

# NetUP Streamer 16xC

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User manual

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## Chapter 1 Introduction

NetUP Streamer 16xC – is the latest generation Mux-scrambling-modulating all-in-one device developed by NetUP. It has 16 multiplexing channels, 16 scrambling channels and 16 QAM (DVB-C) modulating channels, and supports maximum 1024 IP input through the GE port and 16 non-adjacent carriers (50MHz~960MHz) output through the RF output interface.

### Appearance and illustration



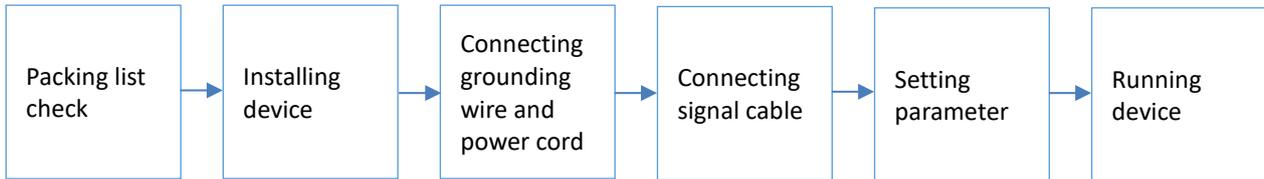
1	NMS/CAS: network management port and CA data port
2	RF output port
3	Reset IP: reset the device's IP address to its default value
4	Link/Act Indicators
5	Data Input / Output 1/2 (SFP)
6	Power switch
7	Power socket
8	Grounding pole

## Specifications

Input stream	Input	512×2 IP input, 2 100/1000M Ethernet Port (SFP)
	Transport Protocol	TS over UDP/RTP/RTSP, unicast and multicast, IGMP V2/V3
	Transmission Rate	Max 840Mbps for each GE input
Mux	Input Channels	1024
	Output Channels	16
	Max PIDs	180 per channel
	Functions	PID remapping (auto/manual, optional)
Scrambling	Max simulcrypt CA	4
	Scrambling Standard	ETR289, ETSI 101 197, ETSI 103 197
	Connection	Local/remote connection
Modulation	QAM Channel	16 non-adjacent carrier
	Modulation Standard	EN300 429/ITU-T J.83A/B
	Symbol Rate	5.0~7.0Msps, 1ksps stepping
	Constellation	16, 32, 64, 128, 256QAM
	FEC	RS (204, 188)
RF output	Interface	1 F type output port for 16 carriers, 75Ω impedance
	RF Range	50~960MHz, 1kHz stepping
	Output Level	-20dBm~+10dBm(87~117dbμV), 0.1dB stepping
	MER	≥ 40dB
	ACLR	-60 dBc
TS output	16×IP output over UDP/RTP/RTSP, unicast/multicast, 2 100/1000M Ethernet Ports	
System	Network management software (NMS) support	
Other parameters	Dimension (W×L×H)	420 mm × 440 mm × 44,5 mm
	Approx. weight	3kg
	Temperature	0~45°C(operation), -20~80°C(storage)
	Power requirements	AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz
	Power consumption	15.4W

## Chapter 2 Installation guide

### Device's installation flow chart



*Before installing and connecting the device, carefully read the environment and grounding requirements, as well as safety instructions for the sake of your safety and for the safety of the device*

### Packing list check

Check items according to packing list. Normally it should include the following items:

- NetUP Streamer 16xC
- Power Cord

### Safety instructions

- Before installing and connecting the device make sure that the device was damaged during delivery.
- Install the device in an appropriate place. The device is designed to work in a clean and dry room. It must be operated and maintained free of dust.
- Before switching on the device make sure that it is adjusted to the mains voltage you intend to use. Make sure that you keep within the specifications – AC 100V-220V±10%, 50/60Hz.
- Check that all the cables are connected properly. Connect cables only to a device that is turned off.

