IP QAM Modulator User Manual



About This Manual

Intended Audience

This user manual has been written to help people who have to use, to integrate and to install the product. Some chapters require some prerequisite knowledge in electronics and especially in broadcast technologies and standards.

Disclaimer

No part of this document may be reproduced in any form without the written permission of the copyright owner.

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. shall have no liability for any error or damage of any kind resulting from the use of this document.

Copy Warning

This document includes some confidential information. Its usage is limited to the owners of the product that it is relevant to. It cannot be copied, modified, or translated in another language without prior written authorization from .

Directory

Chapter 1 Product Overview	1
1.1 Outline	1
1.2 Inner Structure	1
1.5 Specifications	2
Chapter 2 Physical Presentational Statement	2
2.1 Front panel Illustration:	4
2.2 Rear panel Illustration:	4
Chapter 3 Installation Guide	5
3.1 Acquisition Check	5
3.2 Installation Preparation	5
Chapter 4 Web NMS Management	8
4.1 Login	8
4.2 Operation	8
Chapter 5 Troubleshooting	
Chapter 6 Packing list	19

Chapter 1 Product Overview

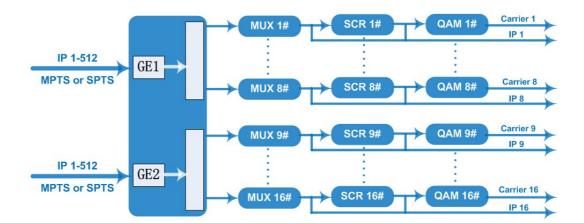
1.1 Outline

NK3316/32 IP Mux-Scrambling modulator is the latest generational Mux-scramblingmodulating all-in-one device developed by . It has 16/32 multiplexing channels, 16/32 scrambling channels and 16/32 QAM (DVB-C) modulating channels, and supports maximum 1024 IP input through the GE port and 16/32 non-adjacent carriers (50MHz~960MHz) output through the RF output interface. The device is also characterized with high integrated level, high performance and low cost. This is very adaptable to newly generation CATV broadcasting system.

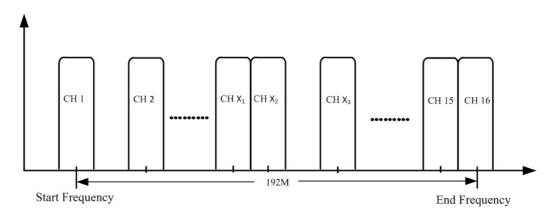
1.4 Key Features

- 2 GE input, SFP interface
- Supports up to 1024 channels TS over UDP/RTP, unicast and multicast, IGMP v2\v3
- Max 840Mbps for each GE input
- Supports accurate PCR adjusting
- Supports CA PID filtering, remapping and PSI/SI editing
- Supports up to 180 PIDS remapping per channel
- Support DVB general scrambling system (ETR289), simulcrypt standards ETSI 101 197 and ETSI 103 197
- Support 16/32 multiplexed or scrambled TS over UDP/RTP/RTSP output
- 16/32 non-adjacent QAM carriers output, compliant to DVB-C (EN 300 429) and ITU-T J.83 A/B
- Supports RS (204,188) encoding
- Support Web-based Network management

1.3 Inner Structure



1.4 Carrier Setting Illustration



1.5 Specifications

	Input	512×2 IP input, 2 100/1000M Ethernet Port (SFP)	
T (Transport Protocol	TS over UDP/RTP, unicast and multicast, IGMP	
Input		V2/V3	
	Transmission Rate	Max 840Mbps for each GE input	
	Input Channel	1024	
	Output Channel	16/32	
Mux	Max PIDs	180 per channel	
IVIUX		PID remapping(auto/manually optional)	
	Functions	PCR accurate adjusting	
		PSI/SI table automatically generating	
	Max simulscrypt CA	4	
Scrambling Parameters	Scramble Standard	ETR289, ETSI 101 197, ETSI 103 197	
rarameters	Connection	Local/remote connection	
	QAM Channel	16/32 non-adjacent carrier	
Modulation	Modulation Standard	EN300 429/ITU-T J.83A/B	
	Symbol Rate	5.0~7.0Msps, 1ksps stepping	
Parameters	Constellation	16, 32, 64 , 128, 256QAM	
	FEC	RS (204, 188)	
RF Output	Interface	1 F typed output port for 16/32 carriers, 75Ω	
		impedance	

