

User Manual v2.0

Stand Alone Scrambler

Chapter 1 Product Outline

1.1 Outline

stand alone scrambler is applied in the simulcrypt scrambling of input code stream. It can send fixed or agile word scrambling according to transport stream. The built-in simulcrypt synchronization controller transmits the exchange information with ECMG. When integrated with CA, the scrambler adjusts crypto period appropriately in order to make decoder function normally. This is a highly integrated equipment for digital TV scramble.

1.2 Features:

DVB common scramble system description ETR289,common scramble system description;

- DVB Scramble designated program or transport stream;
- Comply with DVB standard arithmetic ,supports simulcrypt, compatible with multi- CA system;
- Comprehensive MPEG code stream analysis;
- Re-process PSI/SI information from TS;
- Channel protection for ASI output;
- Bit rate auto adaption ,PCR reset and re-mark;
- Remote real-time monitor of transport stream;
- Auto switch and input backup
- pocket format : auto adaption of 188/204 bit rate
- Network monitor
- PCR correction

Application

Program collect/ distribute

SDH network transport , satellite DVB-T, MMDS

Digital CATV Front head end

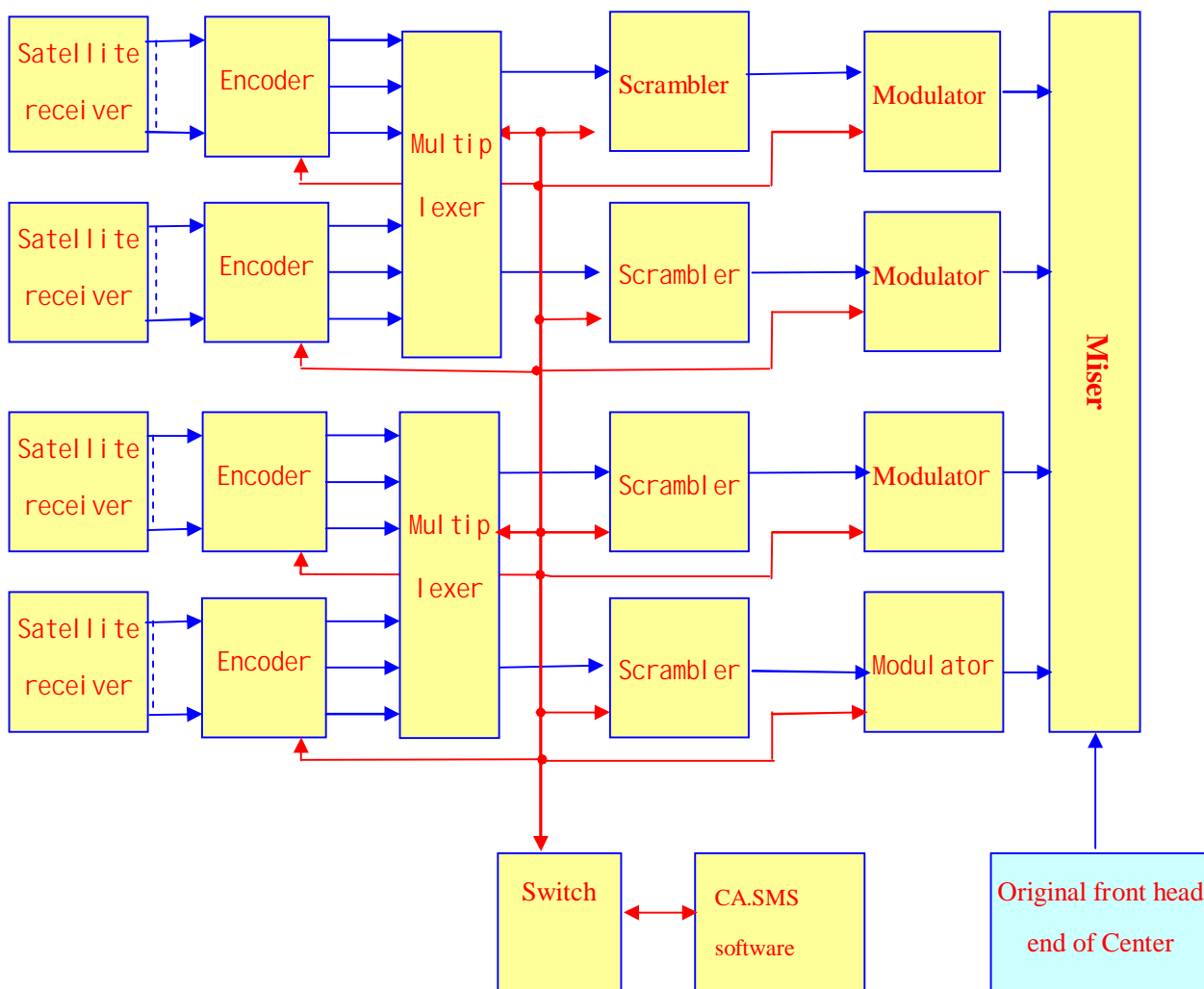
Video on demand (VOD)