## Environment requirement

Item	Requirement
Room space	When installing a rack in the room, make sure the distance between two rows of racks is 1.2~1.5m and the distance to the wall is at least 0.8m.
Room floor	Electric isolation. Dust free. The volume resistivity of ground anti-static material: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$ . Grounding current limiting resistance: 1M (Floor bearing should be greater than $450 \text{Kg/m}^2$ ).
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	Install rubber strip for sealing door-gaps and dual level glasses for windows
Walls	Can be covered with wallpaper or dark paint.
Fire protection	Fire alarm system and extinguisher.
Power	The device requires AC 100V-220V±10%, 50/60Hz. Please carefully check before running.

## Grounding requirement

- Connect the ground wire to the grounding hardware on the device. Ground resistance should be no more than  $1 \Omega$



*Grounding is essential for device's functionality, surge and electronic interference protection*

- Keep proper contact with the metal housing of the device
- Grounding wire must be made out of copper and as thick and short as possible
- Make sure the two ends of grounding wire conduct electricity and are not rusty
- It is prohibited to use any other devices as a part of grounding electric circuit
- All racks should be connected with a protective copper strip. Ground loops should be avoided
- Grounding wire's contact area with the rack should be no less than  $25 \text{mm}^2$

## Chapter 3 WEB NMS Operation

Use the Web interface to control NetUP Streamer 16xC.

### Login

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



*Make sure that the computer's IP address is different from the device's IP address; otherwise, it would cause an IP conflict*

The default IP address of NetUP Streamer 16xC is **192.168.0.136** or **10.0.0.103**. Thus, set the computer's IP address to 192.168.0.X or 10.0.0.X, where X can be from 0 to 255, except 136 or 103. Open a web browser, enter the device's IP address in the browser address bar and press **Enter**. If the network is configured correctly, you will see the login interface (Figure 1).

Enter username and password and click **LOGIN** to enter the web interface. Default username is "admin", default password is "admin".

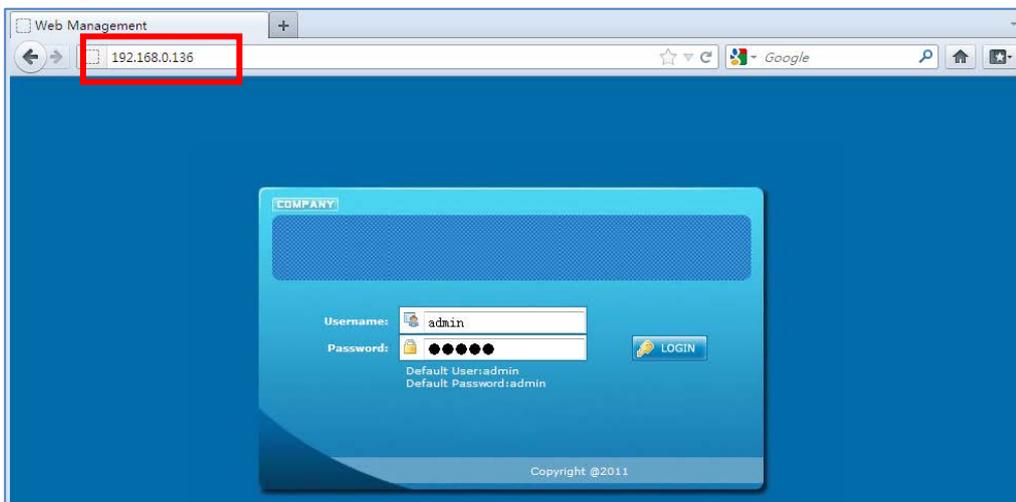


Figure-1

## Summary → Status

After login, you will get the **Status** page which displays the current system status (Figure-2).