	RF Range	50~960MHz, 1kHz stepping	
	Output Level	-20dBm~+10dBm(87~117dbµV), 0.1dB stepping	
	MER	\geq 40dB	
	ACLR	-60 dBc	
TS output	16/32 IP output over	UDP/RTP/RTSP, unicast/multicast, 2 100/1000M	
TS output	Ethernet Ports		
System	Network management software (NMS) supporting		
	Demission	420mm×440mm×44.5mm (WxLxH)	
	Weight	3kg	
Conorol	Temperature	0~45°C(operation), -20~80°C(storage)	
General	Derror Groupler	AC 100V±10%, 50/60Hz or AC 220V±10%,	
	Power Supply	50/60Hz	
	Consumption	15.4W	

Chapter 2 Physical Presentational Statement

2.1 Front panel Illustration:



2.2 Rear Panel Illustration:



1	NMS/CAS: network management port and CA data port
2	RF output port
3	Reset IP: Reset webmaster IP address, recover it to default IP address
4	Link/Act Indicators
5	Data Input/Output 1/2 (SFP)
6	Power switch
7	AC Power Socket
8	Grounding

Chapter 3 Installation Guide

3.1 Acquisition Check

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

- NK3316/32 IP QAM Modulator
- User's Manual
- Power Cord

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

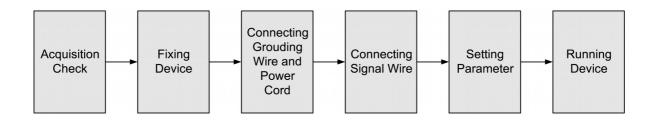
3.2 Installation Preparation

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 steps of the installation include:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing NK3316/32 IP Mux-Scrambling QAM Modulator
- Connecting signal cables
- Connecting communication port (if it is necessary)

3.2.1 Device's Installation Flow Chart Illustrated as follows:



3.2.2 Environment Requirement

Item	Requirement	
	When user installs machine frame array in one machine hall, the	
Machine Hall Space	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.	

la de la della d		
	Electric Isolation, Dust Free	
Machine Hall Floor	Volume resistivity of ground anti-static material: $1X10^7 \sim 1X10^{10\Omega}$, Grounding current limiting resistance: 1M (Floor bearing should be	
	greater than 450Kg/m ²)	
Environment	5~40°C(sustainable), 0~45°C(short time)	
Temperature	installing air-conditioning is recommended	
Relative Humidity	20%~80% sustainable 10%~90% short time	
Pressure	86~105KPa	
	Installing rubber strip for sealing door-gaps and dual level glasses	
Door & Window	for window	
Wall	It can be covered with wallpaper, or brightness less paint.	
Fire Protection	Fire alarm system and extinguisher	
	Requiring device power, air-conditioning power and lighting power	
	are independent to each other. Device power requires AC power	
Power	220V ±10% 50/60Hz or 110V ±10% 50/60Hz. Please carefully	
	check before running.	

3.2.3 Grounding Requirement

- All function modules' good grounding is 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 cables' 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.

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

3.2.5 Device Grounding

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

3.3 Wire's Connection

3.3.1 Power cord connection

The power socket is located on the right of rear panel, and the power switch is on the left of front panel. User can plug one end of the power cord to the socket and insert the other end to AC power. 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 NK3316/32 IP QAM Modulator, user should set the power switch to "OFF".

3.3.2 Signal and NMS Cable Connection

The signal connections include the connection of input signal cable and the connection of output

signal cable.

Chapter 4 Web NMS Management

This device does not support the LCD operation, and the modification can only be operated under Web NMS.

4.1 Login

The factory default IP address is 192.168.0.136 and users can connect the device and web NMS through this IP address.

Connect the PC (Personal Computer) and the device with a net cable, and use ping command to confirm they are on the same network segment. For instance, 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).

Launch the web browser an input the device 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.

