

Operating instruction

DVB Scrambler
ASI-TS → ASI-TS



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SCA 107
Part N°: 0160.81

1. Introduction

We are glad you decided for state-of-the-art product concepts and we make our strongest effort to fulfil your needs and demands. You have been supplied with a very professional technical module and we are sure that you will be satisfied with its performance. The following data-manual was set up to guide you through placing into operation the SCA 107 and to support you through configuration.

1.1. Safety and operating instructions



When assembling, starting-up and adjusting the modules, it is necessary to consider the system specific references in the manual instruction!



The modules may only be installed and started up by authorized technical personnel!



When assembling the modules into the receiving points, the adherence of the EMC regulations is to be secured!



The assembly and wiring have to be done without voltage!



With all work the defaults of the DIN EN 50083 have to be considered! Especially the safety relevant execution of the DIN EN 60728-11 is necessary!



The devices come under protection classification I. It is absolutely necessary, therefore, to insert the mains plug into a socket with protective contact

1.2. Contact

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1.3. Basic properties

The SCA 107 DVB Scrambler housed in a 19" 1RU chassis is specifically designed for today's and future digital network applications. This scrambler module provides DVB Simulcrypt scrambling to one transport stream and enables the operator to easily implement Pay TV services in association with a Conditional Access System (CAS).

The module is equipped with an ASI input port along with paired ASI output ports and shows excellent performance.

The SCA 107 is provided with remote management software and the module can be controlled locally through a front panel keypad and display and remotely through its Ethernet interface.

1.4. Unit options

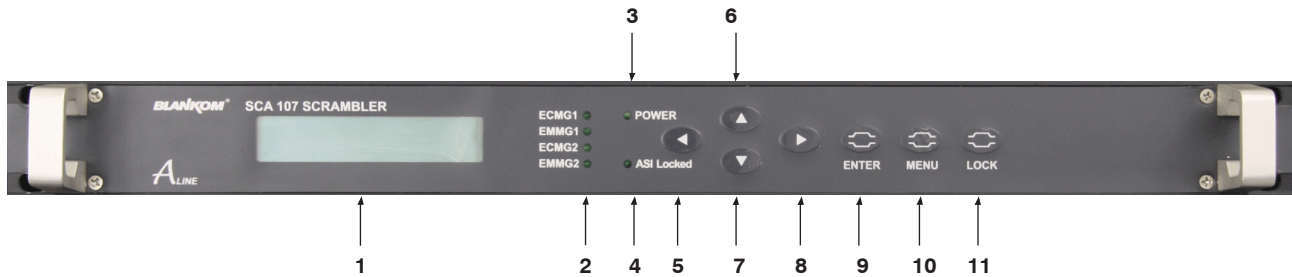
SCA 107 0160.81 ASI-TS → ASI-TS

1.5. Features

- Fully DVB Compliant
- Single Input Port
- Paired Output Port
- Up to 54Mbps Output Rate
- Remote Management Software
- Robust and user-friendly interfaces.