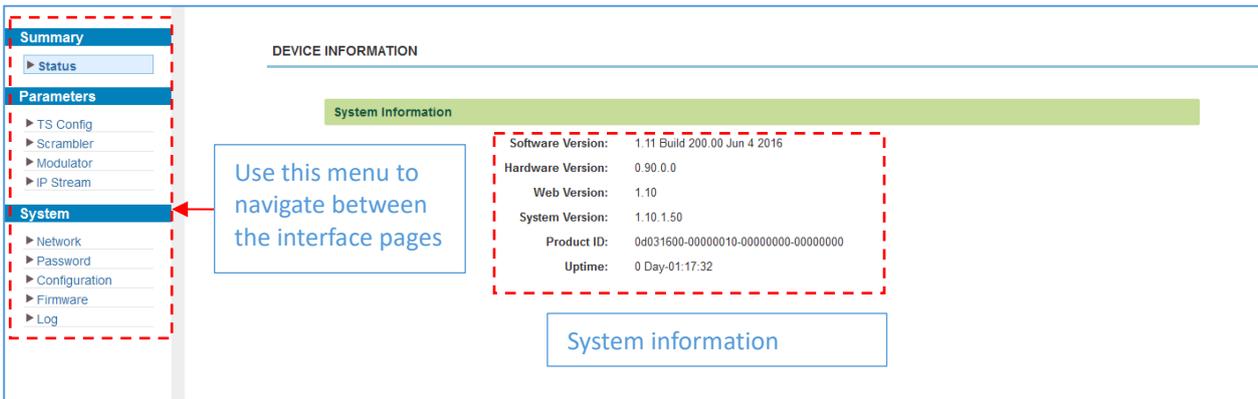


Figure-2

## Parameters → TS Config

Use the **TS Config** page to configure the TS output parameters and select one of the following tabs: **Output TS**, **Stream Select**, **General**, **PID Bypass**.

### Output TS

Select the **Output TS X** tab, to open the list of available TS channels. Click one of the channels to select it (Figure-3).

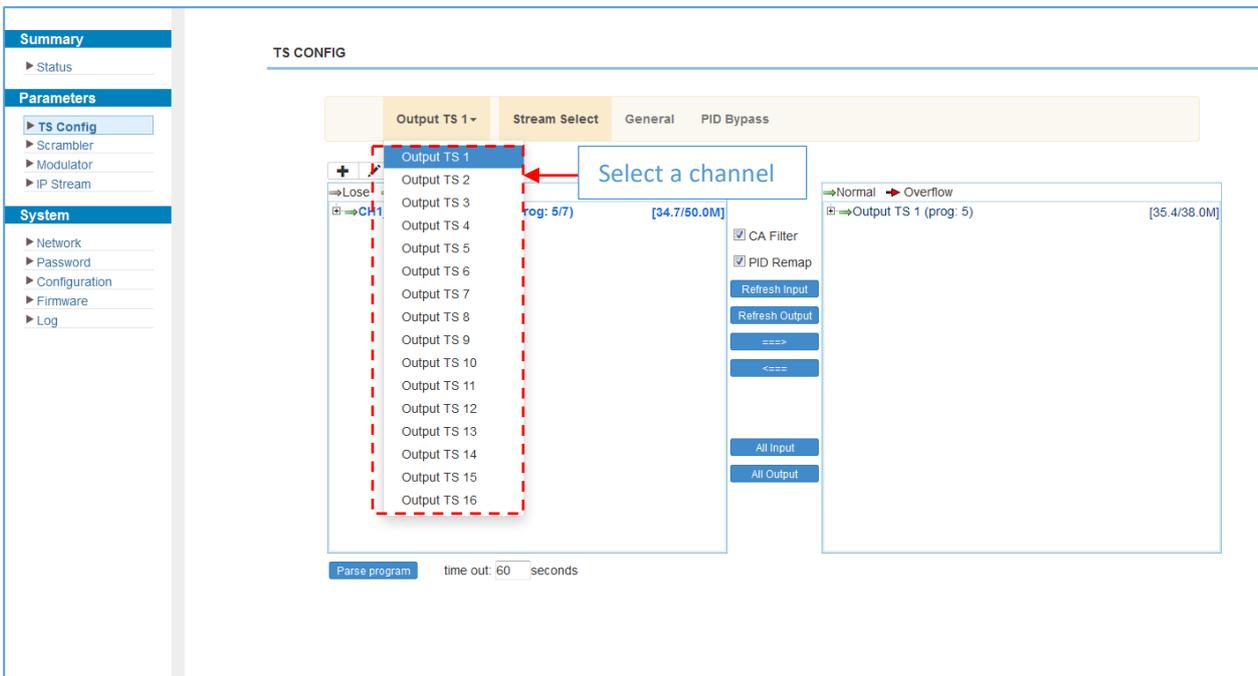


Figure-3

## Stream Select

Select the **Stream Select** tab to select streams that should be sent to Mux out (Figure-4).