Username: Password: Default Usernadmin Default Usernadmin Default Usernadmin
Copyright @2011

Figure-1

4.2 Operation

4.2.1 Summary

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

welcome to use Web Manag		20	11
Summary DEVICE INFORMATION Parameters System Information	1		
TS Config Scrambler Modulator IP Stream System Network Password Configuration	Software Version: Hardware Version: Web Version: System Version: Product ID: Uptime:	1.11 Build 200.00 Jun 4 2016 0.90.0.0 1.10 1.10.1.50 0d031660-00000010-00000000-00000000 0 Day-01.17:32	
Firmware Log ↓ Log ↓ L			
User can click any item here to enter the corresponding interface to check information or set the parameters.			

Figure-2

4.2.2 Parameters

Parameters → **TS Config:**

Click "TS Config", it displays the interface where users can configure the output TS parameters in this interface. (Figure-3)

				2
mmary	TS CONFIG			
Status				
rameters TS Config Scrambler	Output 151- Stream Select	General PID Bypass		
Modulator IP Stream	+ /+×+==			
P Stream	⇒Lose ⇒ Locked		→Normal → Overflow	
stem	E ⇒CH1_GE1_224.2.2.2:1234 (prog: 5/7)	[34.7/50.0M]	E →Output TS 1 (prog: 5)	[33.0/38.
letwork	1: 301] CCTV 1	CA Filter	"1: CCTV 2 <=CH1_GE1_224.2.2.2:1234 [302]	
Password	E 2: 2 [302] CCTV 2	PID Remap	2: CCTV 7 <=CH1_GE1_224.2.2.2:1234 [303]	
Configuration	🖽 3: 🗹 [303] CCTV 7	Refresh Input	*3: CCTV 10 <=CH1_GE1_224.2.2.2:1234 [304]	
Firmware	⊞ 4: 🗹 [304] CCTV 10		4. ELCCTV12 <=CH1_GE1_224.2.2.1234 [306]	
Log	🖽 5: 🕅 [305] CCTV 11	Refresh Output	"5: ■ CCTV 15 <=CH1_GE1_224.2.2.2:1234 [307]	
	🖽 6: 🗹 [306] CCTV 12	===>		
	⊞ 7: 🗹 [307] CCTV 15	<===		
	→CH2_GE2_224.2.2.2:1001 (prog: 0)	[0.0/0.0M]		
		All Input		
		All Output		
		Air Output		
	Parse program time out: 60 seconds			
	Parse program time out: 60 seconds			



> Output TS X

From the menu on up side of the webpage, clicking "Output TS X", it displays the interface as Figure-4. Users can select the output TS channels.

welcon		2016-06-
Summary ▶ Status	TS CONFIG	
Parameters * TS Config > Scrambler > Moluator * IP Stream System > Network > Password > Configuration > Firmware > Log	Output TS 1- Stream Select General PID Bypass Image: Stream Select Output TS 2 Image: Stream Select Output TS 4 Output TS 4 Output TS 5 Output TS 6 Image: Stream Select Output TS 6 Output TS 8 Output TS 8 Image: Stream Select Image: Stream Select Image: Stream Select Output TS 6 Output TS 7 Output TS 8 Image: Stream Select Image: Stream Select Output TS 10 Output TS 10 Image: Stream Select Image: Stream Select Image: Stream Select Output TS 11 Output TS 13 Output TS 14 Image: Stream Select Image: Stream Select Output TS 15 Output TS 15 Image: Stream Select Image: Stream Select Image: Stream Select Parse program tm end: 60 seconds seconds Seconds	[35.4/38.0M]
servous syntheodod at a bub.		

Figure-4

> Stream Select

From the menu on up side of the webpage, clicking "Stream Select", it displays the interface where users can choose the programs to Mux out. (Figure-5)

welcome to us			2016-06-
Summary	TS CONFIG		
System Status	Output TS 1- Stream Select ↓ ✓ ×	General PID Bypass →Normal → Overflow (34.7/60.0M) → Output TS 1 (prog. 5) → 0.00000000000000000000000000000000000	[32.7/38.0M]
 ▶ Network ▶ Password ▶ Configuration ▶ Firmware ▶ Log 	 ⊕ 1. □ [301] CCTV 1 ⊕ 2. □ [302] CCTV 2 ⊕ 3. ☑ [303] CCTV 7 ⊕ 4. ☑ [304] CCTV 10 ⊕ 5. □ [305] CCTV 11 ⊕ 6. ☑ [306] CCTV 12 ⊕ 7. ☑ [307] CCTV 15 	☑ CA Filter ♥1. □ CCTV 2 <=CH1_GE1_224.2.2.21234 [302]	
	Input Area	All found All Coulput	
	Parae program time out: 60 seconds	Operation Area	