2. Panel description

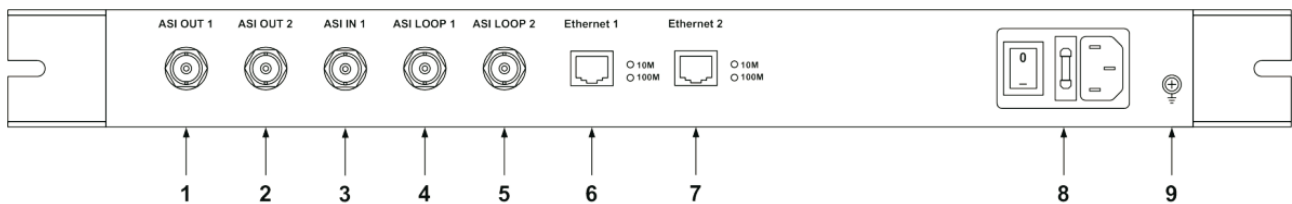
2.1. Front panel



Item	Description	Function
1	LCD Display Panel	Displays the System status and menu settings
2	ECMG/EMMG Indicators	Displays whether the unit is connected to the ECM and EMM generators
3	Power Supply Indicator	Displays whether the unit is powered
4	ASI Locked Indicator (green)	Displays whether the unit is in lock state*
5	Left Control Button	Allows user to move through menu system
6	Up Control Button	Allows user to move through menu system
7	Down Control Button	Allows user to move through menu system
8	Right Control Button	Allows user to move through menu system
9	Enter Control Button	Allows user to enter the inputs or the menu system
10	Menu Control Button	Allows user to exit the current menu system
11	Lock Control Button	Allows user to access or to lock the unit

*Lock state: The ,Lock' light displays when a valid input ASI signal is detected. No input=No LED.

2.2. Rear panel



Item	Description	Remarks
1/2	ASI Output 1/2	paired
3	ASI Input (1)	
4/5	ASI Loop 1/2	paired
6	Ethernet Port 1	RJ45 Control port for NMS
7	Ethernet Port 2	RJ45 Data port for CAS
8	Power Supply (incl. fuse of device)	
9	Ground Connection	

3. Operation

3.1. Configuration possibilities

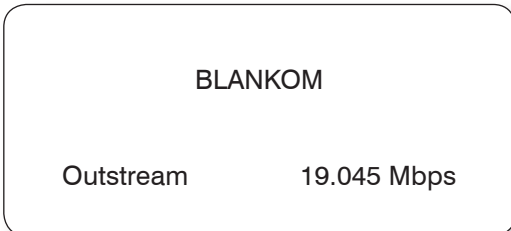
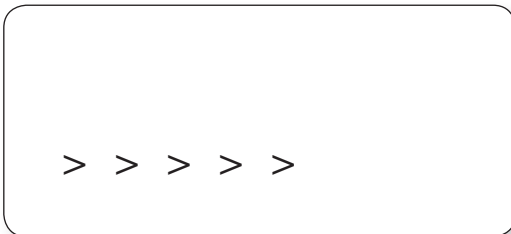
The Scrambler allows the configuration of various basic parameters through the units front panel display. For more in depth configuration, it is required that the Scramblers remote configuration software is used. When using the remote configuration software, it is recommended that the front display panel is not operated.

3.2. Network configuration

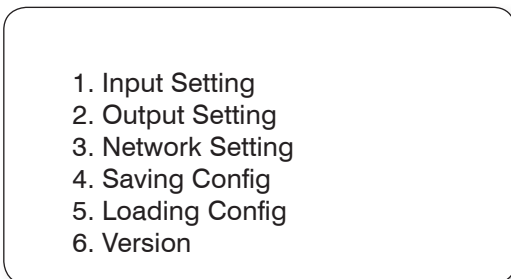
Prior to connecting to the Scrambler, it is required that each unit is configured to have a unique IP address which is suitable for the Ethernet network it will be connected to. This should be done using the Scramblers front panel display. The unit is shipped with a Control Port - IP address of 192.168.2.90 and a Data Port - IP address of 192.168.1.90

3.3. Main menu

Once the unit has been turned on, the device will go through an initialisation process and will show the following:



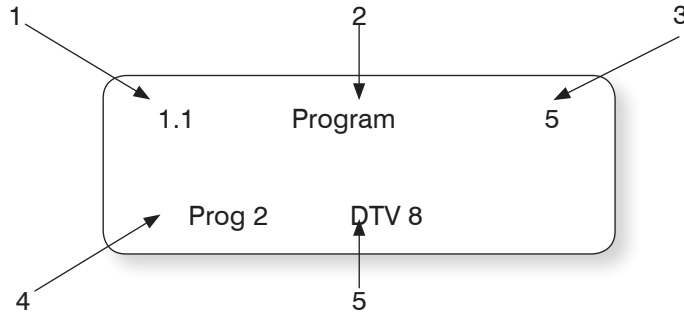
Once the initialisation process has been completed, the 'Lock' button should be pressed to allow the menu system to be accessed. The following menu options will now be shown (displays only two lines):



Using the 'Up' and 'Down' control buttons on the front panel, each of these menus can be selected and controlled.