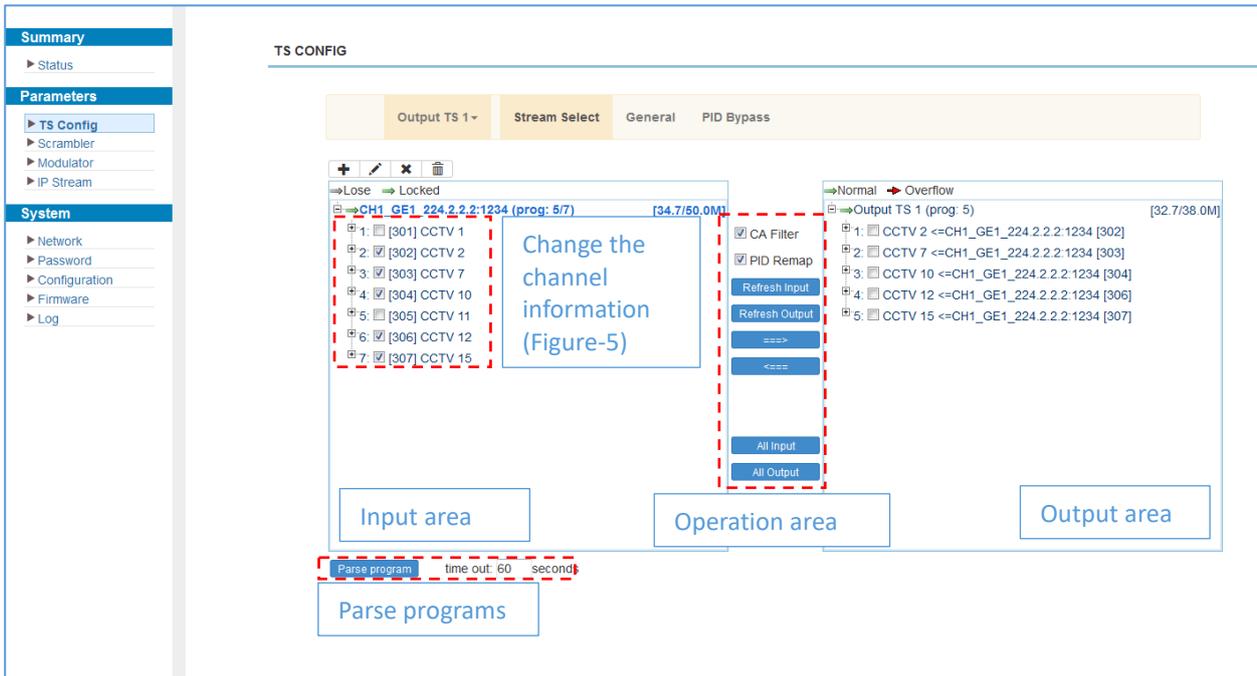


Figure-4



Figure-5

**Operation area:**

<b>CA Filter</b>	filter or not filter the source CA information
<b>PID Remap</b>	enable or disable PID remapping
<b>Refresh input / output</b>	refresh an input or an output
<b>====&gt; / &lt;====</b>	move programs between the input and the output areas
<b>All input / output</b>	select all input or output programs

## General

Select the **General** tab to edit common parameter for output streams (Figure-6).