Figure-5

Configure 'Input Area' and 'Output Area' with buttons in 'Operation Area'. Instructions are as below:

CA Filter : Enable/disable the CA Filter function. Clicking the box, user can filter the input CA

to avoid disturbing with the device scrambling function.

[♥]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 one input program first and click this button to transfer the selected program

to the right box to output.

- Similarly, user can cancel the multiplexed programs from the right box.
- 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

Program Modification:

The multiplexed program information can be modified by clicking the program in the 'output' area. For example, when clicking lccrv2<, it triggers a dialog box (Figure 6) where users can input new information.

Program Information		[close]
Program From Input:	CH1_GE1_224.2.2	2:1234 [302]
Service Name:	CCTV 2	
Program Number:	101	
Service Type:	0x01	
Service Provider:	CCTV	
PMT Descriptor Tag:	💷 0x00	
PMT Descriptor Data:		(Hex)
PMT PID:	0x0020	
PCR PID:	0x0021	
MPEG-2 Video PID:	0x0022	
MPEG-2 Audio PID:	0x0023	
		Apply Close

Figure 6

General

From the menu on up side of the webpage, clicking "General", it displays the interface where users can set parameters for each output channel. (Figure-7)

welcome									2016
Summary									
▶ Status	TS CONFIG								
Parameters									
► TS Config		Output	rs 1 -	Stream Select	General	PID Bypass			
Scrambler									
Modulator	Stre	am							
P Stream		Output Mode:		Mux out	-	PAT Insert:	V		
system		SDT Insert:				BAT Insert:	V		
Network									
Password		Share BAT:				CAT Insert:			
Configuration		PMT Insert:		V		TDT Insert:			
Firmware		TOT Insert:				TS ID:	1		
▶ Log		ON ID:		1		PCR Correct	\checkmark		
		PCR Speed B	w	0	•	PCR State BW	0	*	
	NIT								
		NIT Insert:				Private Data:	☑ 0x00000000		
		Network ID:		1		Network Name:	network-1		
		Version Mode		Automatic	•	Version Number:	0	(0-31)	
		Index	TS ID	ON ID	Frequen	cy Constellation	Symbol Rate	+ 🗊	
	VCT								
		VCT Insert:				Modulation Mode:	4		
									Apply
									L
									-
									Add desc

Users click • the interface is display as below, and click • to apply the modified parameters.(Figure-8)

NIT Descriptor			[close]
TS ID:	1		
ON ID:	1		
Frequency:	450.000	MHz	
Constellation:	16 QAM	*	
Symbol Rate:	6875	Ksps	
FEC Inner:	1/2 conv.	*	
FEC Outer:	not outer FEC	*	
		Add	Close
*			

Figure-8

PID Pass

From the menu on up side of the webpage, clicking "PID Pass", it displays the interface where to add the PIDs which need pass through. (Figure-9)

welco		201
Summary Parameters	TS CONFIG	
► TS Config ► Scrambler ► Modulator	Output TS 1 - Stream Select General PID Bypass	
► IP Stream System	Index Input Channel Input PID(0x) Output PID(0x) +	
Network Password Configuration Firmware		Set Del-All
► Finnware ► Log		

Figure-9

Parameters → **Scrambler:**

From the menu on left side of the webpage, clicking "Scrambler", it displays the interface where users can choose the programs to scramble. (Figure-10)

int				201
Summary Parameters ▶ TS Config ▶ Scrambler	PROGRAM SCRAMB	nannel select		
Modulator IP Stream	SCT CH 2+ CAS I	CASZ CASS CAS4	CA channel select	
System Network Password Configuration Firmware Log	Program select (U/14) # - [Imax] # 2 [Jy/stating # 3 [] hntw # 4 [] hnt] # 6 [] hnty # 6 [] hnty # 7 [] hntc # 8 [] hnty # 9 [] hnty # 9 [] hnty # 9 [] hnty # 10 []ty955 # 11 [] StanDongTV # 12 [] SDReiMin # 13 [] ScUingJi # 14 [] SOShengHuo This field indicates the c outputting programs. programs selected will scrambled.	The	A111 1 0x1ff1 6000 TCP 0x70020001	EMMG and ECMG working state, green means it work normally, while red means communication error or no communication.