Digital swerve

Video distribution for television network

Program encrypt

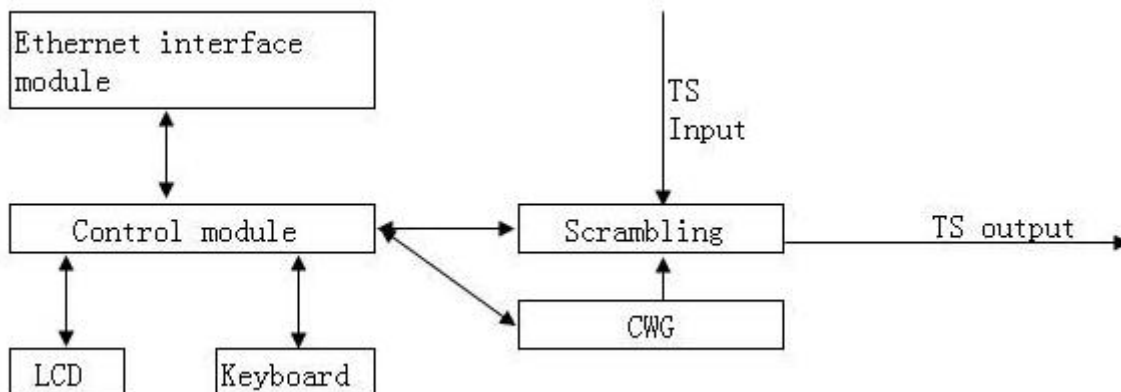
Transport stream disposal



1.3 Technical Parameter

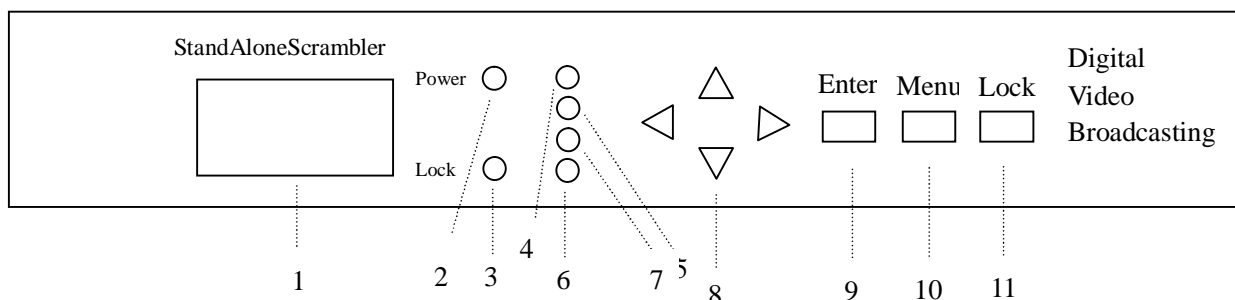
Import interface	DVB/ASI	1 route
Output Interface	DVB/ASI	2 routes
Output bit rate	1~54Mbps contunious&adjustable	
Network port	Ethernet	10/100M
Miscellaneous	Dimension	44mm 482mm 410mm
	Temperature	0~45℃ (Operating) ; -20~80℃ (storage)
	Power supply	110V/220VAC±10%, 50Hz, 25W

1.4 Principle Frame



1.5 Appearance and description

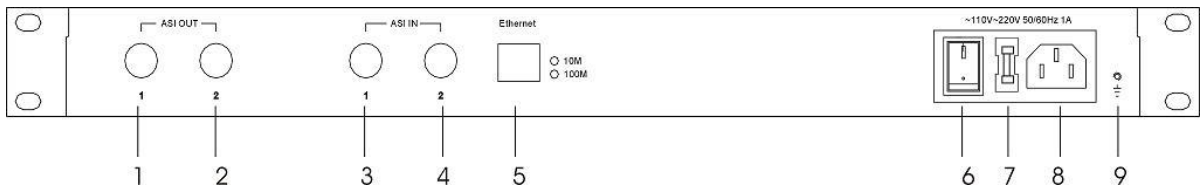
Front panel illustration:



1	LCD Screen display
2	Power indicator (green)
3	Signal lock indicator
4	ECMG1 signal indicator
5	EMMG1 signal indicator
6	EMMG2 signal indicator
7	ECMG2 signal indicator
8	Up/down/left/right button
9	Confirm button
10	Cancel button

11	Menu button/lock button
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Back panel illustration:



1	ASI TS output interface 1
2	ASI TS output interface 2
3	ASI TS input interface 1
4	ASI TS input interface 2
5	Ethernet interface
6	Power on-off
7	Fuse
8	Power socket
9	Grounding

Charter 2 Installation Guide

2.1 Acquisition check

Open the device package and check the articles, do check the packing material of samll parts,check packed goods according to packing list or below items:

- Stand Alone Scrambler 1 unit
- User manual 1copy
- Coaxial line with Q9 head for each ends 1 radix
- AC input power cord 1 radix

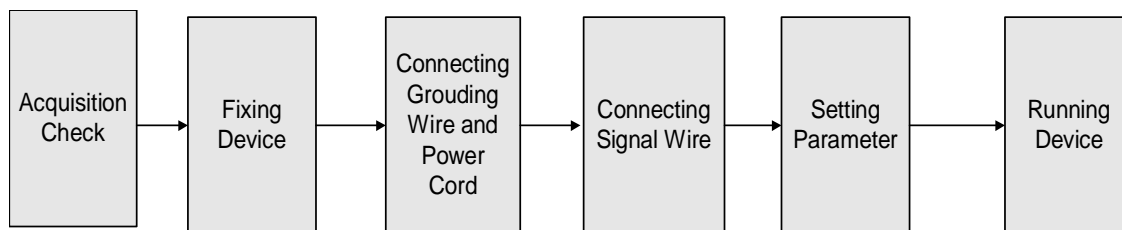
If there is any missing or mismatch of above items, please contact local dealer.

2.2 Installation preparation

Follow below steps when installing the device.The detailed installation will be described at the rest part of this chapter,the back panel illustration is for concrete position reference. Following content is the main for this chapter:

- Checking if there any possible missing or damage device during transport.
- Checking if the situation is suitable for installing.
- Install Stand Alone Scrambler.
- Connecting signal wires
- Connecting communication port (for option)

2.2.1 Installation flow per below chart:



2.2.2 Environment Requirement

Item	Requirement
Machine hall space	When user install machines array in one machine hall, the distance between 2 row of machine frames should be 1.2~1.5m and the distance to wall should be no less than 0.8m。
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 : 1 M Ω , Floor bearing should be greater than: 450Kg/m ² .
Environment temperature	Under 5~40°C operate for long time, under 0~45°C operate for short time, installing air-conditioning is recommended.
Relative temperature	Under 20%~80% operate for long time, under 10%~90% operate for short time.
Pressure	86~105KPa。
Door & window	Installing rubber strip for sealing door-gaps and dual level glasses for window.
Wall	be covered with wallpaper, or brightness less paint, rather than easy pulverization dope.
Fire protection	Have Fire alarm system and extinguisher .
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC power 220V 50Hz, 50W Please carefully check before running.

2.2.3 Grounding requirement

- All function modules' good grounding designs are the base of reliability and stability of device. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, system must follow this rule.
- Coaxial cable's outer conductor and isolation layer should keep sound 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.
- The 2 terminals of grounding wire must make sure for well electric conducting, and

process for antirust.

- It is prohibited that users use other devices as part of grounding wire's electric circuit
- The section of the conjunction between grounding wire and device's frame should be equal or greater than 25 mm^2

2.2.4 Frame Grounding

All the machine frames should connect to protective copper strip. The grounding wire should be as short as possible and avoid circling. The section of the conjunction between grounding wire and grounding strip should be equal or greater than 25 mm^2 .