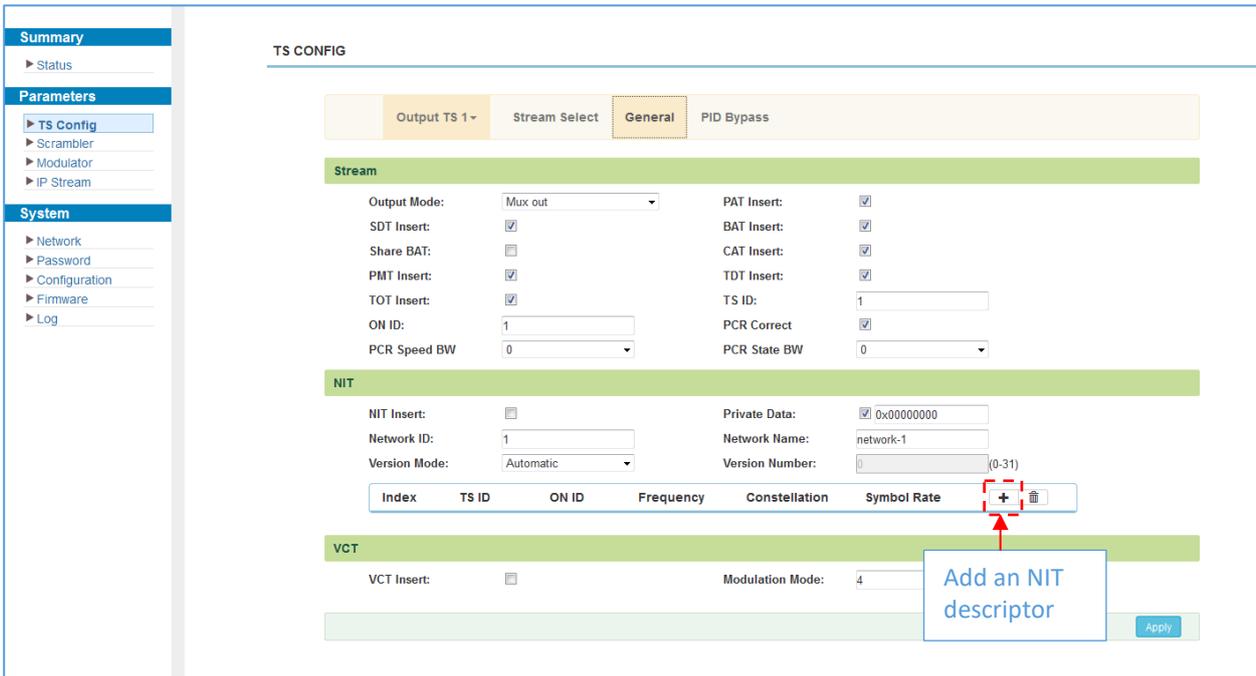


Figure-6

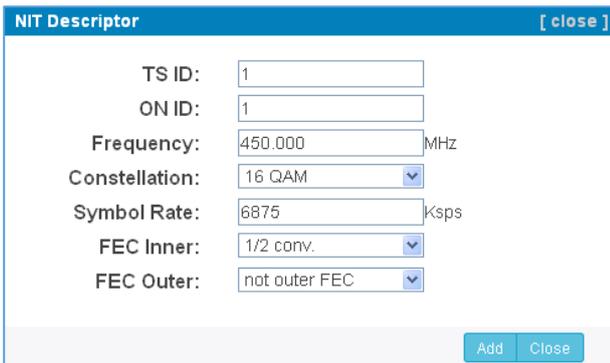


Figure-7

## PID Bypass

Select the **PID Bypass** tab to edit the list of PIDs that should pass through (Figure-8).