Figure-10

Parameters \rightarrow **Modulator:**

From the menu on left side of the webpage, clicking 'Modulator', it will display the interface as Figure-11 where to set RF output parameters.

rameters		iency: 710.000 MHz r riers): 0.0 dBm		Standard: J. Channel Info	83A(DVB-C) p.(Alarm/Active/To	tal): 0/16/16			Click to set a
Scrambler Modulator	Channel	Frequency	Constellation	Symbol Rate	Gain offset	Status	Bit(Act/Max)	TZ H	channels RF
IP Stream	1	650.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	34.7/38.0 M	<u></u>	QAM output
stem	2	658.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	1	parameters
Network									
Password	3	666.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M		
Configuration	4	674.000 MHz	64 QAM	6875 Ksps	0.0 dB	۲	0.0/38.0 M	1 2	
Firmware	5	682.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	1	
	6	690.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	1 2 4	Click to set of the
	7	698.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	iz I	channel RF
	8	706.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	1	QAM output
	9	714.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	21	parameters
	10	722.000 MHz	64 QAM	6875 Ksps	0.0 dB	٠	0.0/38.0 M	1	
	11	730.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	1	
	12	738.000 MHz	64 QAM	6875 Ksps	0.0 dB	٠	0.0/38.0 M	1	
	13	746.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	12	
	14	754.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M	12	
	15	762.000 MHz	64 QAM	6875 Ksps	0.0 dB	•	0.0/38.0 M		
	15	102.000 11112	04 Q/ W	001010000	0.0 0.5	-	0.0/00.0 11		

Figure-11

Quickly Config.		[close
Standard:	J.83A(DV	B-C) 🔻
Level(All Carriers):	0.0	(-20 ~ +10 dBm)
Channel Enable:		
Start Frequency:	650.000	(30 ~ 900 MHz)
Bandwidth:	8.000	MHz
Constellation:	64 QAM	•
Symbol Rate:	6875	(5000 ~ 7000 Ksps)
Gain offset:	0.0	(-10 ~ 0 dB)
		Apply Close
Channel 1 Config.		[close]
	J 83A(DVB	
Standard:	J.83A(DVB	-C) 💙
	J.83A(DVB -10.0	
Standard:		-C) 💙
Standard: Level(All Carriers):	-10.0	-C) 💙
Standard: Level(All Carriers): Channel Enable:	-10.0	C) ▼ (-12~ +13 dBm)
Standard: Level(All Carriers): Channel Enable: Frequency:	-10.0 2474.000	C) ▼ (-12 ~ +13 dBm)] (30 ~ 900 MHz)
Standard: Level(All Carriers): Channel Enable: Frequency: Constellation:	-10.0	-C) ♥ (-12 ~ +13 dBm)] (30 ~ 900 MHz) ♥
Standard: Level(All Carriers): Channel Enable: Frequency: Constellation: Symbol Rate:	-10.0 -10.0 474.000 64 QAM 6875	.C) ▼ [(+12 ~ +13 dBm)](30 ~ 900 MHz) ▼](5000 ~ 7000 Ksps)

Parameters → **IP** Stream:

NK3316/32 supports TS to output in IP (16/32*MPTS) format through the DATA port.

