



**H-4ATSC-QAM-IP**

**H-IRD-V4**

**Quad DVB-S/S2 Tuner**

**Integrated Decoder**

**User's Manual**



**Thor Broadcast**

**Los Angeles CA**

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# Chapter 1 Product Outline

## 1.1 Outline

Thor Broadcast's Integrated Decoder, multi-input modulator is an all-in-one device which integrates demodulation, trans-mux and modulation in one unit to convert signals into RF output. It is a 1-RU chassis which supports 4 tuner inputs to receive signals from satellite(S/S2), cable or terrestrial (ATSC). To meet customers' various requirements, the H-4ATSC-QAM-IP / H-IRD-V4 is also equipped with 2 ASI inputs and 1 output with 2 separate ASI ports and 4 MPTS UDP IP ports. The output modulated signals are to be received by TV Tuners, STB's etc.

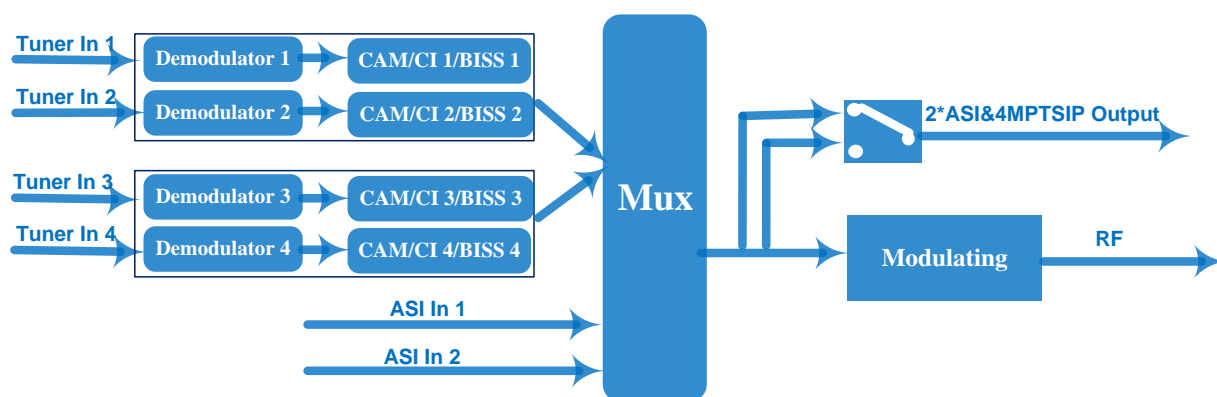
The USB port is designed to record encoded video (TS) and save it in TS files in the USB Key or Hard Disks, and then the TS files can be played back through the USB port.

The four CAMs/CIs and BISS modules can descramble the programs input from 4 Tuner inputs. Its pluggable structure design greatly facilitates the change of modules (demodulator) as needed.

## 1.2 Features

- 4 DVB-C/T/T2/S/S2 Tuner and 2 ASI input ports
- Accurate PCR adjusting
- PSI/SI editing and inserting
- PID Remapping
- Excellent RF output performance index, MER $\geq$ 42db
- 4\*DVB-C RF out
- 2 separate ASI&IP (4\*MPTS over UDP) mirror 4 RF output
- 4 CAM can decrypt multiple programs from 4 Tuner inputs
- BISS descrambling
- Record encoded TS and playback TS files (\*.ts) through USB port
- LCD display and keyboard, web management, updates via web and USB

## 1.3 Principle Chart



## 1.4 Technical Specifications

Input	4 S/S2 Tuner and 2 ASI input		
Tuner Section	DVB-S	Input Frequency	950-2150MHz
		Symbol rate	2-45Msps
		Signal Strength	-65~-25dBm
		FEC Demodulation	1/2, 2/3, 3/4, 5/6, 7/8 QPSK
	DVB-S2	Input Frequency	950-2150MHz
		Symbol rate	QPSK 1~45Mbauds 8PSK 2~30Mbauds
		Code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
		Demodulation Mode	QPSK, 8PSK
Multiplexing	Maximum PID Remapping	128per input channel	
	Function	PID remapping (automatically or manually)	
		Accurate PCR adjusting	
		Generate PSI/SI table automatically	
Modulation	DVB-C	Standard	J.83A, J.83B, J.83C
		MER	≥42dB
		RF frequency	30~950MHz, 1KHz step
		RF output level	-30.0~ 0.0 dbm (77~107 dbμV), 0.1db step
		Symbol rate	2.5 – 4.66 Msps, 5.0 - 8.0 Msps
		J.83A	Constellation 16/32/64/128/256QAM
			bandwidth 8M
		J.83B	Constellation 64QAM, 256QAM
			bandwidth 6M
		J.83C	Constellation 64QAM, 256QAM

			bandwidth	6M
System	Local interface	LCD + control buttons		
	Remote management	Web NMS		
	Stream Out	2 ASI out(BNC type)		
		IP (4*MPTS over UDP) out (RJ45, 1000M)		
	Upgrading	Web and USB		
General	Dimension	482mm×300mm×44.5mm(W*D*H)		
	Weight	3.7kg		
	Temperature	0~45℃(Operation) ; -20~80℃(Storage)		
	Power	AC 100V±10%/60Hz; AC 220V±10%, 50/60HZ		
	Consumption	25W		

## 1.5 Appearance and description

Front Panel Illustration:



1	LCD Display
2	Indicator Area
3	Control Buttons
4	DATA port
5	NMS port for network management connection
6	USB port for upgrade/record encoded TS/playback TS files (*.ts).

### Rear Panel Illustration:



1	Module 1: with 2 CAMs /Smart card slots and 2 RF signal input and loop-through
2	Module 2: with 2 CAMs /Smart card slots and 2 RF signal input and loop-through
3	2 separate ASI input Interface (BNC)
4	2 separate groups of ASI output (BNC)
5	RF out Interface
6	Power switch/Fuse/Socket
7	Grounding Wire

## Chapter 2 Installation Guide

### 2.1 Contents Check

The contents of your new IRD V4 should include the following items:

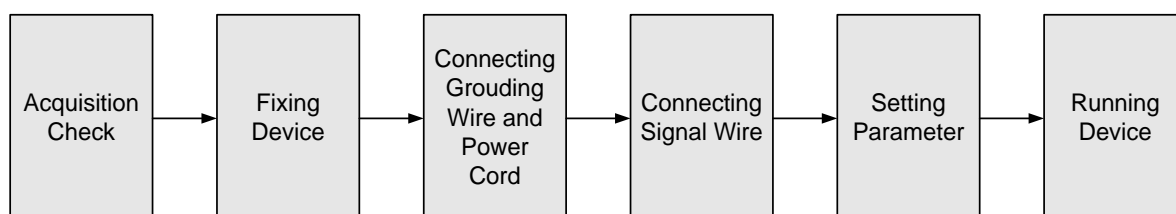
- H-IRD-V4 Quad Tuner Decoder 1pcs
- User's Manual 1pcs
- RF/Loopout Cables 4 PCs
- ASI Cable 1pcs
- Power Cord 1pcs

### 2.2 Installation Preparation

When you install your device, please follow these guidelines and steps. The details of installation will be described in the rest part of this chapter, you can also refer to the rear panel chart during the installation.

- Checking the possible device for missing pieces or damage during transport
- Preparing relevant rack for installation
- Installing unit
- Connecting signal cables
- Connecting communication port (if it is necessary)

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



## 2.2.2 Environment Requirement

Item	Requirement
Machine Hall Floor	Electric Isolation, Dust Free 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 450Kg/m <sup>2</sup> )
Environment Temperature	5~40°C(sustainable ), 0~45°C(short time), installing air-conditioning is recommended
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
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 100-240V 50-60Hz. Please carefully check before running.

## 2.2.3 Grounding Requirement

- ✓ It is important to keep this device grounded to ensure all of the modules function correctly. Correctly grounding the device will also help prevent any electrical interference, lightning. Etc. Also it helps reject minor interference that may disrupt the devices ability to function smoothly. General rule of them, make sure the device is grounded when installing anywhere.
- ✓ Always use copper wire. When applied correctly the ground must be wrapped well to ensure maximum conduction so it can reduce any high frequencies. The copper ground wire should also be as short and thick as possible
- ✓ Installer must make sure that the two ends of the ground are well conducted and have appropriate anti-rust properties.
- ✓ It is prohibited to use any other device as part of the grounding electric circuit.
- ✓ The area of the conduction between the ground wire and device's frame should be no less than 25 m<sup>2</sup>.



## 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 it, 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**

You can insert one end into power supply socket, while the other end can be connected to AC power outlet.

- **Connecting Grounding Wire**

When the device solely connects to protective ground, the grounding resistance should be smaller than  $1\Omega$ .

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**⚠ Caution:**

**Before connecting power cord to the IRD, you should set the power switch to “OFF”.**

## 2.4 Signal Cable Connection

The details are as follows:

IRD V4 Cable Illustration:

- **NMS Cable illustration (CAT5):**



- **RF Input/Loop Cable Illustration:**



- **ASI Input Cable Illustration:**



## Chapter 3 Operation

The front panel of the Thor Broadcast H-IRD-V4 is the user-operating interface and the equipment can be easily managed by anyone according to the directions displayed on the LCD:

### **Keyboard Function Description:**

**MENU:** Cancel current entered value, resume previous setting; Return to previous menu.

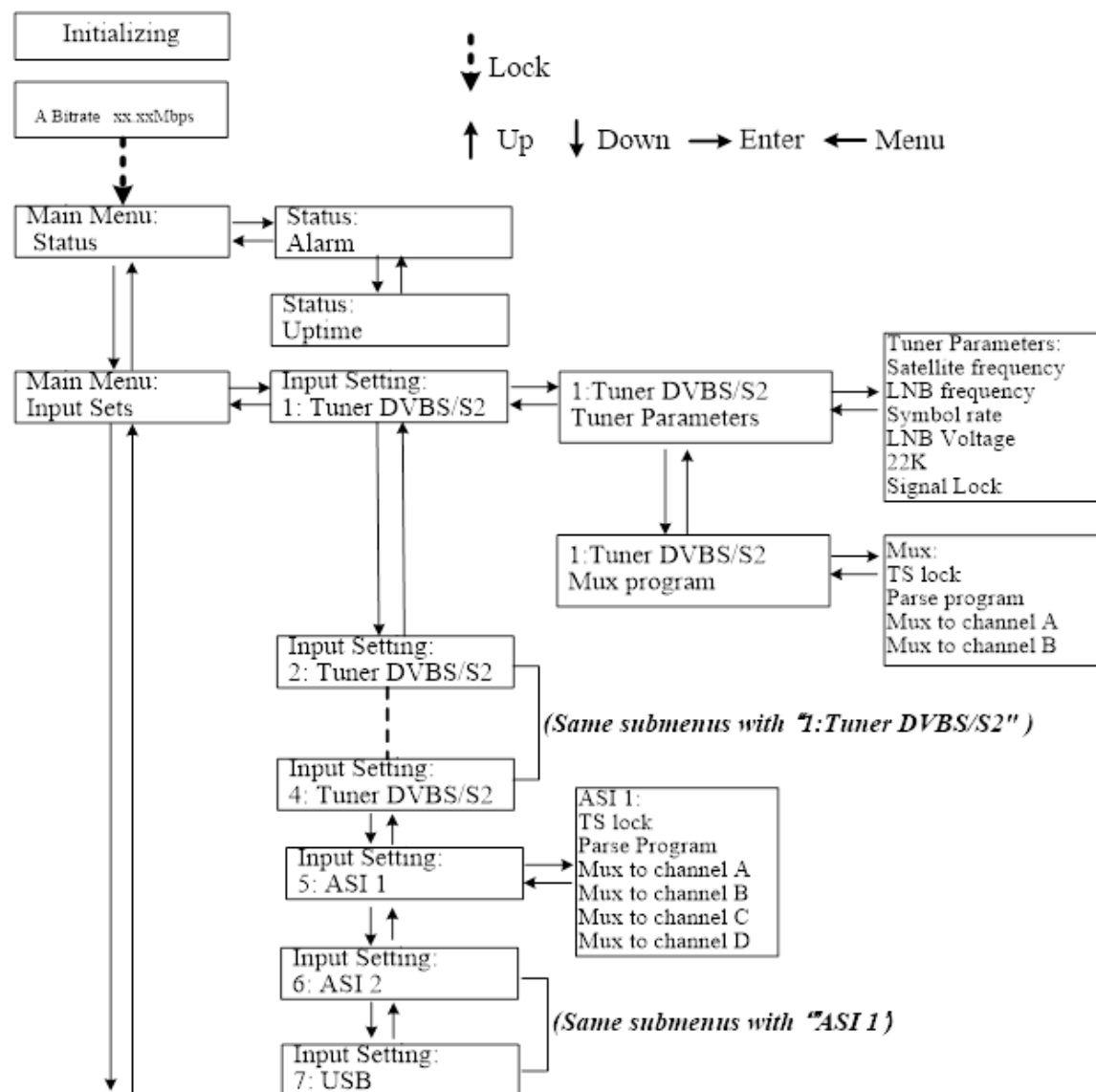
**ENTER:** Activate the parameters which need modifications, or confirm the change after modification.