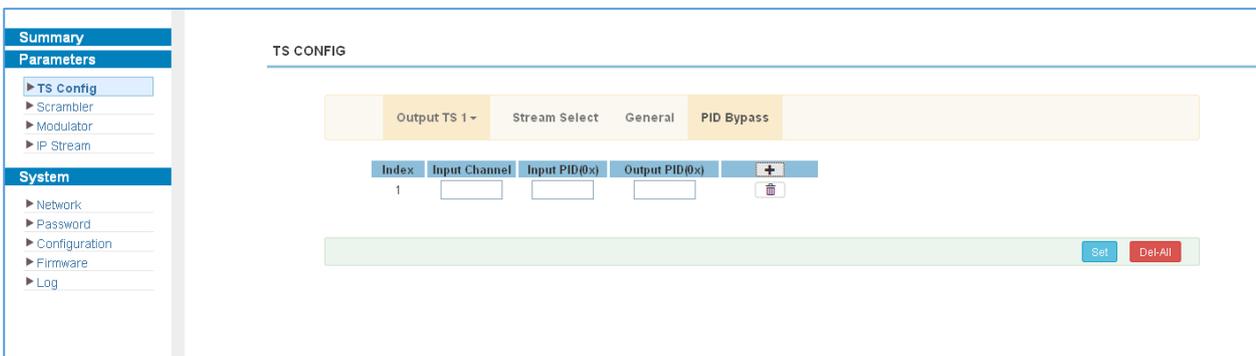


Figure-8

## Parameters → Scrambler

Use the **Scrambler** page to manage scrambling options and select programs to scramble (Figure-9).

Figure-9

## Parameters → Modulator

Use the **Modulator** page to edit RF output parameters (Figure-10).

Channel	Frequency	Constellation	Symbol Rate	Gain offset	Status	Bit(Act/Max)
1	650.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	34.7/38.0 M
2	658.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
3	666.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
4	674.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
5	682.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
6	690.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
7	698.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
8	706.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
9	714.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
10	722.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
11	730.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
12	738.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
13	746.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
14	754.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
15	762.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M
16	770.000 MHz	64 QAM	6875 Ksps	0.0 dB	●	0.0/38.0 M

Figure-10

**Quickly Config.** [ close ]

Standard: J.83A(DVB-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

Figure-11

**Channel 1 Config.** [ close ]

Standard: J.83A(DVB-C) ▾

Level(All Carriers): -10.0 (-12 ~ +13 dBm)

---

Channel Enable:

Frequency: 474.000 (30 ~ 900 MHz)

Constellation: 64 QAM ▾

Symbol Rate: 6875 (5000 ~ 7000 Ksps)

Gain offset: 0.0 (-12 ~ 0 dB)

Apply Close

Figure-12

## Parameters → IP Stream

NetUP Streamer 16xC supports TS IP output (16×MPTS) via the DATA port. Use the **IP Stream** page to set IP output parameters (Figure-13).

**Summary**

- ▶ Status

**Parameters**

- ▶ TS Config
- ▶ Scrambler
- ▶ Modulator
- ▶ IP Stream

**System**

- ▶ Network
- ▶ Password
- ▶ Configuration
- ▶ Firmware
- ▶ Log

**IP STREAM**

Channel Info.(Alarm/Active/Total): 0/1/16

Channel	IP Address	Port	Protocol	Pkt Length	Null PKT Filter	Status	Bit(Act/Max)	
1	224.2.2.2	2001	UDP	7	<input type="checkbox"/>	●	32.5/38.0 M	✍
2	224.2.2.2	2002	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
3	224.2.2.2	2003	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
4	224.2.2.2	2004	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
5	224.2.2.2	2005	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
6	224.2.2.2	2006	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
7	224.2.2.2	2007	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
8	224.2.2.2	2008	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
9	224.2.2.2	2009	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
10	224.2.2.2	2010	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
11	224.2.2.2	2011	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
12	224.2.2.2	2012	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
13	224.2.2.2	2013	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
14	224.2.2.2	2014	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
15	224.2.2.2	2015	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍
16	224.2.2.2	2016	UDP	7	<input type="checkbox"/>	●	0.0/38.0 M	✍

Click to edit parameters (Figure-14)

Figure-13

Channel 1 Config.
[ close ]

Enable:

Source Select:

IP Address:

Port:

Protocol:

Pkt Length:

Null PKT Filter:

Figure-14

## System → Network

Use the **Network** page to edit networking parameters (Figure-15).