3.4. Input info

Select the ,1. Input Info' option from the main menu and then press the ,Enter' control button to open this option. A menu similar to the following will be shown:



The various parameters detailed are as follows:

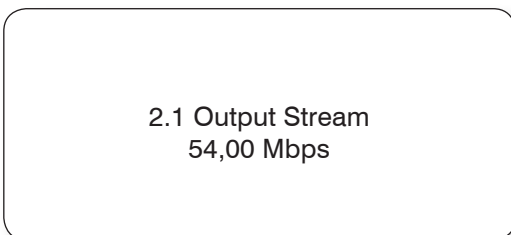
Item	Description
1	Menu Location
2	Program Heading
3	Total Number of Programs on selected input
4	Program Selected
5	Program Name Selected

Using the ,Up' and ,Down' control buttons, select the input program as required.

3.5. Output setting

Select the ,2. Output Setting' option from the main menu and then press the ,Enter' control button to open this option.

The following menu option will now be shown:



This parameter is used to set the Maximum Output Bandwidth of the Scrambler. This setting can be modified by pressing ,Enter' on the appropriate setting and then altering the values using the Up/Down/Left/Right control buttons.

3.6. Network setting

Select the 'Network Setting' option from the main menu and then press the 'Enter' control button to open this option.

The following menu option will now be shown (really two-line only, including the current data):

- 3.1 IP Address
- 3.2 Subnet Mask
- 3.3 Gateway
- 3.4 Console Address
- 3.5 MAC Address
- 3.6 NMS Port
- 3.7 DataSrv IP Address
- 3.8 DataSrv SunMask
- 3.9 DataSrv Gateway

The various parameters detailed are as follows:

Menu	Description	Remarks
3.1 IP Address	IP Address of Control Port	Ethernet 1 socket
3.2 Sub Net Mask	Sub Net Mask of Control Port	Ethernet 1 socket
3.3 Gateway	Gateway of Control Port	Ethernet 1 socket
3.4 Console Address	is not currently used*	Ethernet 1 socket
3.5 MAC Address	MAC Address of Control Port (Info)	Ethernet 1 socket
3.6 NMS Port	TCP/UDP Port Address	Ethernet 1 socket
3.7 DataSrv IP Address	IP Address of Data Port (CAS)	Ethernet 2 socket
3.8 DataSrv SubMask	Sub Net Mask of Data Port (CAS)	Ethernet 2 socket
3.9 DataSrv Gateway	Gateway of Data Port (CAS)	Ethernet 2 socket

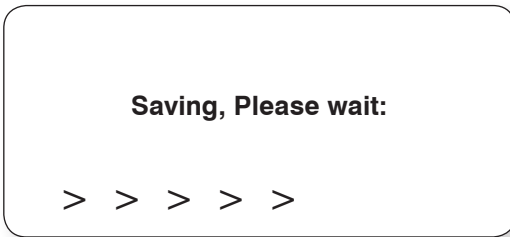
* The Console Address has been added for the future, so that alarm status can be sent to a separate alarm monitoring computer.

Using the 'Up' and 'Down' control buttons, select the menu item as required.

All of the settings shown (except "3.5 MAC Address") can be modified by pressing 'Enter' on the appropriate setting and then altering the values using the Up/Down/Left/Right control buttons.

3.7. Saving configuration

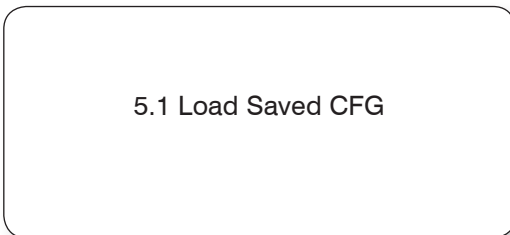
Press the ‚Enter‘ button for saving all current settings.