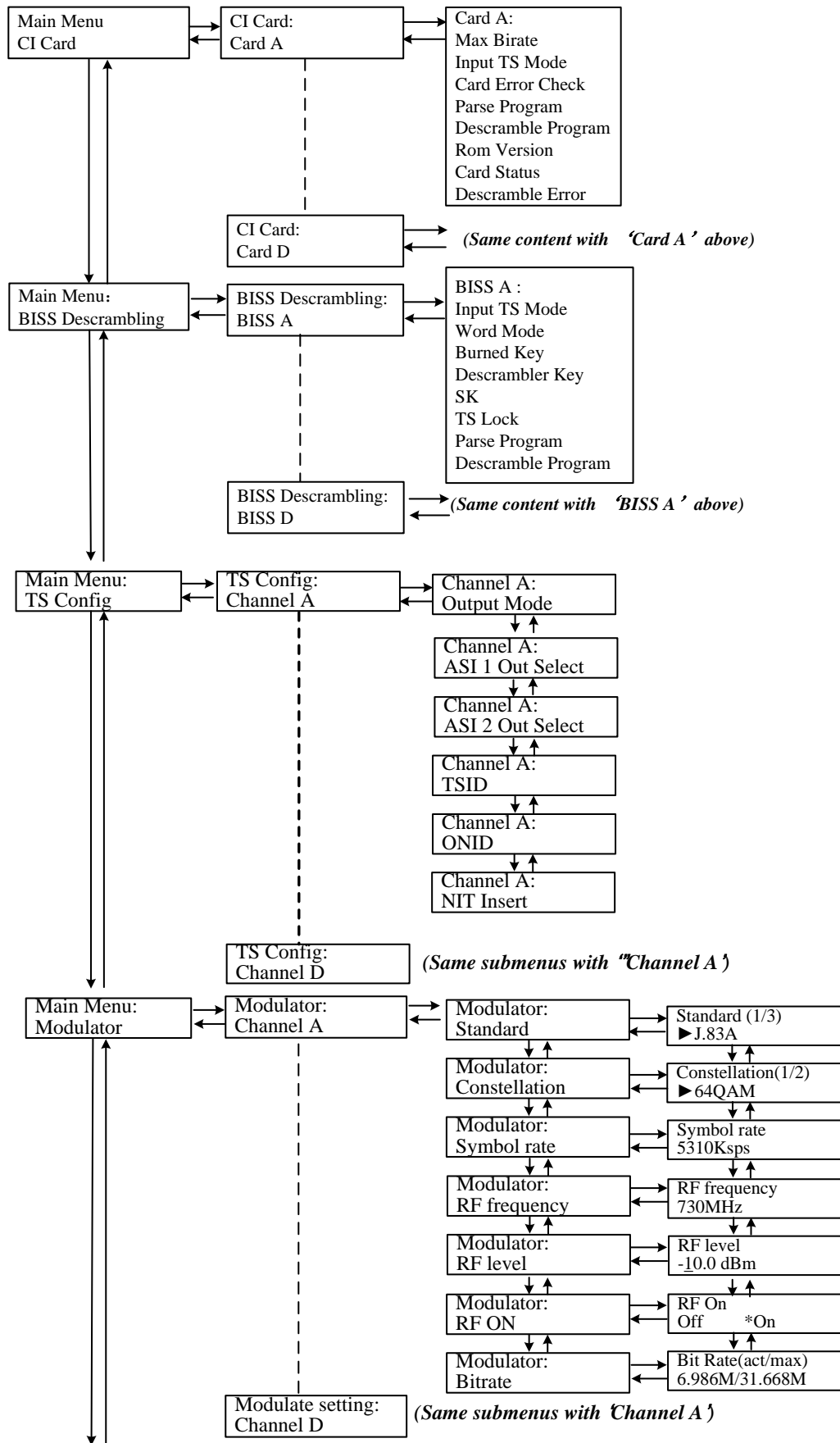
**LEFT/RIGHT:** Choose and set the parameters.

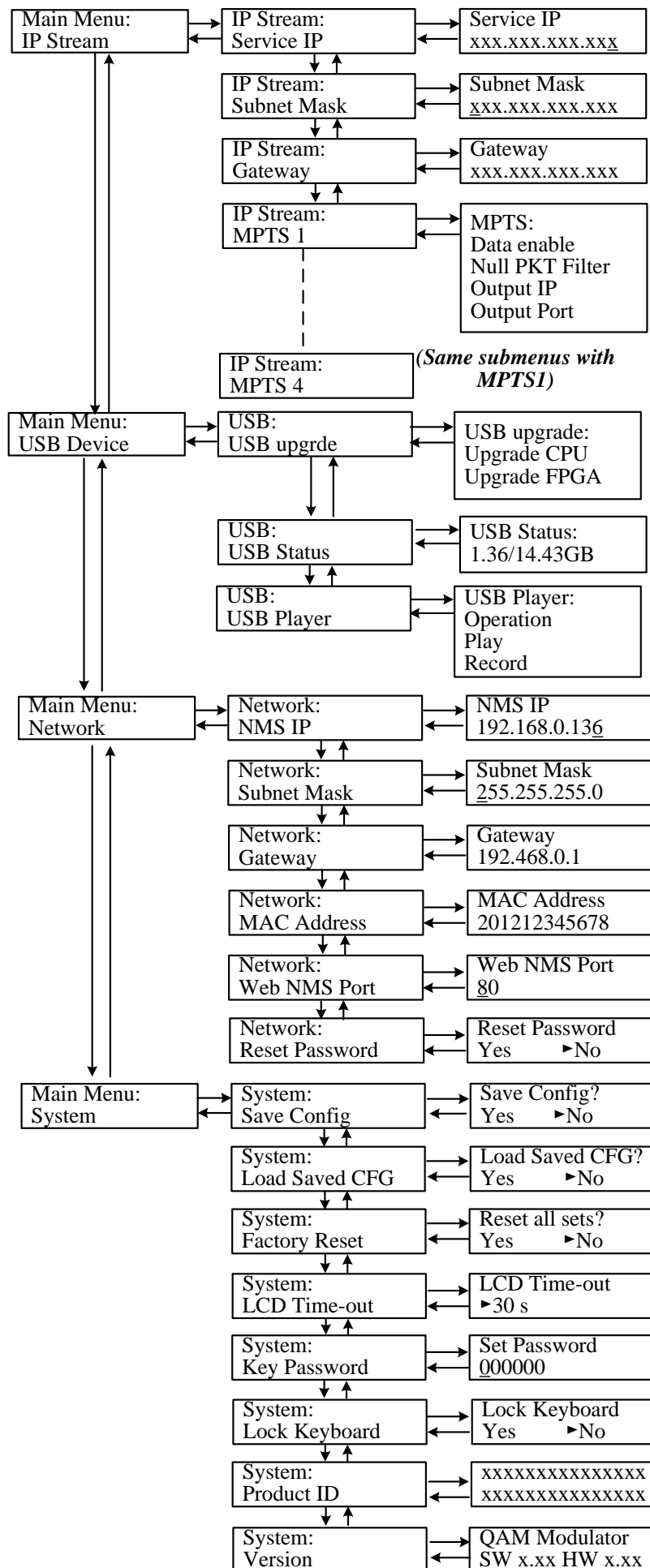
**UP/DOWN:** Modify activated parameter or paging up/down when parameter is inactivated.

**LOCK:** Lock the screen/cancel the lock state. After pressing the lock key, the LCD will display the current configuring state.

### 3.1 LCD Menu Tree

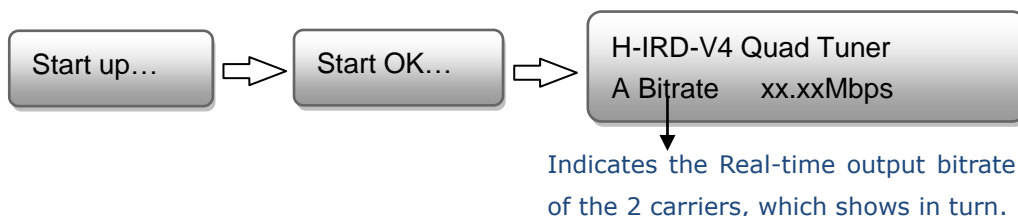




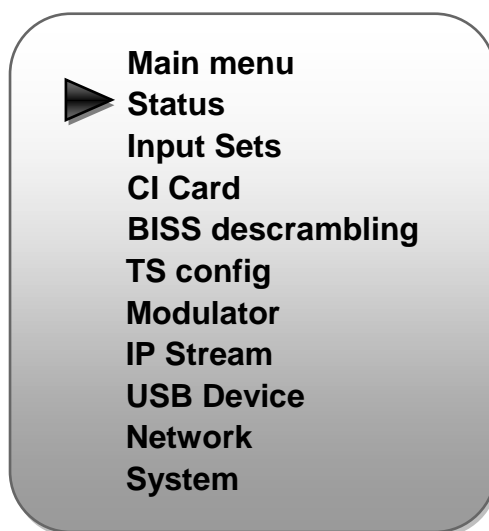


## 3.2 General Setting

Switch on the device and after a few seconds' initialization, it presents start-up pictures as shown below:



Press 'LOCK' key on the front panel to enter the main menu. The LCD will display the following pages where user can configure the parameters for the device:

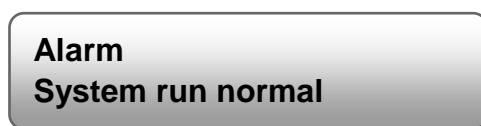


You can adjust all the settings according to the 8 directions displayed on the LCD. You can press UP/DOWN buttons to specify menu item, and then press ENTER to enter the submenus as below:

### 3.2.1 Status

#### ➤ Alarm

The alarm indicator will turn on if there is no A/V signals inputting or outputting or if the bit rate overflows. You then can enter this menu to check the error type. Otherwise it shows the 'system run normal'.



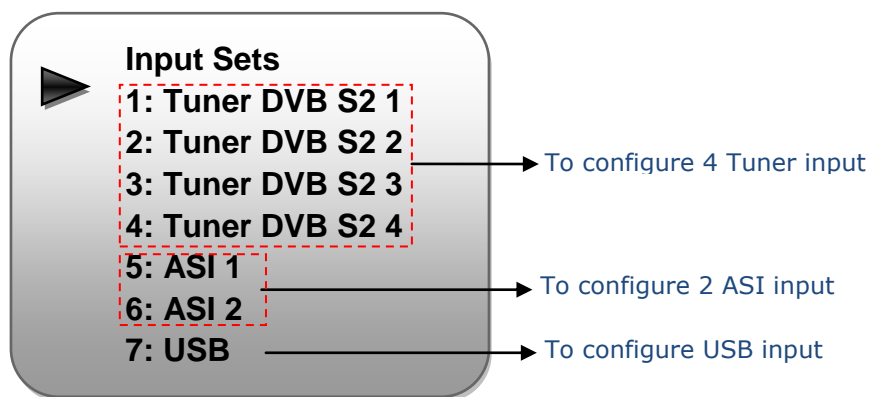
### ➤ Uptime

Press Enter to enter “Status” and it displays the working time duration of the device. It times upon power on

**Uptime**  
**2 Days-10:30:20**

## 3.2.2 Input Sets

The IRD-V4 supports 4 tuner inputs and 2 ASI inputs. Please connect the signals to the input interfaces and enter ‘Input Sets’ to configure the tuner and ASI input parameters. It displays as shown below:



### ➤ Tuner DVB S/S2 1~4

Press ENTER key to enter ‘Tuner DVB S2 1’ to configure tuner 1 input parameters, and it displays below image. The settings principle for the 4 tuners is the same as ‘Tuner DVB S2 1’.