2.2.5 Device Grounding

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

2.3 Wire's Connection

The power supply outlet is located at the left of rear panel, and the power switch is just above it. The protective grounding wire connective screw is located at the down-left side of power supply outlet

- Connecting Power Cord

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

- Connecting Grounding Wire

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

⚠ Caution:

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

2.4 Signal Wire Connection

The signal connections include the connection of input signal wire and the output signal wire. The signal connection wires are both ASI.

2.4.1 ASI input connection

User can find ASI IN1-IN8 input port on the Equipment, according to connector mark described in the rear panel illustration, and then, connecting the Q9 coaxial cable, one end to the ASI IN1-8 and the other end to the Encoder's or other equipment ASI output port

2.4.2 ASI Output Port Connection

User can find ASI output port on the Equipment, according to connector mark described in the rear panel illustration, and then, connecting the ASI cable (in the accessories), one end to the multiplexer's ASI output port and the other end to the scrambler's or Modulator's input port. multiplexer's ASI output port and its connected ASI cable connector illustrated as follow:



Chapter 3 Operation

This Stand alone scrambler's front panel is user operation interface, Before Operation, we should collocate input,output parameters. Input parameter setting including program option, output parameter setting including realtive setting of transport stream, the device can be use directly based on the setted default parameters, user also can opt the programs accordingly. The display supply specific menu for option. Steps as follow:

Keyboard Function:

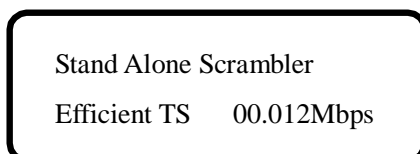
Shift UP,DOWN,LEFT,RIGHT button: Turn over/cursor set up/parameter edit.

ENTER: Store the ending from modified parameter and execute the opted function;
Modify the activated parameter and turn over.

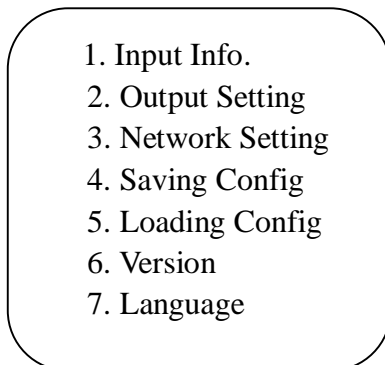
LOCK: Lock/Menu/Store/Display current situation

MENU: Cancel

3.1 Homepage: Normal Working Condition



3.2 Press LOCK into Main Menu



Press UP/DOWN to select.

3.3 Input Information

After user select this setting, system display as below:

The image shows five vertically stacked rounded rectangular boxes, each containing two lines of text. The first line in each box is '1.1 Program 05'. The second line shows a program number followed by a camera ID: 'Program 1 CCTV1', 'Program 2 CCTV2', 'Program 3 CCTV3', 'Program 4 CCTV4', and 'Program 5 CCTV5'.

3.4 Output setting

After user select this, the system display as below:

The image shows a single rounded rectangular box containing two lines of text: '2.1 Output stream' and '54.000 Mbps'.

User can finish the setting of Transport stream. The setting between Available rate and output rate should be in 12~14 Mbps.

3.5 Network Setting

After user select this setting, the system display as below:

3.1 IP Address 101.101.101.13 6
3.2 Subnet mask 255.255.255.000
3.3 Gateway 101.101.101.001
3.4 Console Address 101.101.101.211
3.5 MAC Address 686800000001

User can finish the network setting.

3.7 Saving Config

After user select this setting, press “Enter” to save directly, the system will display as below:

Saving, Please wait.....

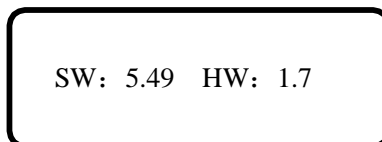
3.8 Loading Config

The system will display as below after enter this setting:

5.1 Load Saved CFG 5.2 Load Default CFG
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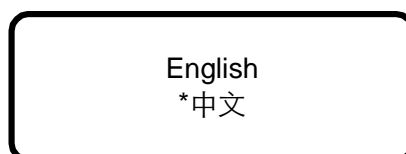
3.9 Version

Enter the menu of Version, the interface display as below:



3.10 Language (Chinese and English)

Enter it and select the language according to the UP/DOWN button, there will be an asterisk before the selected language for confirm. The selected language with added asterisk is the current language, the default language is Chinese, as below:



After complete all the setting, the system work normal.