Summary

- ▶ Status

Parameters

- ▶ TS Config
- ▶ Scrambler
- ▶ Modulator
- ▶ IP Stream

System

- ▶ **Network**
- ▶ Password
- ▶ Configuration
- ▶ Firmware
- ▶ Log

NETWORK

**NMS**

IP Address:

Subnet Mask:

Gateway:

Web Manage Port:

MAC Address: 20:3f:12:34:56:78

**Scrambler**

IP Address:

Subnet Mask:

Gateway:

**DATA**

IP Address:

Subnet Mask:

Gateway:

MAC Address: 20:4f:12:34:56:78

TS Output: GE1  GE2

Figure-15



13

## System → Password

Use the **Password** page to change current password and username (Figure-16).

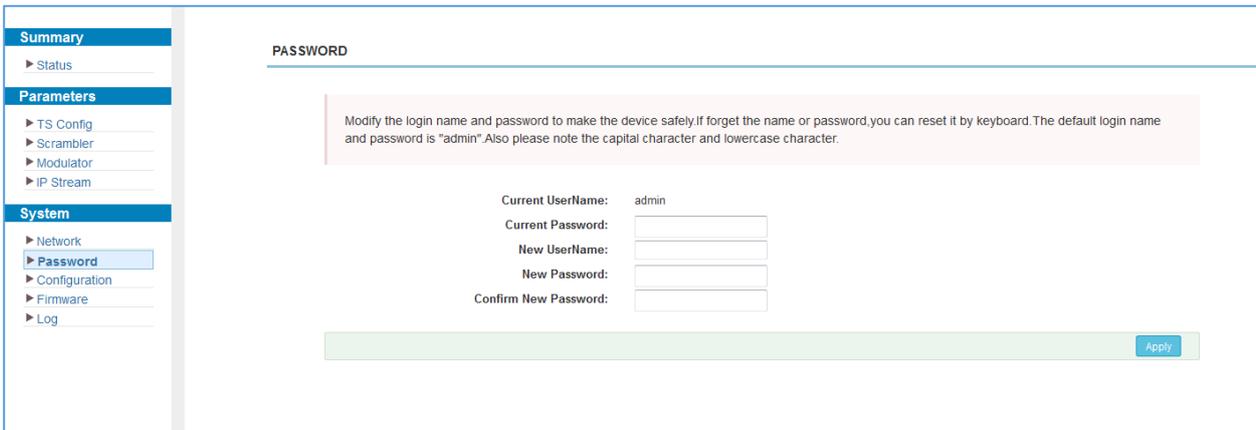


Figure-16

## System → Configuration

Use the **Configuration** page to save or restore system configuration, to revert to factory settings, to work with backups or to load configurations (Figure-17).

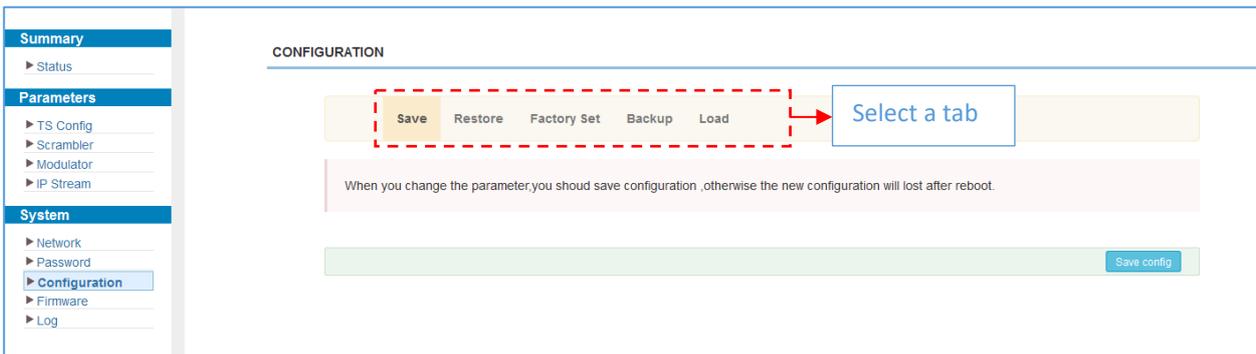


Figure-17

## System → Firmware

Use the **Firmware** page to update firmware for the device (Figure-18).