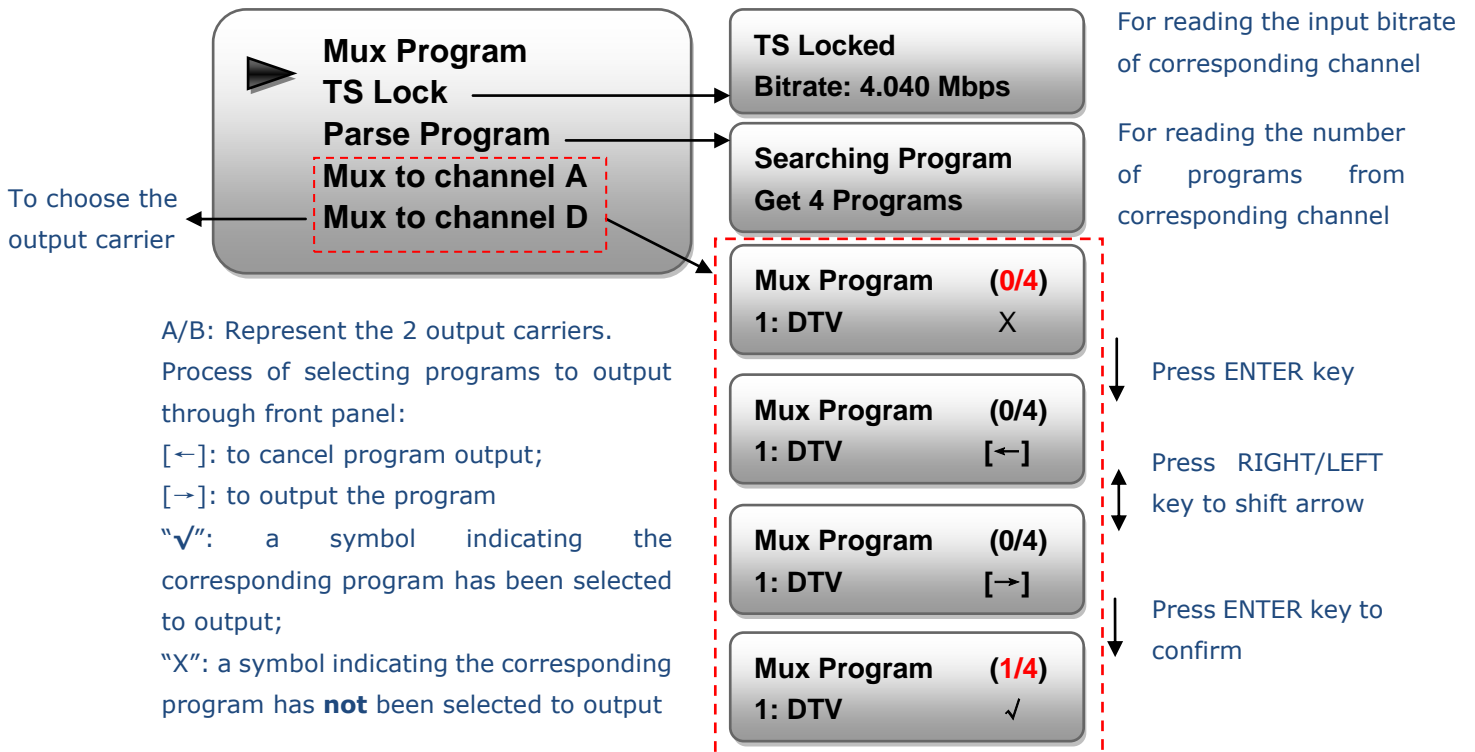
**1: Tuner DVB S2 1**  
**Tuner parameters**  
**Mux program**

**Tuner parameters:** Enter this menu to configure the each parameter according to your signal source to receive TS. (Make sure the responding RF cable is properly connected.)

**Tuner parameters:**  
**Satellite frequency**  
**LNB frequency**  
**Symbol rate**  
**LNB voltage**  
**22K**  
**Signal Lock**



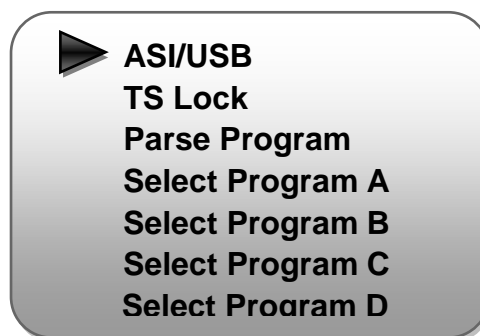
**Mux Program:** Parse the Tuner input program list and select programs to mux out via the 4 carriers in this menu.



### ➤ ASI 1~2/USB

Press ENTER key to enter 'ASI/USB' to select ASI/USB input program(s) to mux out.

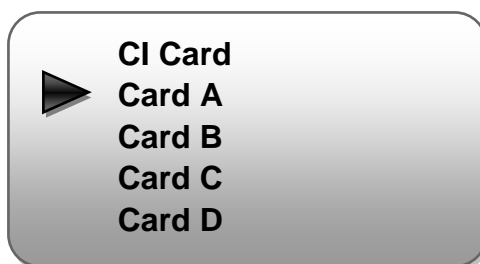
The setting principle for the 2 ASI and USB are the same.



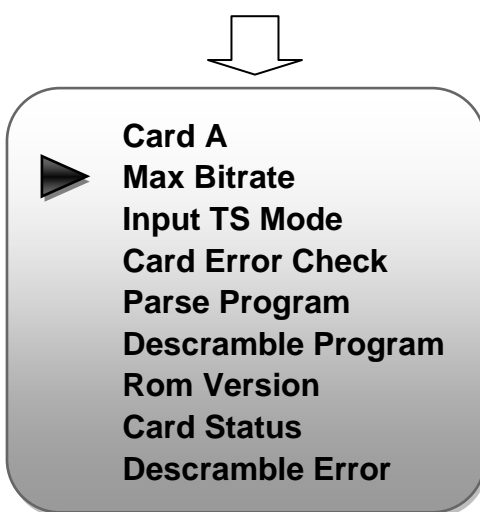
The operation method is the same as described as the tuner input above.

## 3.2.3 CI Card

This unit supports 4 CI cards to descramble programs from Tuner input. One CI card can be applied to descramble one Tuner input signal source. You can press ENTER key to enter 'CI Card' to configure the 4 cards respectively.

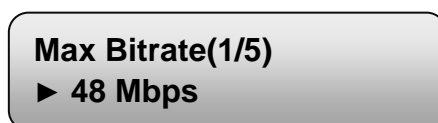


Press ENTER key to enter Card A (or Card B/C/D), the setting principle is the same.



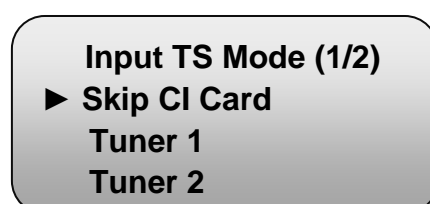
#### ➤ Max Bit rate

CI Max Bitrate options range from 48-108Mbps. Move the triangle to select a value as principle: Actual Input Bitrate ≤ Max Bitrate ≤ CI Max decrypting capacity



#### ➤ Input TS Mode

One CI card can be applied to descramble Tuner 1 or Tuner 2 input signal sources. 'Skip CI card' means to skip the card which is used for FTA stream.



#### ➤ Card Error Check

Decide whether to enable or disable the card error check function in this menu.

**Card Error Check (1/2)**  
▶ **Enable**

### ➤ Parse Program

Read the quantity of programs parsed from the de-scrambled channel.

**Searching Program**  
**Get 8 Programs**

### ➤ Descramble Program

Select program(s) from the searched out programs to descramble. The quantity to be descrambled will depend on the CAM/CI performance you apply to.

▶ **1 CETV 1**      ✓  
**2 CCTV 4A**      X

### ➤ Rom Version/Card Status/Descramble Error

Read the other info about the CI card in the following menus.

**Rom Version**  
**X.X.X.X**

**Card Status**  
**Normal**

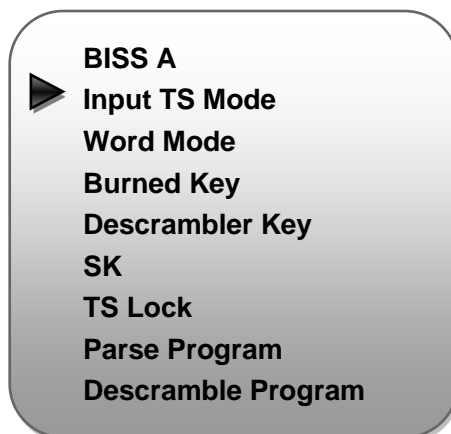
**Dscramble Error**  
**Normal**

## 3.2.4 BISS Descrambling

Thor's IRD V4 also supports BISS to descramble encrypted programs from Tuner input. Enter 4 BISS descrambling to configure the 4 BISS respectively. One BISS can be applied to descramble one corresponding Tuner input signal sources.

▶ **CI Card**  
**BISS A**  
**BISS B**  
**BISS C**  
**BISS D**

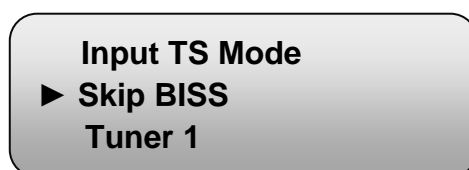
Press ENTER key to enter BISS A (or BISS B/C/D), the setting principle is the same:



#### ➤ Input TS Mode

One BISS can be applied to descramble one corresponding Tuner input signal sources.

‘Skip BISS’ means to skip the card which is used for FTA stream.



#### ➤ Word Mode / Burned Key / Descrambler Key / SK

You need to input keys to descramble programs as per the BISS scrambling side which usually is DVB-S/S2 modulator.

The descrambling principle is as follows on the chart below:

Modulating Side (BISS SCR)	Receiving Side (BISS DESCR)	Digit (0x----)
Mode 1+SW Data	Mode 1+Descrambler Key	12
Mode E+ESW Data + Device	Mode E + Descrambler Key + Burned Key	16
Mode E+ESW Data + Input ID	Mode E + Descrambler Key + SK	14

#### ➤ TS Lock

Read the real-time bitrate of the corresponding channel.

### ➤ Parse Program

Read the quantity of programs parsed from the de-scrambled channel.

**Searching Program  
Get 7 Programs**

### ➤ Descramble Program

Select program(s) from the searched out programs to descramble.

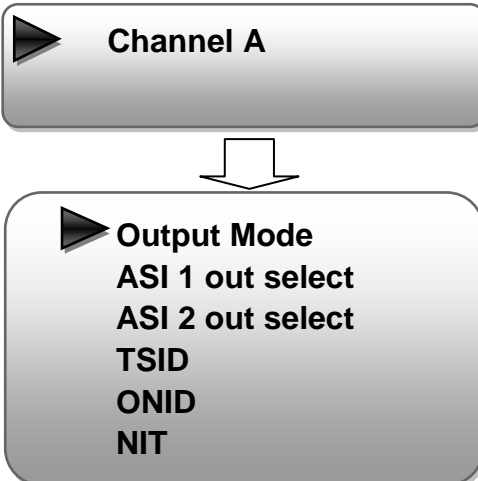
▶ 1 CETV 1      ✓  
2 CCTV 4A    X

## 3.2.5 TS Config

Enter 'TS Config' to configure the TS output parameters.

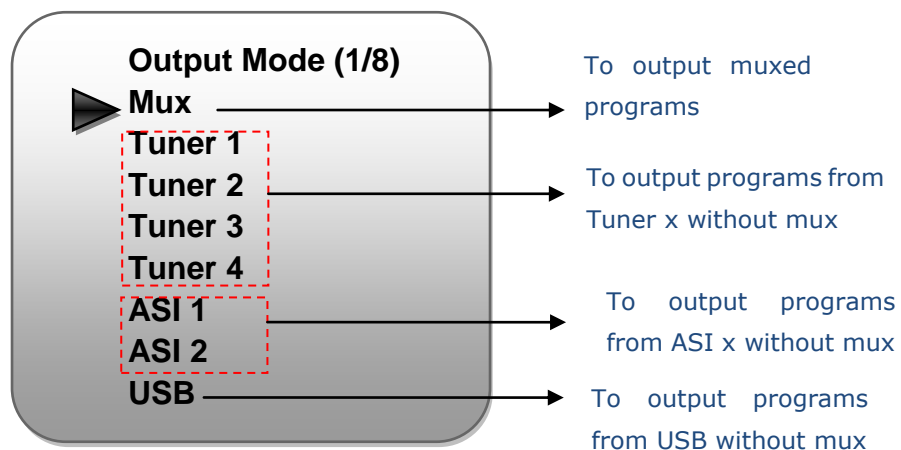
▶ **TS Config:**  
Channel A  
Channel B  
Channel C  
Channel D

Enter "Channel A"/"Channel B" /"Channel C" /"Channel D" to set the corresponding TS parameters. Submenus (taking "Channel A" as an example) are:

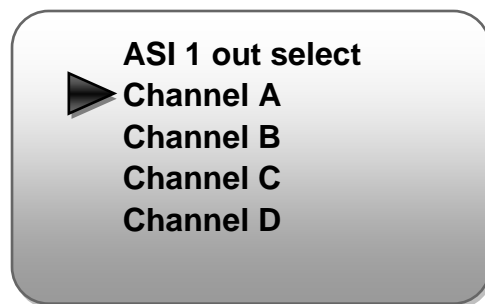


**Output Mode:** Enter this menu to choose the output Mode. This IRD is equipped with 4

Tuners, 2 ASI and 1 USB input ports.



