streaming item in Media Source. Enter your URL of Network streaming in the Full URL field. (ex. UDP://@239.1.1.1: 3990) (ex. RTP://@239.1.1.1: 3990) (ex. RTSP://192.168.1.100:8554/1.mp4) (ex.rtmp://202.69.69.180:443/webcast/bshdlive-pc) (ex.http://125.12.7.172:9981/stream/channelid/086640851) (ex. http://ivi.bupt.edu.cn/hls/cctv1hd.m3u8) (ex. https://www.youtube.com/watch?v=cSUtWVFaG4I) Click the "Apply" button to start playing.

marine marine 9		
ILL LIRI	udp://239.1.1.1:3990	Clear Recent
OLL OILL		

#### Apply Refresh

#### **Remark:**

You can enter the URL of the network stream such as UDP/RTP, RTSP, RTMP, Http, etc.

### 4.2 Videos

Insert the USB flash drive, and then click "Videos" in Media Source.

After selecting USB in the Storage option, click the "Refresh" button, and the USB video files will be listed below.

**One file playback:** Check the box on the left and click "Play" button or click icon ► on the same line.

**Multi-files playback:** Select the desired video or click the "Select All" button and then click the "Play" button to play.



#### **Remark:**

a. USB Flash Driver support FAT32 format

b. Unsupported: filename contains #, please remove the special symbol.

c. Before unplugging the storage device, please click the "Remove" button to avoid the warning message from the computer.

### 4.3 M3U Playlist

Click M3U Playlist item in Media Source, then click the **"Choose file"** button to select your m3u or m3u8 file.

It will list which you select from network streaming file. Click the program what you want to start playing.

M3U Playlist Choose File No file chosen	
A&E FHD	
Animal Planet FHD	
Arte 1 FHD	
AXN FHD	
Baby FHD	
Band FHD	
Band News FHD	
Band Sports FHD	
BIS FHD	
Boomerang FHD	
Canal Brasil FHD	
Cartoon Network FHD	
Chef TV FHD	
Cinemax FHD	
CNN Espanhol FHD	
CNN Internacional FHD	
Combate FHD	
Comedy Central FHD	
Curta! FHD	
Discovery Channel FHD	
Discovery Civilization FHD	
Discovery Home & Health FHD	
Discovery ID FHD	
Discovery Kids FHD	
Discovery Science FHD	•

Remark :

Current implementation of playlist.

(m3u) is intended for live stream selection only. Continuous file playback with m3u file will be added later.

#### 4.4 HDMI Input

Click the "Apply" button to change to HDMI as source input.

HDMI Input		
Apply		

### 5.Modulator

# 5.1 Modulator(DVB-T)

Standard	DVB-T	Bitrato	19	Mhne
RF Freq.(MHz)	474	Latency	500	∽ <mark>ms</mark>
Bandwidth(MHz)	8 .	*		
Modulation	64QAM	FHD Output	Auto	~
RF Atten.(dB)	0	Audio format	MPEG1	~
LCN	1	Half FPS	On	~
Service ID	1			
TS ID	1	HDCP	Off	~
Network ID	1			
ON ID	1			
Provider Name	KSETI			
Service Name	KSETI HD1			
Private Data Spec ID:	EACEM	/ 0x28		
PMT PID	32			
Video PID	48			
Audio PID	49			
PCR PID	50			
FFT	8K •	/		
Guard Interval	1/16	/		
Code Rate	5/6	/		