3.8. Loading configuration (CFG)

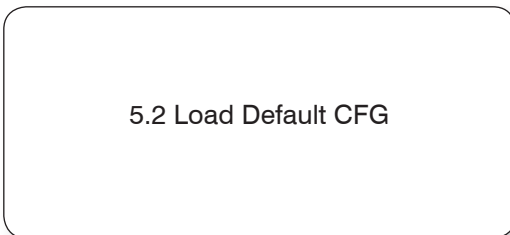
Load saved configuration (CFG)

This option can be selected for loading all (earlier) saved device settings.



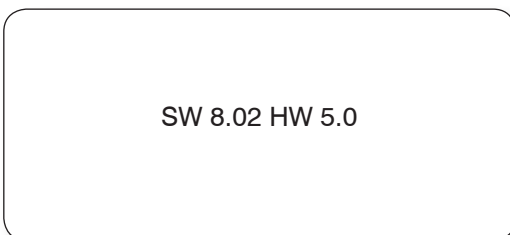
Load default configuration (CFG)

This option can be selected to load all default settings.



3.9. Version

This option can be selected to display the current Software and Hardware Version of the device.



4. Annex

4.1. Technical specifications

Input

Interface	1 Standard ASI Port (BNC)
Impedance	75 Ω
Input Packet Length	188 or 204 bytes
Data rate	54 Mbps

InputLoop

Loop output Interface	Standard ASI Port (BNC, paired)
Loop Interface Impedance	75 Ω

Output

Interface	Standard ASI Port (BNC, paired)
Impedance	75 Ω
Packet Length	188 bytes
Data Rate Max.	54 Mbps

Control/Data/Monitor

Local	Seven Buttons and a LCD
Remote (Long Distance)	Ethernet (TCP/IP)
Remote Interface Socket	RJ45

Software Updates

Ethernet (TCP/IP)

General Features

Housing	1RU Box
Dimensions	44 mm x 482 mm x 410 mm
Weight Approx.	2.5 kg

Operating Conditions

Operating Voltage	AC 85 ... 264V , 50/ 60 Hz
Consumption	30W
Temperature Range	0° C to 45° C
Humidity	5% to 80%

4.2. Glossary

ASI	Asynchronous Serial Interface
CFG	Configuration
CAS	Conditional Access System
DVB	Digital Video Broadcast
ECMG	Entitled Control Message Generator
EMMG	Entitled Management Message Generator
IP	Internet Protocol
MPEG	Motion Picture Expert Group
NMS	Network Management Software
PCR	Program Clock Reference
PID	Packet Identifier
PSI	Program Specific Information
SI	Service Information
SNMP	Simple Network Management Protocol
TCP/IP	Transmission Control Protocol/ Internet Protocol
TS	Transport Stream
UDP	User Datagram Protocol

4.3. Bibliography

- [1] EN 60728-11: Cable networks for television signals, sound signals and interactive services Part 11: Safety (IEC 60728-11:2005); German version EN 60728-11:2005
- [2] EN 50083-2 : Cabled distribution systems for television and sound signals. Electromagnetic compatibility for equipment; EN 50083-2:2001

4.4. History

Version	Date	Modification	Editor
1.00	01.07.2009	Basic document	Bähring, Poch
1.01	13.07.2009	Modification	Rudolph, Schmidt

Options and other TV standards available upon request! Subjects to changes due to technical progress

Declaration of Conformity

The Manufacturer

BLANKOM Antennentechnik GmbH · Hermann-Petersilge-Str. 1 · 07422 Bad Blankenburg · Germany

herewith declares the conformity of the product

Product name: DVB Scrambler

Type: SCA 107

Product number: 0160.81

according to the following regulations

EN 50083-2

EN 60728-11 (as far as relevant)

and additional device-specific regulations, enclosed above, which this product is subjected to.

Date: 13.07.2009

Signature:



Piero Kirchner
(Managing Director)