**ASI 1/2 out select:** Enter this menu to choose the ASI output channel.



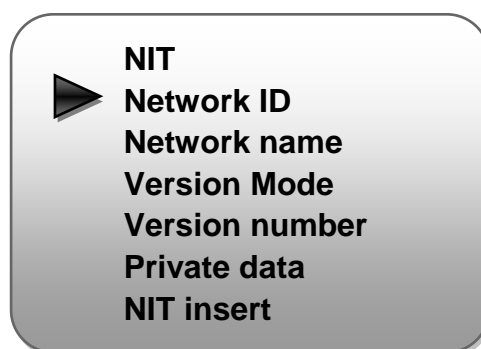
**TS ID:** Set TS ID in this menu.



**ON ID:** Set ON ID (original network ID) in this menu.

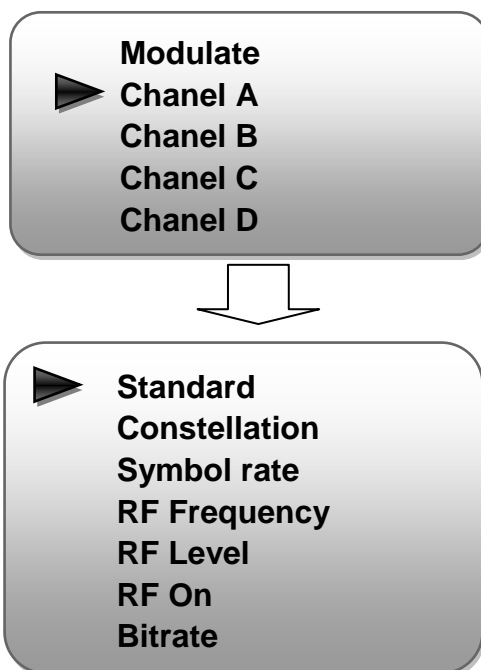


**NIT:** NIT (Network Information Table) is a very important table for describing the network and TS. Set NIT parameters under this menu.



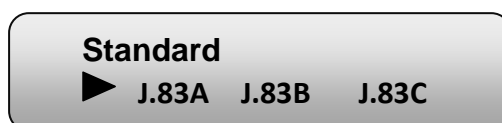
### 3.2.6 Modulate Settings

When entering “Modulate Settings” submenu, configure the modulating parameters for the 4 carrier outputs separately.



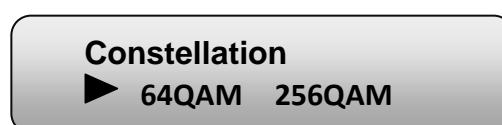
#### ➤ Standard

There are three possible options provided for selecting bandwidth: 6M, 7M, and 8M. When the display shows them, just press LEFT and RIGHT key to choose and press ENTER to confirm.



#### ➤ Constellation

Four different constellations 64QAM and 256QAM will be shown on the LCD window. Set constellation type with the same method mentioned above.



#### ➤ Symbol rate

When user enters Symbol rate, the LCD would show the current working rate.

Check symbol rate here.

▶ **Symbol rate**  
**5310 Ksps**

#### ➤ **RF Frequency**

The RF output frequency range is from 30 to 950MHz with 1K stepping. After entering the RF frequency setting submenu, press LEFT, RIGHT, UP, and DOWN buttons to adjust the frequency and confirm by press ENTER button.

**RF Frequency**  
**750.000 MHz**

#### ➤ **RF Out Level**

The RF attenuation range is from -30~0dbm (77~107dbμV) with 0.1db step. After entering this setting submenu, you can shift UP/DOWN/LEFT/RIGHT key to set the output level and press ENTER to confirm.

**RF Out Level**  
**-10.0 dbm**

#### ➤ **RF On**

This interface is to decide whether to enable the RF (carrier A) output or not.

**OFF:** to disable programs to output through carrier A.

**ON:** to enable programs to output through carrier A.

▶ **RF On**  
**Off      On**

#### ➤ **Bitrate**

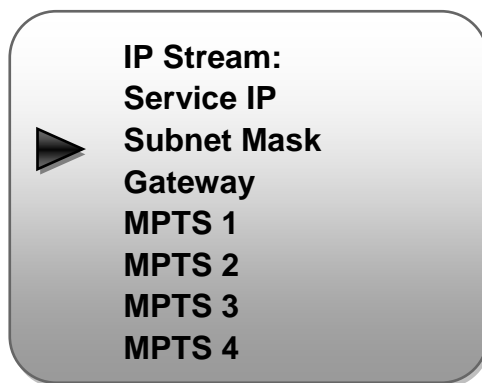
The current actual bitrate and the maximum bitrate the carrier supports

**Bitrate(Act/Max)**  
**XX.XXM/ XX.XXM**



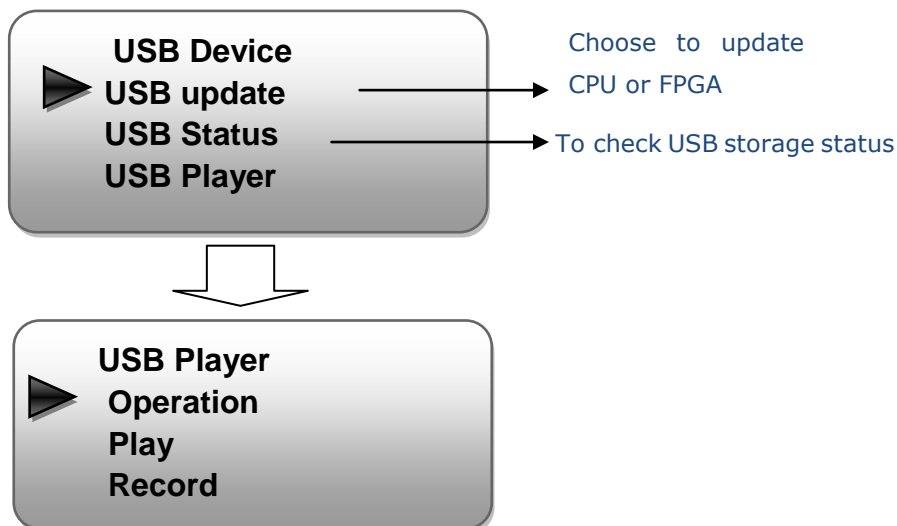
### 3.2.5 IP Stream

TS to output in IP (4\*MPTS) format through the DATA port. Users can set IP output parameters in this menu.



### 3.2.7 USB Device

Check USB status and choose to update CPU or FPGA at this menu. USB port can be used to record encoded TS and playback TS files (\*.ts).

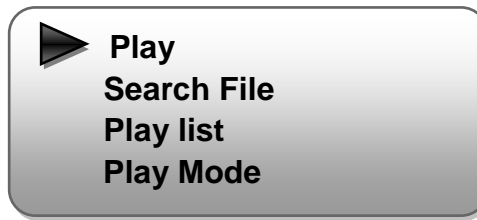


#### ➤ Operation

Choose the operation mode for USB port. When you choose “Play TS”, record TS function is not applicable. Choose “Record TS”, then Play function is not applicable.



➤  
➤ **Play**



Search File: read the quantity of programs in the USB.

Play list: view program list in the USB device.

Play Mode: select a play mode for the \*.ts files as needed before playing the \*.ts file and specify a video under ‘Single file’ / ‘Single loop’ mode and press “Enter” button to start play. While under ‘Play all’ / ‘Loop all’ mode, it automatically plays files from first to end.

➤ **Record**



Record Source: choose to record one output carrier.

There are 3 record Modes provided:

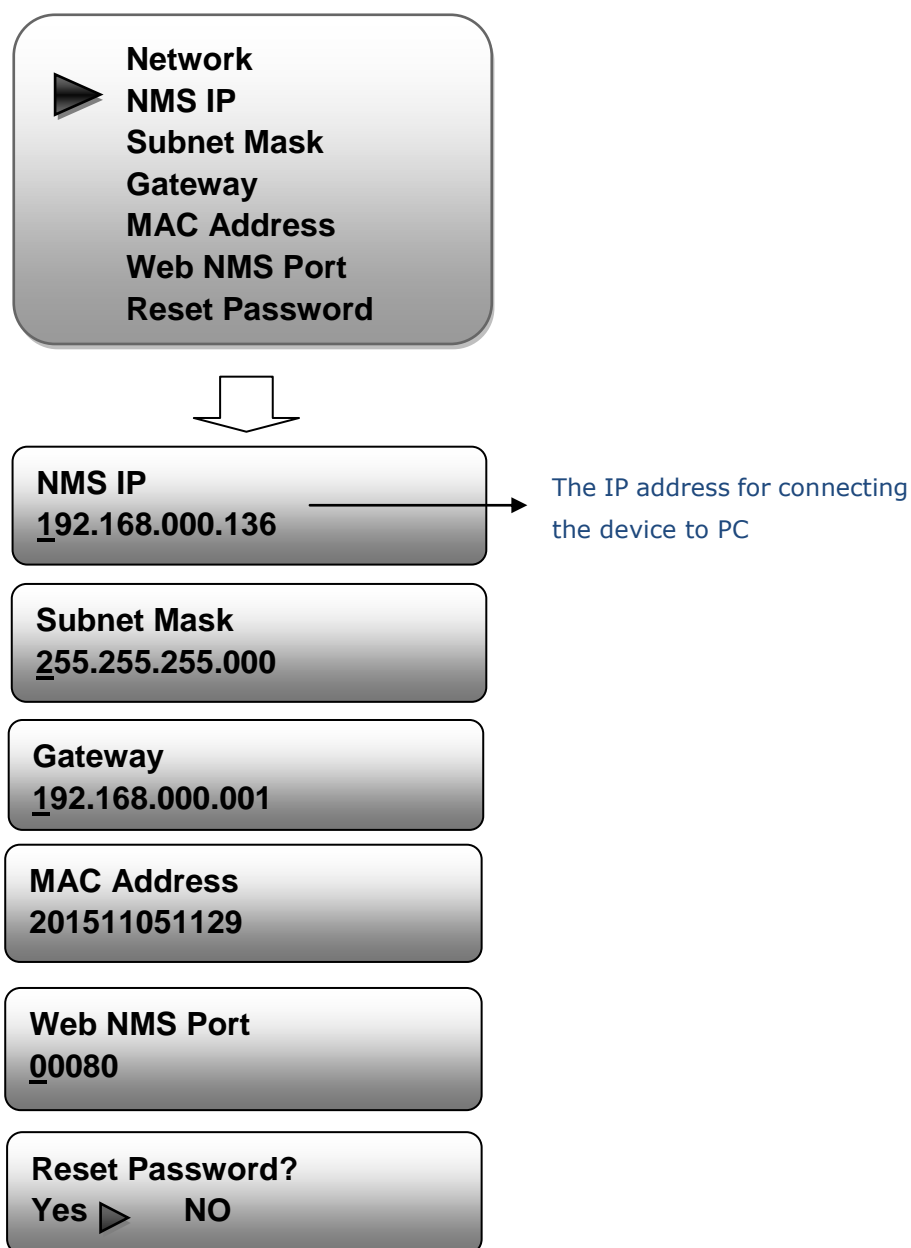
- “Single file”: For example, when the file size is set as 1000M and the \*.ts is recorded up to 1000M, it automatically stops recording TS.
- “Segment file”: For example, when the file size is set as 1000M and the \*.ts is recorded up to 1000M, it automatically saves the files and continues to record TS and save it to next file until the USB memory is full.
- “Loop record”: It automatically saves the files and continues to record TS and save it to next file. When the USB memory is full, it replaces the previous file.

File Name: enter this menu to edit name for the \*.ts files to be recorded. For example, if users name it “Record-”, it will give name to the saved \*.ts files “Record-001.ts”, “Record-002.ts”... “Record-00N.ts”.

File Size: set the file size for the \*.ts to be recorded. A single file can be maximum 4M in size.