Click 'IP Stream', it will display the interface as Figure-12 where to set IP out parameters.

ummary	IP STREAM								
Status	IF STREAM								
arameters	Channel	Info.(Alarm/Active/Total)	: 0/1/16						
TS Config	Chann	el IP Address	Port	Protocol	Pkt Length	Null PKT Filter	Status	Bit(Act/Max)	1
• Scrambler • Modulator	1	224.2.2.2	2001	UDP	7		•	32.5/38.0 M	
IP Stream	2	224.2.2.2	2001	UDP	7			0.0/38.0 M	
ystem									
Network	3	224.2.2.2	2003	UDP	7		۲	0.0/38.0 M	- /
Password Configuration	4	224.2.2.2	2004	UDP	7		۲	0.0/38.0 M	
Firmware	5	224.2.2.2	2005	UDP	7		۲	0.0/38.0 M	
Log	6	224.2.2.2	2006	UDP	7		۲	0.0/38.0 M	1
	7	224.2.2.2	2007	UDP	7		۲	0.0/38.0 M	1
	8	224.2.2.2	2008	UDP	7		۲	0.0/38.0 M	1
	9	224.2.2.2	2009	UDP	7		٠	0.0/38.0 M	1
	10	224.2.2.2	2010	UDP	7			0.0/38.0 M	1
	11	224.2.2.2	2011	UDP	7			0.0/38.0 M	2
	12	224.2.2.2	2012	UDP	7			0.0/38.0 M	1
			2012	UDP	7		•		- 1
	13	224.2.2.2						0.0/38.0 M	
	14	224.2.2.2	2014	UDP	7		۲	0.0/38.0 M	
	15	224.2.2.2	2015	UDP	7		٠	0.0/38.0 M	
	16	224.2.2.2	2016	UDP	7		۲	0.0/38.0 M	
		Fig	gure-	12					
	Channel 1				[ci	ose]			
		Enable:							
		Source Select:	Scram	bed TS	*				
		IP Address:	224.2.	2.2	_				
		Port:	2001		_				
		Protocol:	UDP		~				
		Pkt Length:	7		*				
		Null PKT Filter:							
			_						

System → Network:

Click 'Network', it will display the interface as Figure-13 where to set network parameters.

٧		
ummary	NETWORK	
Status		
arameters		
TS Config	NMS	
Scrambler	IP Address: 10.0.0.104	
Modulator	Subnet Mask: 255.0.0.0	
P Stream	Gateway: 10.0.0.1	
stem	Web Manage Port: 80	
Network	MAC Address: 20:3f:12:34:56:78	
Password		
Configuration		Αφρ
irmware		
.og		
	Scrambler	
	IP Address: 192.168.19.197	
	Subnet Mask: 255.255.255.0	
	Gateway: 192.168.19.1	
		Арр
	DATA	
	IP Address: 192.168.100.100	
	Subnet Mask: 255.255.0	
	Gateway: 192.168.100.1	
	MAC Address: 20:4f:12:34:56:78	
	TS Output: GE1 ♥ GE2 ♥	
	15 Output. GET IN GEZ IN	
		Αφρ



System → Password:

From the menu on left side of the webpage, clicking "Password", it will display the screen as Figure-14 where to set the login account and password for the web NMS.

		2016-
_		
Summary	PASSWORD	
Status		
Parameters		
TS Config	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	
Scrambler	and password is "admin". Also please note the capital character and lowercase character.	
Modulator		
► IP Stream	Current UserName: admin	
System	Current Password:	
▶ Network	New UserName:	
▶ Password	New Password:	
Configuration Firmware	Confirm New Password:	
► Log	Contrar wew rassword.	
	Apply	

Figure-14

System \rightarrow Configuration:

From the menu on left side of the webpage, clicking "Configuration", it will display the screen as Figure-15 where to set your configurations for the device.

ıt		201
Rumman		
Summary	CONFIGURATION	
► Status —		
Parameters		
► TS Config	Save Restore Factory Set Backup Load	
► Scrambler	Scient areas	
Modulator IP Stream		
	When you change the parameter, you shoud save configuration , otherwise the new configuration will lost after reboot.	
System		
► Network		
Password		Save config
► Configuration		
► Firmware		
► Log		



System → Firmware:

From the menu on left side of the webpage, clicking "Firmware", it will display the screen as Figure-16 where to update firmware for the device.