Apply Refresh

Parameter	Range
Standard	DVB-T
Frequency(MHz)	100000-950000
Bandwidth(MHz)	6, 7, 8
Modulation	QPSK, 16QAM, 64QAM
RF Attenuation(dB)	0-30
LCN	1-1023
Service ID	1-65535
TS ID	1-65535
Network ID	1-65535
ON ID	1-65535
Provider Name	up to 15 alphanumeric characters
Service Name	up to 15 alphanumeric characters
Private Data Spec ID	Australian TTN, EACEM, FreeView(NZ), ITC, Nordig, other
Parameter	Range
PMT PID	32-8190
Video PID	32-8190
Audio PID	32-8190
PCR PID	32-8190
FFT	2К, 8К
Guard Interval	1/4, 1/8, 1/16, 1/32
Guard Interval Code Rate	1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval Code Rate Bitrate	1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 Max.20Mbps
Guard Interval Code Rate Bitrate Latency	1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 Max.20Mbps 500, 800, 1000 ms
Guard Interval Code Rate Bitrate Latency FHD Output	1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 Max.20Mbps 500, 800, 1000 ms Auto, Interlace
Guard Interval Code Rate Bitrate Latency FHD Output Audio format	1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 Max.20Mbps 500, 800, 1000 ms Auto, Interlace AAC, MPEG1
Guard Interval Code Rate Bitrate Latency FHD Output Audio format Half FPS	1/4, 1/8, 1/16, 1/32 1/2, 2/3, 3/4, 5/6, 7/8 Max.20Mbps 500, 800, 1000 ms Auto, Interlace AAC, MPEG1 On/Off

# 5.2 Modulator(DVB-C)

Standard	DVB-C	~	Bitrate	19	Mbps
RF Freq.(MHz)	474		Latency	500	∽ <mark>ms</mark>
Symbol Rate	6875				
Modulation	64QAM	~	FHD Output	Auto	~
RF Atten.(dB)	0		Audio format	MPEG1	~
LCN	1		Half FPS	On	~
Service ID	1				
TS ID	1		HDCP	Off	~
Network ID	1				
ON ID	1				
Provider Name	KSETI				
Service Name	KSETI HD1				
Private Data Spec ID:	EACEM	~	0x28		
PMT PID	32				
Video PID	48				
Audio PID	49				
PCR PID	50				

Apply Refresh

Parameter	Range
Standard	DVB-C
Frequency(MHz)	100000-950000
Symbol Rate(Ksps)	5000-8000
Modulation	16QAM, 32QAM, 64QAM, 128QAM,256QAM
RF Attenuation(dB)	0-30
LCN	1-1023
Service ID	1-65535
TS ID	1-65535
Network ID	1-65535
ON ID	1-65535
Provider Name	up to 15 alphanumeric characters
Service Name	up to 15 alphanumeric characters
Private Data Spec ID	Australian TTN, EACEM, FreeView(NZ), ITC, Nordig, other

Parameter	Range
PMT PID	32-8190
Video PID	32-8190
Audio PID	32-8190
PCR PID	32-8190
Bitrate	Max.20Mbps
Latency	500, 800, 1000 ms
FHD Output	Auto, Interlace
Audio format	AAC, MPEG1
Half FPS	On/Off
HDCP	On/Off

### 6. Settings

Setting Page including Network Setting/Software & Firmware Update/Log in Password Changed.

### 6.1 NMS Network Setting

The Default IP of NMS is 192.168.0.168. In these fields, enter the IP address/ Subnet Mask /Gateway/MAC Address you want to change.

Click "Apply" button and wait a moment, it will change to the IP information of your choice.

IP Address	192.168.0.168
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Port	80
MAC Address	00:80:E1:3E:DB:3E

#### 6.2 Player Network Setting

In the MAC Address field, click the back grid to modify the content. Click **"Apply"** button to save settings.

DHCP	oOff ◉ On
MAC Address	00:23:34:3E:DB:3E
Subtitle	
Apply	Refresh

#### **Remark:**

A. IP addresses of KC101 player and SMB server need to be in the same area network.

#### B. Please do not set the IP of NMS and player to the same

#### 6.3 Password

In the New password field, enter the new password you want to change, also the same password as the new password to confirm. Click **"Apply"** button and wait a moment, it will Change the password and reload.

-Password	
New Username	admin
New password	
Confirm password	
Apply	

### 7. Update

Which has four items LCD Module /Modulator Firmware/NMS and USB Firmware Upgrade.

LCD Module		
Modulator Firmware		
NMS		
USB Firmware Upgrade		
ograss		

Notes:

- a. Make sure the network is stable before operation.
- b. Avoid opening two pages with the same URL.
- c. The update process ensures that the route and power supply are not separated.

**d.** After the update, it takes a while for the machine to automatically restart. At this time, it is absolutely impossible to turn off the power.

# 8. Log Out

Log out of the MNS control page, please click "Log out", it will show a message box, then click "OK" to log out.