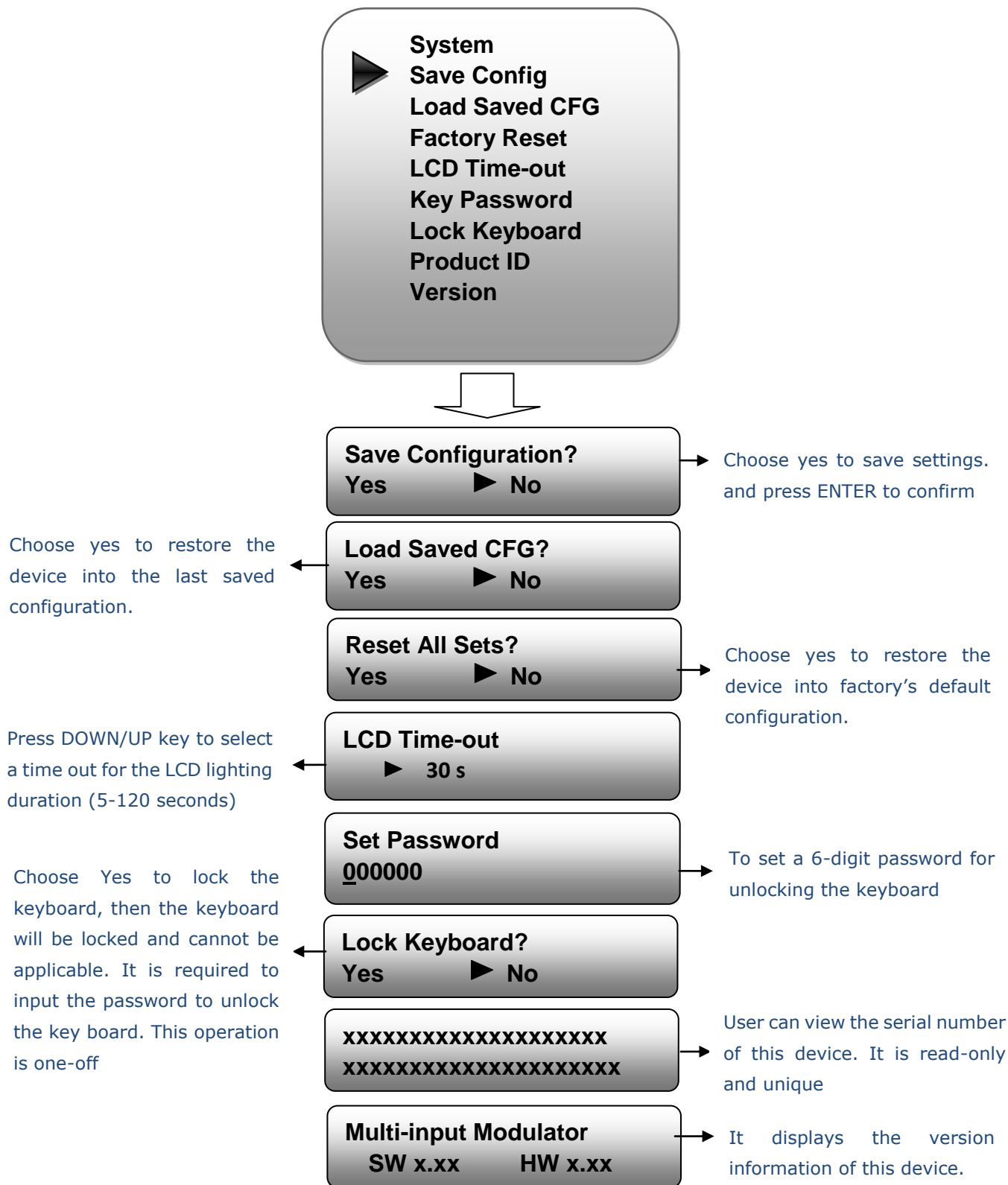
### 3.2.8 Network

Set network parameters in this menu. Enter 'Network' submenus to separately set corresponding parameters.



### 3.2.9 System

Set the system parameters in this menu. Enter 'System' submenus to separately set corresponding parameters.



## Chapter 4 Web-based NMS Management

In addition to using the front buttons to control the device, you can also control and set the configuration with the web browser in the PC. Mozilla and Internet Explorer work best.

### 4.1 login

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

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

E.G. the PC IP address is 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 1 to 254 except 252 to avoid IP conflict).

Use web browser to connect the device with PC by inputting the IRD'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 are defaulted as "admin".) and then click "LOGIN" to start the device setting.

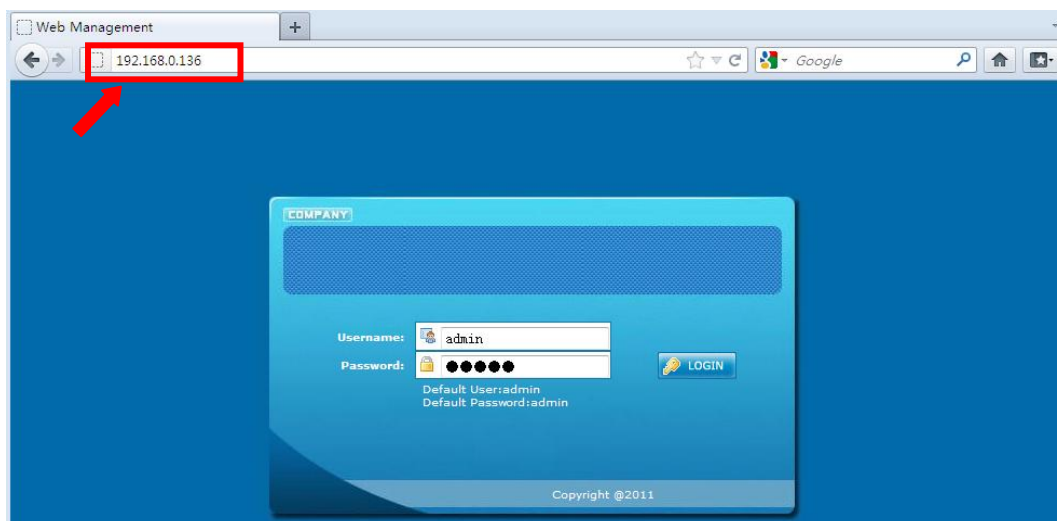


Figure-1

### 4.2 Operation

#### Summary:

When you confirm the login, it displays the WELCOME interface as Figure-2 where users

can have an overview of the device's system information and working status.

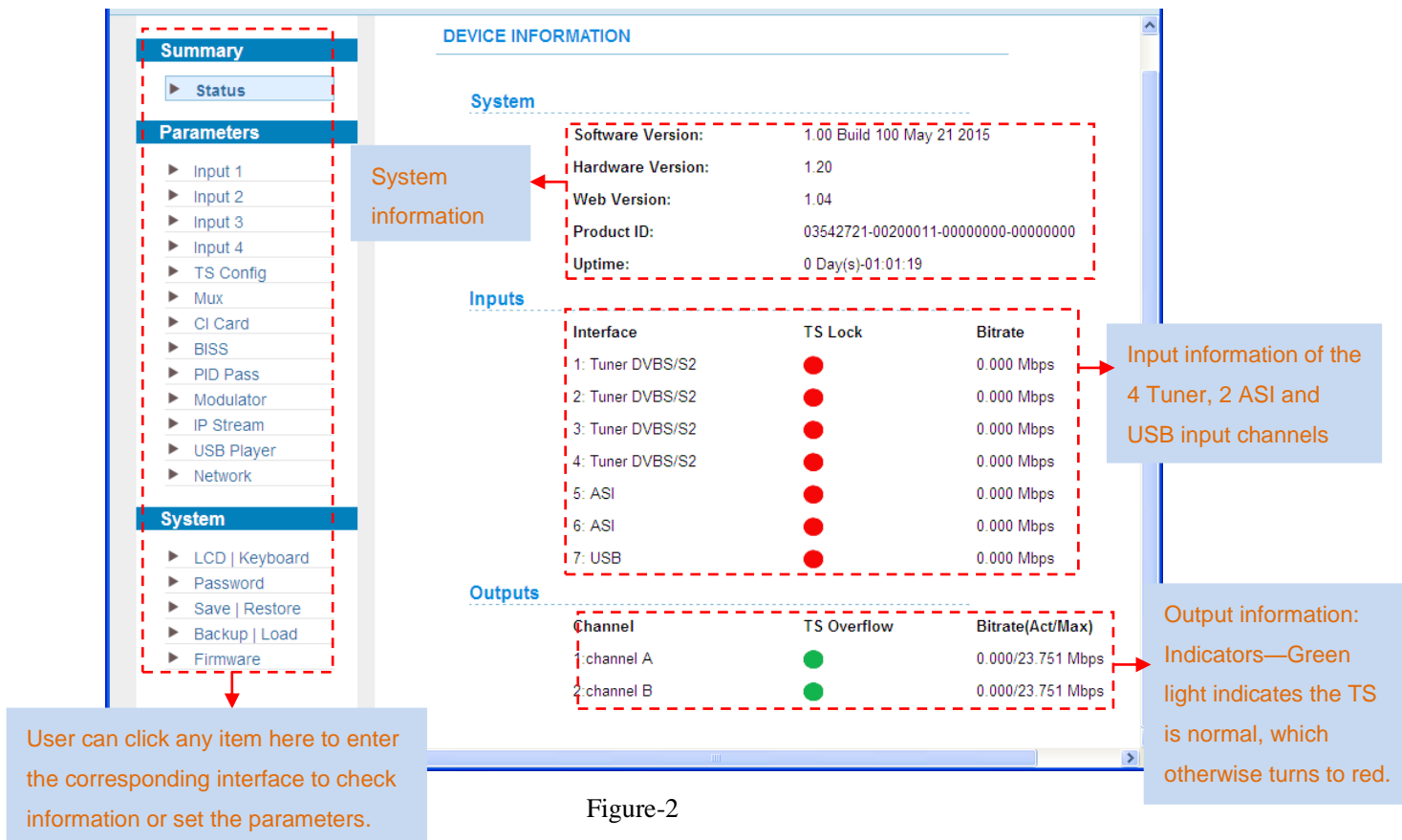


Figure-2

### Parameters → Input 1-4:

From the menu on left side of the webpage, click “Input x”, it displays the interface where users can configure the input tuner parameters to receive satellite signals.

(Figure-3)

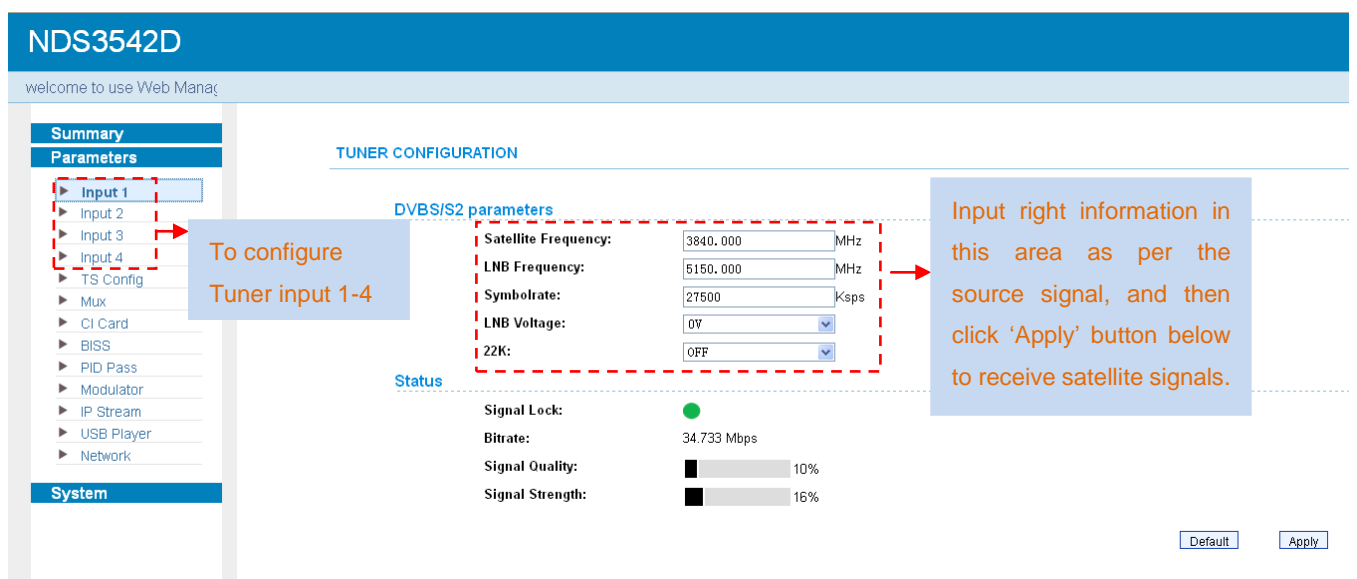


Figure-3

### Parameters → TS Config:

Click “TS Config”, it displays the interface where users can configure the output TS parameters in this interface. (Figure-4)

**Output carrier select**  
The letters A, B, C and D represent the 4 carriers

welcome to us

**TS CONFIGURATION**

channel A channel B channel C channel D

Output Mode: Mux  
 ASI1 Out Select: Channel A  
 ASI2 Out Select: Channel A

**Stream**

TS ID: 1  
 ON ID: 1

**NIT**

Network ID: 1  
 Network Name: network-1  
 Version Mode: Automatic  
 Version Number: 9 (0-31)  
 Private Data: 0x00000000  
 NIT Insert: Disable

Index Freq(MHz) Constellation Symbol Rate(Mbps) Add Del-All

**SDT**

SDT Insert: ☒

Default Apply

**Mux**  
 1: Tuner 1  
 2: Tuner 2  
 3: Tuner 3  
 4: Tuner 4  
 5: ASI 1  
 6: ASI 2  
 7: USB

To choose output programs for the 4 carrier output  
**Mux:** To output muxed programs  
**Tuner /ASI/USB:** To output programs from Tuner or ASI input without mux

Figure-4

## NIT Table setting

Click this button from NIT area to trigger a dialog box (Figure 5) as below, where to add the program descriptor in NIT Table.