velcome to use Web Manage		2016
Summary ▶ Status Parameters	FIRMWARE	_
TS Config Scrambler Modulator IP Stream System	 Warning: 1. Upgrade firmware(software and hardware) to get new function please choose the right firmware to upgrade. If you use a wrong file, the device may not work. 2. Upgrade will keep a long time please do not turn off the power, otherwise the device will not work. 3. After upgrade, you must reboot device manually. 	
Network Password Configuration Firmware Log	Current Software Version: 1.11 Build 200.00 Jun 4 2016 Current Hardware Version: 0.90.0.0 File: 演說是, 未选择文件。	
	Leprada -	

Figure-16

System → Log:

From the menu on left side of the webpage, clicking "Log", it will display the screen as Figure-17 where to check the "Log".

ummary	To select "Kernel log" and "System Log"
▶ Status	Log To select Kernel log and System Log
arameters	
TS Config	Log Type: Kernet Log Auto Refresh: 0 Export Citat Internet Log
Scrambler	[0.000000] System Log a CPU 0x0
Modulator	 0.000000 Dinux version 3.19.0-xiling (root@localhost.localdomain) (gcc version 4.9.1 (Sourcery CodeBench Lite 2014.11-30)) #134 SMP PREE
IP Stream	[0.000000] CPU: ARMY7 Processor [413fc090] revision 0 (ARMv7), cr=18c5387d
	[0.000000] CPU: PIPT / VIPT nonaliasing data cache, VIPT aliasing instruction cache
stem	[0.000000] Machine model: xlnx,zynq-7000
Network	[0.000000] cma: Reserved 16 MiB at 0x15800000
	[0.00000] Memory policy: Data cache writealloc
Password	0.000000] On node 0 totalpages: 98304
Configuration	[0.000000] free_area_init_node: node 0, pgdat 40560200, node_mem_map 57cf0000
Firmware	0.000000] Normal zone: 768 pages used for memmap
Log	0.000000] Normal zone: 0 pages reserved
	[0.000000] Normal zone: 98304 pages, LIFO batch:31
	 [0.000000] PERCPU: Embedded 9 pages/cpu @57cd3000 s8128 r8192 d20544 u36864 [0.000000] pcpu-alloc: s8128 r8192 d20544 u36864 alloc=9'4096
	[0.000000] pcpu-alioc; [0] 0 [0] 1 [0.000000] pcpu-alioc; [0] 0 [0] 1
	0.000000 pcpu-anito. [0] 0 [0] + [0.000000 [bit] tzonelists in Zone order, mobility grouping on. Total pages: 97536
	 0.000000 jount / contents in zone order, including groupping in total pages 97500 0.0000001 (Kernel command line: console=ttyPS0,115200 root-/dev/ram nv earlyprintk
	0.000000 [retiret contracted units. consider units of the contracted and the early prime [0.000000] [log buf [en individual max cpu contribution; 131072 bytes
	0.000000 log buf len total cpu extra contributions: 131072 bytes
	[0.000000] log but ien min size: 131072 bytes
	0.0000001/gb but ien: 262144 bytes
	[0.000000] early log buf free: 129664(98%)
	0.0000001 PID hash table entries: 2048 (order: 1, 8192 bytes)
	0.000000] Dentry cache hash table entries: 65536 (order: 6, 262144 bytes)
	0.000000 Inode-cache hash table entries: 32768 (order: 5, 131072 bytes)
	0.000000] Memory: 359184K/393216K available (3790K kernel code, 219K rwdata, 1272K rodata, 192K init, 291K bss, 17648K reserved, 16384
	0.000000] Virtual kernel memory layout:
	0.000000] vector : 0xffff0000 - 0xffff1000 (4 kB)
	[0.000000] fixmap : 0xffc00000 - 0xfff000000 (3072 kB)
	[0.000000] vmalloc : 0x58800000 - 0xff000000 (2664 MB)
	[0.000000] lowmem : 0x40000000 - 0x58000000 (384 MB)
	[0.000000] pkmap : 0x3fe00000 - 0x40000000 (2 MB)
	[0.000000] modules:0x3f000000-0x3fe00000 (14 MB)
	0.000000] .text : 0x40008000 - 0x404f9af0 (5063 kB)

Figure-17

Chapter 5 Troubleshooting

's ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All 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 . 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 voltage 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

•	NK3316/32 IP QAM Modulator		1 pc
•	User's Manual	1 pc	

• Power Cord 1 pc