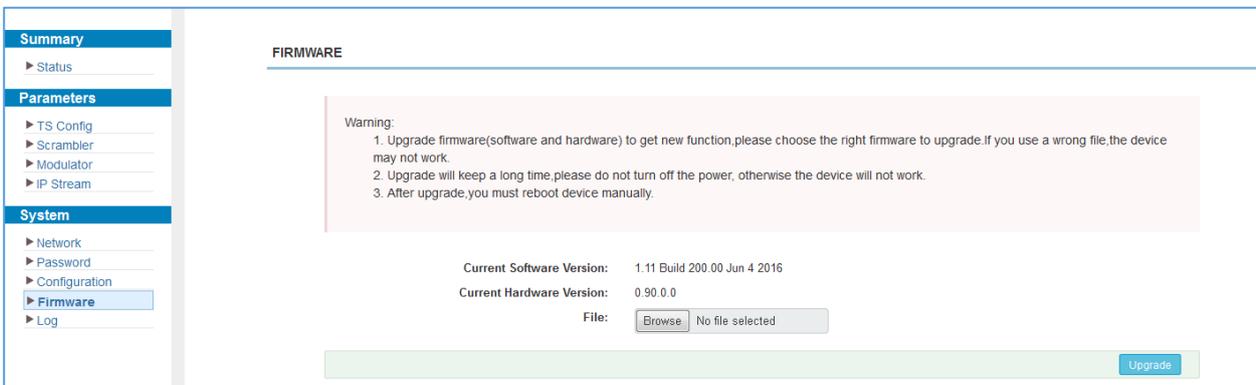


Figure-18

## System → Log

Use the Log page to see system logs (Figure-19).

The screenshot shows the 'LOG' page in the NetUP Streamer 16xC web interface. On the left is a sidebar with sections: Summary (Status), Parameters (TS Config, Scrambler, Modulator, IP Stream), and System (Network, Password, Configuration, Firmware, Log). The main content area is titled 'LOG' and contains a 'Log Type' dropdown menu set to 'Kernel Log', an 'Auto Refresh' dropdown set to '0', and 'Export' and 'Refresh' buttons. Below these controls is a scrollable log window displaying the following text:

```
[ 0.000000] al CPU 0x0
[ 0.000000] System Log
[ 0.000000] Linux version 3.19.0-xilinx (root@localhost.localdomain) (gcc version 4.9.1 (Sourcery CodeBench Lite 2014.11-30) ) #134 SMP PREEMPT
[ 0.000000] CPU: ARMv7 Processor [413fc090] revision 0 (ARMv7), cr=18c5387d
[ 0.000000] CPU: PIPT / VIPT nonaliasing data cache, VIPT aliasing instruction cache
[ 0.000000] Machine model: xlnx.zynq-7000
[ 0.000000] cma: Reserved 16 MIB at 0x15800000
[ 0.000000] Memory policy: Data cache writealloc
[ 0.000000] On node 0 totalpages: 98304
[ 0.000000] free_area_init_node: node 0, pgdat 40560200, node_mem_map 57c10000
[ 0.000000] Normal zone: 768 pages used for memmap
[ 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
```

Figure-19

## Troubleshooting

Check the following before troubleshooting:

- Whether the server room is well ventilated and hot air from the back panel of the device is effectively removed?
- Does the supply voltage meet the power requirements of the device?
- Is the RF output level vary within the tolerant range?
- Are all cables connected correctly?

Turn off the device and unplug the power cord in the following cases:

- The power cord or socket is damaged.
- A liquid is splashed on the device.
- A short circuit has occurred.
- The device is in damp environment.
- The device suffered from physical damage.
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed.



*Frequent on and off switching is prohibited; the interval between switching the device on and off must be more than 10 seconds*