**Simple NIT TS Loop**

Transport Stream ID: 1  
 Original Network ID: 1  
 RF Frequency: 800.000 MHz  
 Bandwidth: 8 MHz  
 Constellation: QPSK  
 Hierarchy Info: Not Hierarchy  
 Code Rate: 1/2  
 Guard Interval: 1/32  
 Transmission Mode: 2K

Save Close

Figure-5

After setting all the data, users need to click on “Save” **Save** to save the setting.

## Parameters → Mux:

From the menu on left side of the webpage, clicking “Mux”, it displays the interface where users can choose the programs from 8 Tuner and 6 ASI input ports to Mux out.

(Figure-6)

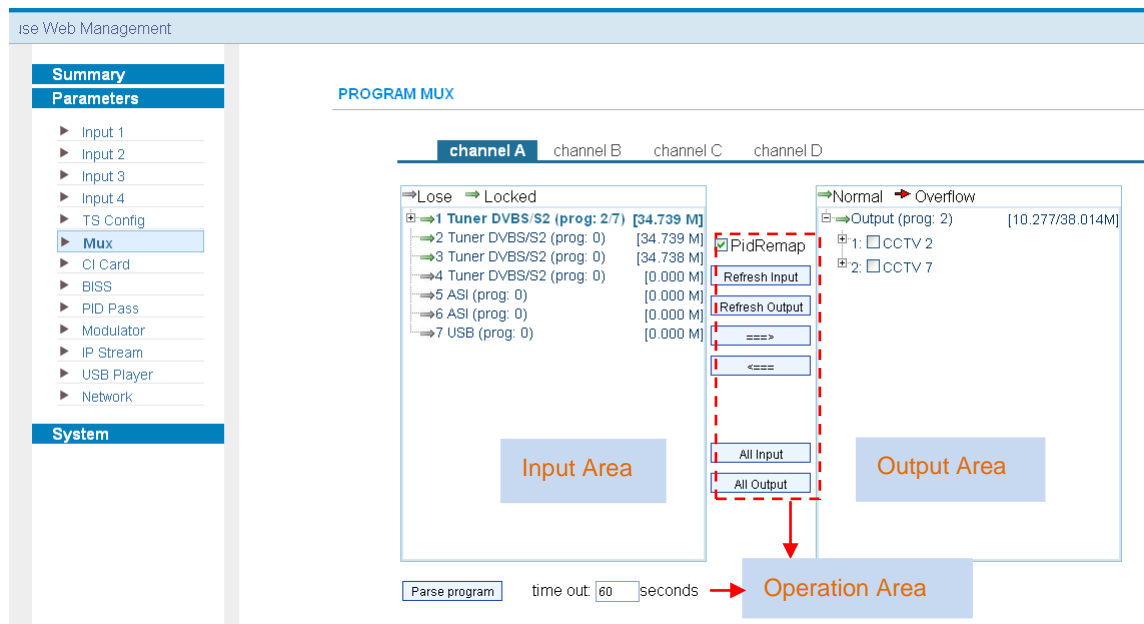


Figure-6

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

☒ **PID Remap**: To enable/disable the PID remapping

To refresh the input program information

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.

To select all the input programs

To select all the output programs

To parse programs  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 , it triggers a dialog box (Figure 7) where users can input new information.



Figure-7

Input new data and click 'Save' button at last to confirm the modification.

### Parameters → CI Card:

The IRD V4 also supports 4 CI cards to descramble programs from Tuner inputs. Click and enter 'CI Card' to configure the 4 cards respectively. (Figure-8)

Figure-8

### ➤ CI Max Bit rate

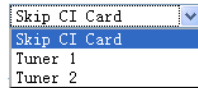
CI Max Bitrate options range from 48-108Mbps. Select a value in the pull-down list as principle: Actual Input Bitrate ≤ Max Bitrate ≤ CI Max decrypting capacity.



## ➤ Input TS Mode

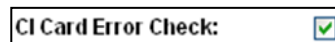
One CI card can be applied to descramble programs from the 2 Tuner input signal sources.

‘Skip CI card’ means to skip the card which is used for FTA stream.



## ➤ Card Error Check

Decide whether to enable the card error check function by checking the box.



After configuring CI card parameters, click **Set config** button to apply the input data and then click **Search program** button to parse programs from the channel selected in ‘Input TS Mode’.

The searched out programs will be listed in the ‘Descramble’ box below: (Figure 9)

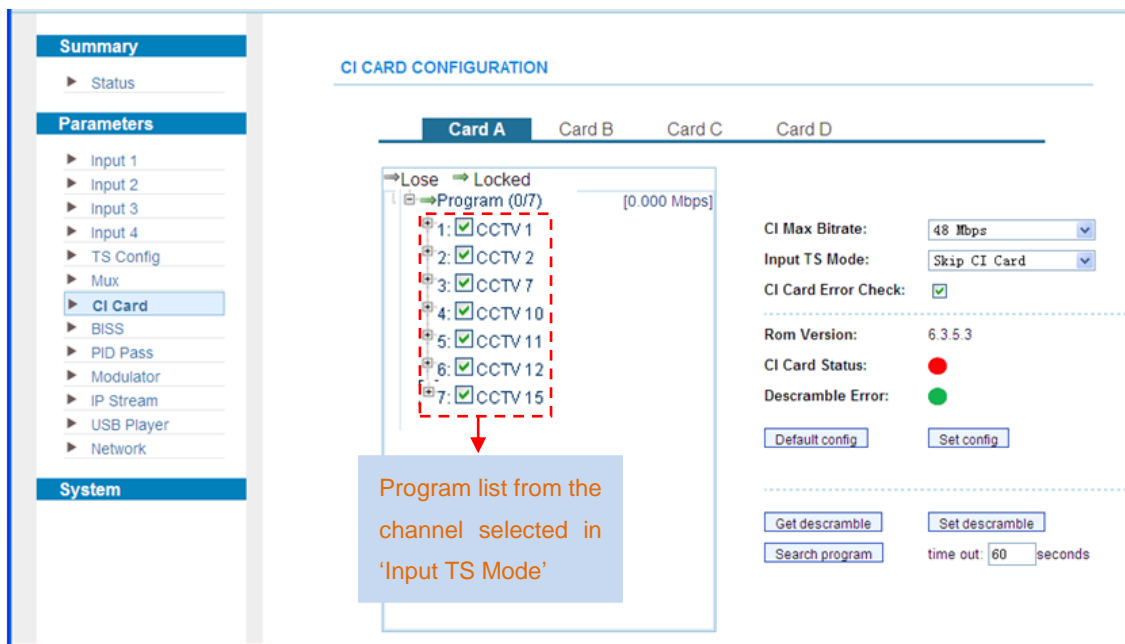
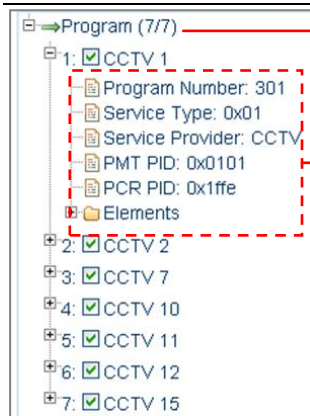


Figure-9

Check the program(s) to be descrambled and click **Set descramble** button to start descrambling the checked program(s). The program quantity to be descrambled will depend on the CAM/CI performance you apply to.



Number before slash indicates the programs which have been descrambled.  
Number behind slash indicates the whole programs from the selected channel.

Users can also read the program information by clicking '+' symbol.

## Parameters → BISS:

From the menu on left side of the webpage, clicking “BISS”, it displays the interface where users can configure 4 BISS and descramble the input channels. (Figure-10)

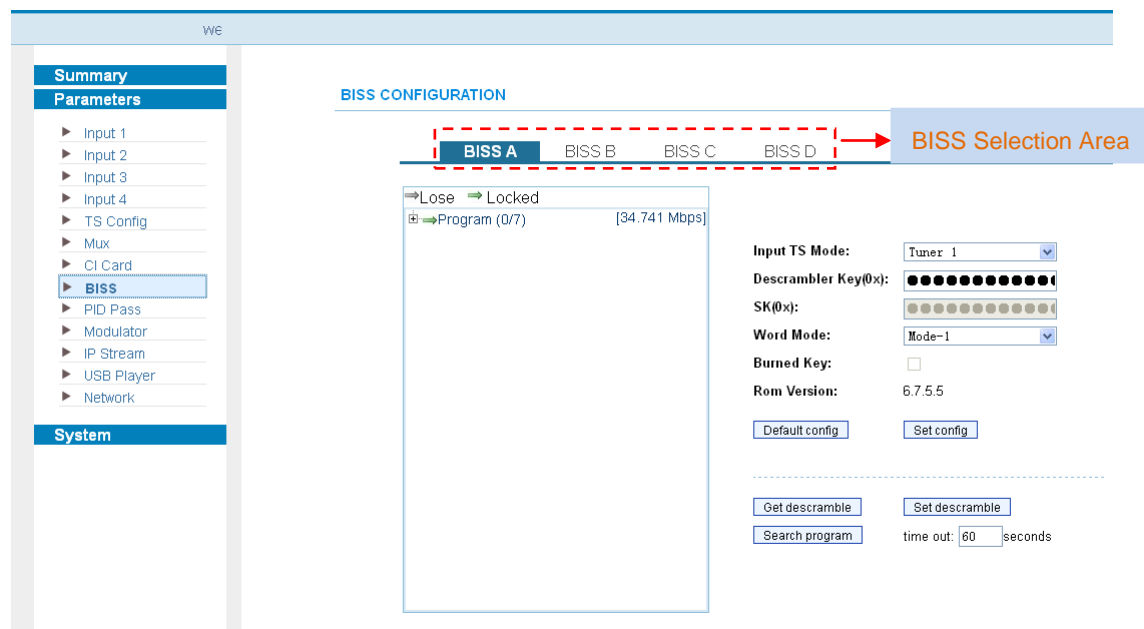
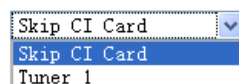


Figure-10

**Input TS Mode:** One BISS can be applied to descramble one corresponding Tuner input signal sources. ‘Skip BISS’ means to skip the card which is used for FTA stream.



One BISS tag can be applied to descramble one channel Tuner input signal. ‘Skip BISS’ means not to involve BISS function and it is used for FTA stream.

Items showing below are working as per the keys or codes set in the BISS scrambling side (DVB-S/S2 modulators).

Descrambler Key(0x):	.....
SK(0x):	.....
Word Mode:	Mode-E
Burned Key:	<input type="checkbox"/>

Input corresponding items and data to active the BISS descrambling as principles be

Modulating Side (BISS SCR)	Receiving Side (BISS DESCR)	Digit (0x----)
Mode 1+SW Data	Mode 1+Descrambler Key	12
Mode E+ESW Data + Device	Mode E + Descrambler Key + Burned Key	16
Mode E+ESW Data + Input ID	Mode E + Descrambler Key + SK	14

After configuring the above BISS parameters, click [Set config](#) button to apply the input data and then click [Search program](#) button to parse programs from the channel selected in 'Input TS Mode'.

The searched out programs will be listed in the 'Descramble' box below: (Figure 11)

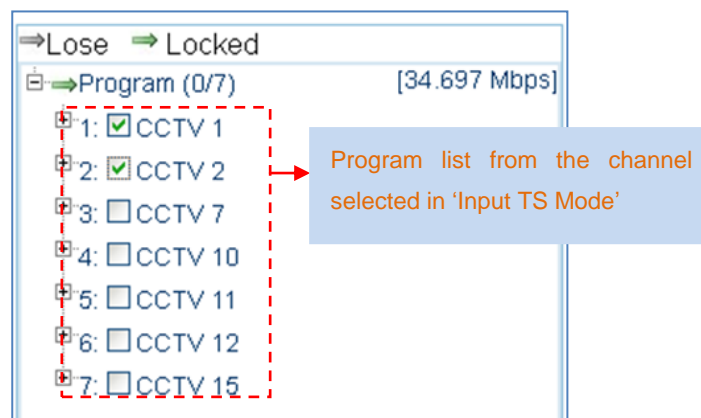
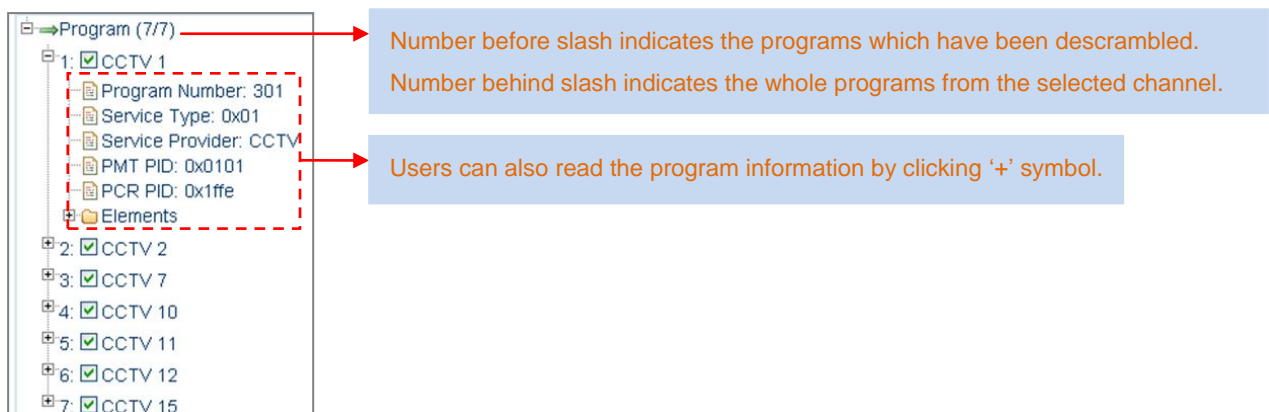


Figure-11

Check the program(s) to be descrambled with “√” and click [Set descramble](#) button to start descrambling the checked program(s). The program quantity to be descrambled will depend on the CAM/CI performance you apply to.



## Parameters → PID Pass:

From the menu on left side of the webpage, clicking “PID Pass”, it displays the interface where to add the PIDs which need pass through. (Figure-12)

In some occasions, there are some PIDs which won’t belong to any program, such as EPG, NIT tables and so on which user just wants to pass them through the multiplexing module without changing anything. This is the main purpose of this function.

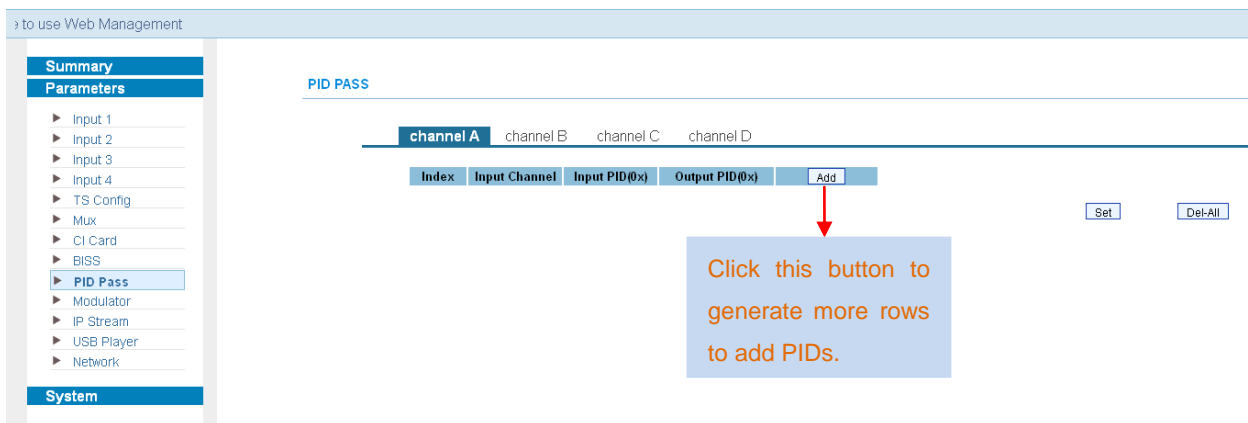


Figure-13

## Parameters → Modulator:

From the menu on left side of the webpage, clicking “Modulator”, it will display the Modulator Configuration screen as Figure-14. Here you can set modulation parameters.

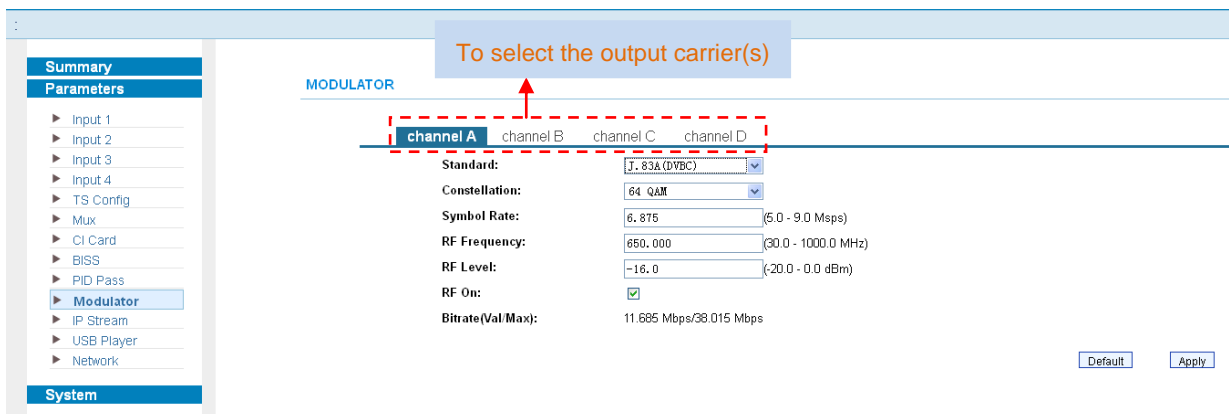


Figure-14

## Parameters → IP Stream:

Use this setting for TS to output in IP (4\*MPTS) format through the DATA port.

Click ‘IP Stream’, it will display the interface as Figure-15 where to set IP out parameters.

management

Summary

Parameters

- Input 1
- Input 2
- Input 3
- Input 4
- TS Config
- Mux
- CI Card
- BISS
- PID Pass
- Modulator
- IP Stream**
- USB Player
- Network

System

IP STREAM

Stream Enable:  
If not set, the following parameters will be no use, the IP Output will not work.

Output IP:  
The IP Output data receive address. The format is xxx.xxx.xxx.xxx (like 224.2.2.2). After set the Output IP address, you must use the new address to receive IP Output data.

Output Port:  
The UDP protocol port (like 8001), you should use Output IP and new port to receive IP Output data (like udp://@224.2.2.2:8001).

Service IP:  
The IP Output port address. The format is xxx.xxx.xxx.xxx (like 192.168.2.137).

Subnet Mask:  
General is 255.255.255.0, it must be the same in a local area network.

Gateway:  
If the device is in different net segment, you must set the gateway.

Service IP:

Subnet Mask:

Gateway:

MPTS

Enable	Null PKT Filter	Output IP	Port
1: <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="224.2.2.2"/>	<input type="text" value="2001"/>
2: <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="224.2.2.2"/>	<input type="text" value="2002"/>
3: <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="224.2.2.2"/>	<input type="text" value="2003"/>
4: <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="224.2.2.2"/>	<input type="text" value="2004"/>

Figure-15

## System → USB

From the menu on left side of the webpage, clicking “USB Media”, it displays the interface where users can operate USB device. (Figure-16)

**NOTE:** It is necessary to connect USB device and signal source and activate modulating to operate TS recording.

**NOTE:** It is necessary to connect USB device when operate TS playing.

Summary

Status

Parameters

- Input 1
- Input 2
- Input 3
- Input 4
- TS Config
- Mux
- CI Card
- BISS
- PID Pass
- Modulator
- IP Stream
- USB Player**
- Network

System

USB PLAYER

Operation Mode selection Area: Null, Play TS, and Record TS optional

Operation:

Play

Play Mode:

Play List:

Record

File Name:

File Size:  MB

Record Source:

Record Mode:

Status

Player Info: Stopped

Current:

USB Insert: ☒

USB Storage: 1.36 / 14.43 GB

To browse TS files in the USB device.

Search Play List

Stop

Apply

Stop recording or playing

Start recording or playing

Configure TS Play parameters

Configure TS record parameters

For reading USB device status

Figure-16

## Detailed Explanation:

**Play Mode:** You can select a play mode for the \*.ts files as needed before playing the \*.ts file and specify a video under ‘Single file’ / ‘Single loop’ mode and press “Enter” button to start play. While under ‘Play all’ / ‘Loop all’ mode, it automatically plays files from first to end.

**File Name:** Enter this menu to edit name for the \*.ts files to be recorded. For example, if users name it “Record-”, it will give name to the saved \*.ts files “Record-001.ts”, “Record-002.ts” “Record-00N.ts”.

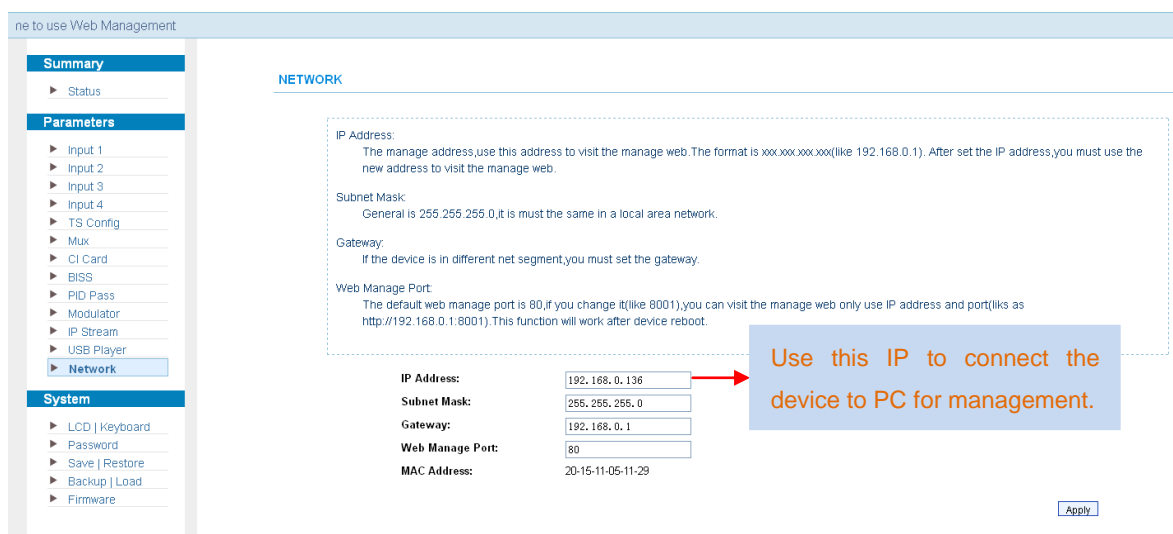
**File Size:** Set the file size for the \*.ts to be recorded. A single file can be maximum 2000M in size.

There are 3 File record modes provided:

- “Single file”: For example, when the file size is set as 1000M and the \*.ts is recorded up to 1000M, it automatically stops recording TS.
- “Segment file”: For example, when the file size is set as 1000M and the \*.ts is recorded up to 1000M, it automatically saves the files and continues to record TS and save it to next file until the USB memory is full.
- “Loop record”: It automatically saves the files and continues to record TS and save it to next file. When the USB memory is full, it replaces the previous file.

## Parameters → Network:

Click ‘Network’, it will display the interface as Figure-17 where to set network parameters.



ne to use Web Management

**Summary**

- ▶ Status

**Parameters**

- ▶ Input 1
- ▶ Input 2
- ▶ Input 3
- ▶ Input 4
- ▶ TS Config
- ▶ Mux
- ▶ CI Card
- ▶ BISS
- ▶ PID Pass
- ▶ Modulator
- ▶ IP Stream
- ▶ USB Player
- ▶ **Network**

**System**

- ▶ LCD | Keyboard
- ▶ Password
- ▶ Save | Restore
- ▶ Backup | Load
- ▶ Firmware

**NETWORK**

**IP Address:**  
The manage address,use this address to visit the manage web.The format is xxx.xxx.xxx.xxx(like 192.168.0.1). After set the IP address,you must use the new address to visit the manage web.

**Subnet Mask:**  
General is 255.255.255.0,it is must be same in a local area network.

**Gateway:**  
If the device is in different net segment,you must set the gateway.

**Web Manage Port:**  
The default web manage port is 80,if you change it(like 8001),you can visit the manage web only use IP address and port(like as http://192.168.0.1:8001).This function will work after device reboot.

**IP Address:** 192.168.0.136

**Subnet Mask:** 255.255.255.0

**Gateway:** 192.168.0.1

**Web Manage Port:** 80

**MAC Address:** 20-15-11-05-11-29

**Use this IP to connect the device to PC for management.**

[Apply](#)

Figure-17

## System → LCD/Keyboard:

From the menu on left side of the webpage, clicking “LCD/Keyboard”, it will display the screen as Figure-18 where to control the device’s front panel.

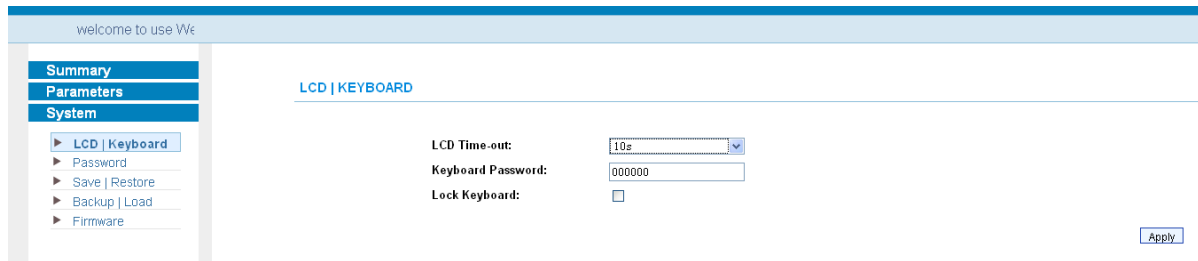
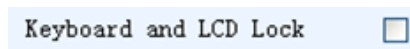
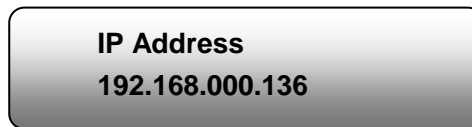


Figure-18



➤ **Keyboard and LCD Lock:** If it is marked with “√”, the LCD and keyboard will be locked to avoid unexpected modification or view of the device information and configurations. User can’t operate the keyboard & LCD while only the device IP address can be noted in the LCD window.



## System → Password:

From the menu on left side of the webpage, clicking “Password”, it will display the screen as Figure-19 where to set the login account and password for the web NMS.

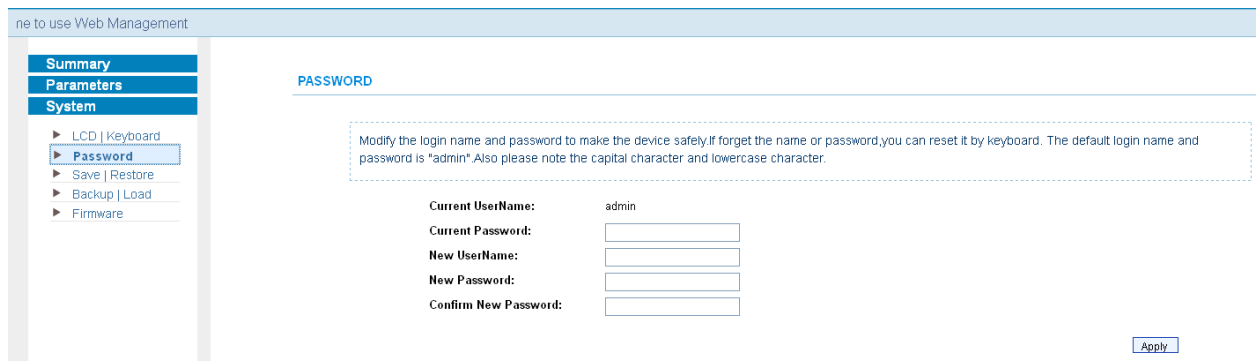


Figure-19

## System → Save/Restore:

From the menu on left side of the webpage, clicking “Save/Restore”, it will display the screen as Figure-20 where to save or restore your configurations.



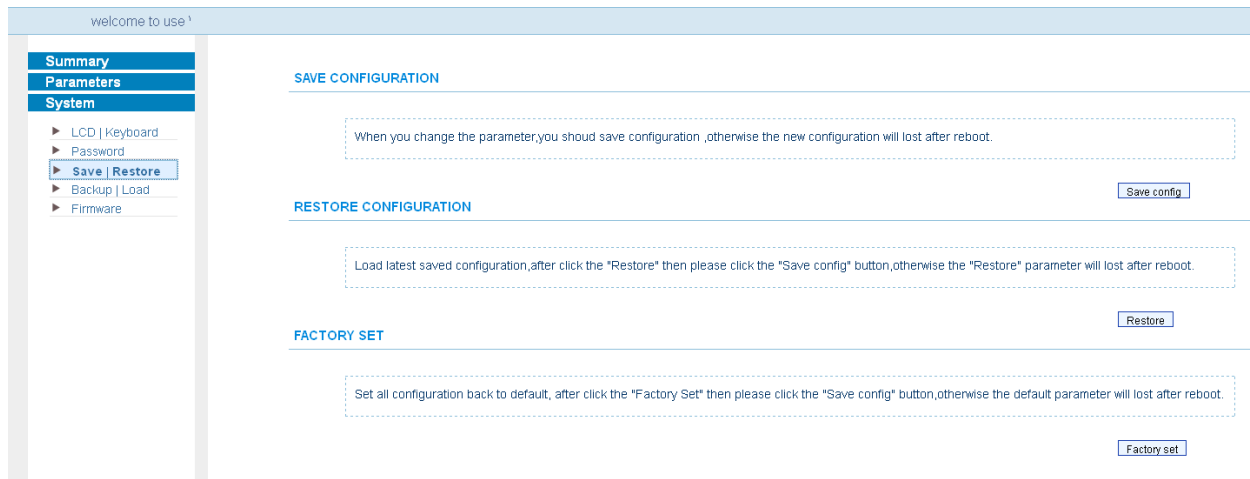


Figure-20

### System → Backup/Load:

From the menu on left side of the webpage, clicking “Backup/Load”, it will display the screen as Figure-21 where to backup or load your configurations.

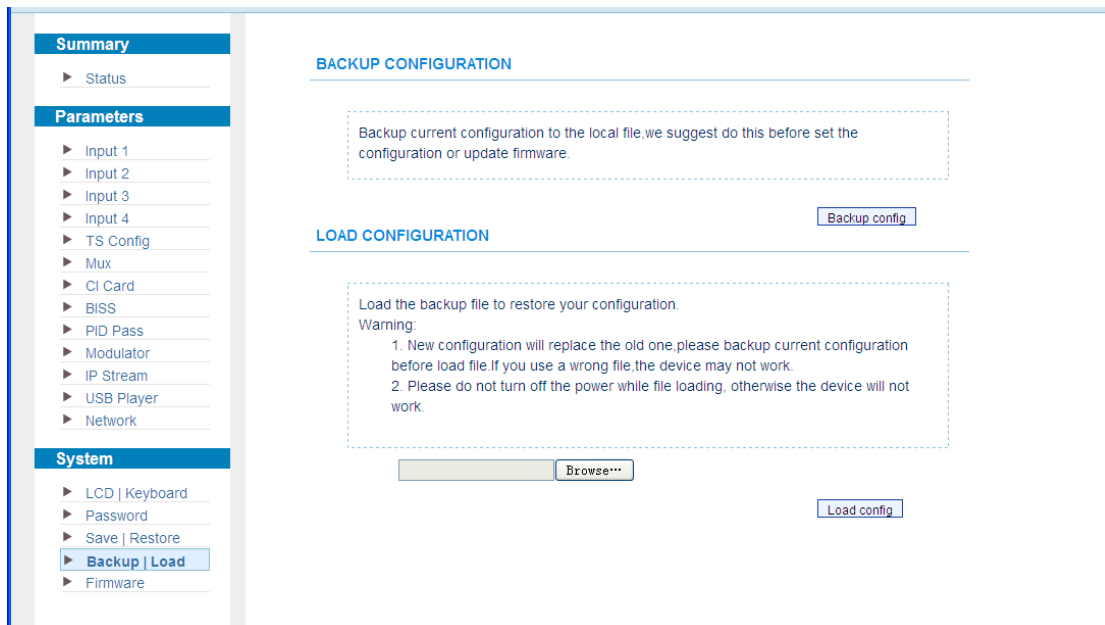


Figure-21

### System → Firmware:

From the menu on left side of the webpage, clicking “Firmware”, it will display the screen as Figure-22 where to update firmware for the device.

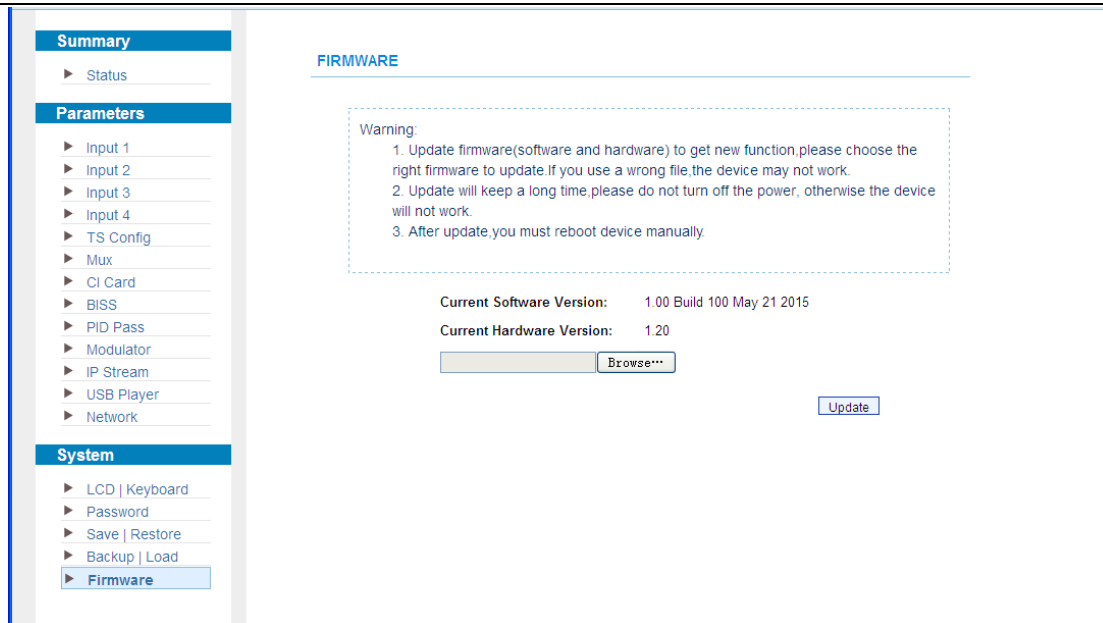


Figure-22

## Chapter 5 Troubleshooting

THOR's ISO9001 quality assurance system has been approved by the CQC organization. We guarantee the products' quality, reliability and stability. All Thor Broadcast / Thor Fiber products haven't passed all testing and manual inspections before they are shipped out. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by THOR. To prevent a potential hazard, please strictly follow the operation conditions.

### Prevention Measures

- Installing the device in a place where the environmental temperature is between 0 to 45 °C
- Making sure the unit has plenty of ventilation for the heat-sink on the rear panel; and other heat-sink bores if necessary
- Checking the AC input within the power supply and ensure it is working, the connection is correctly installed before switching on device
- Checking the RF output levels to stay within a tolerable 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 be greater than 10 seconds.

### Conditions needed to unplug power cord

- Power cord or socket damage.
- Any liquid that got into the device.
- Any stuff that could cause a circuit short
- Device in damp environment
- Device has suffered from physical damage; i.e. it fell off a rack.
- Longtime idle.
- After switching on and restoring to factory setting, device still won't work properly.
- Maintenance needed on device

## Chapter 6 Packing List

- |                         |      |
|-------------------------|------|
| ● Thor Broadcast IRD-V4 | 1pcs |
| ● User's Manual         | 1pcs |
| ● RF/Loopout Cables     | 4pcs |
| ● ASI Cable             | 1pcs |
| ● Power Cord            | 1pcs |