BLANKOM®

Professional Headend Solutions

Operating instruction

DVB Multiplexer

8 x ASI-TS → 2 x ASI-TS

Contents

MXA 107
Part N°: 0161.81

...Setting Signals

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 ist performance.The following data-manual was set up to guide you through placing into operation the MXA 107 and to support you through configuration.

1.1 Safety and operating instructions

STOP 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 [1] 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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I

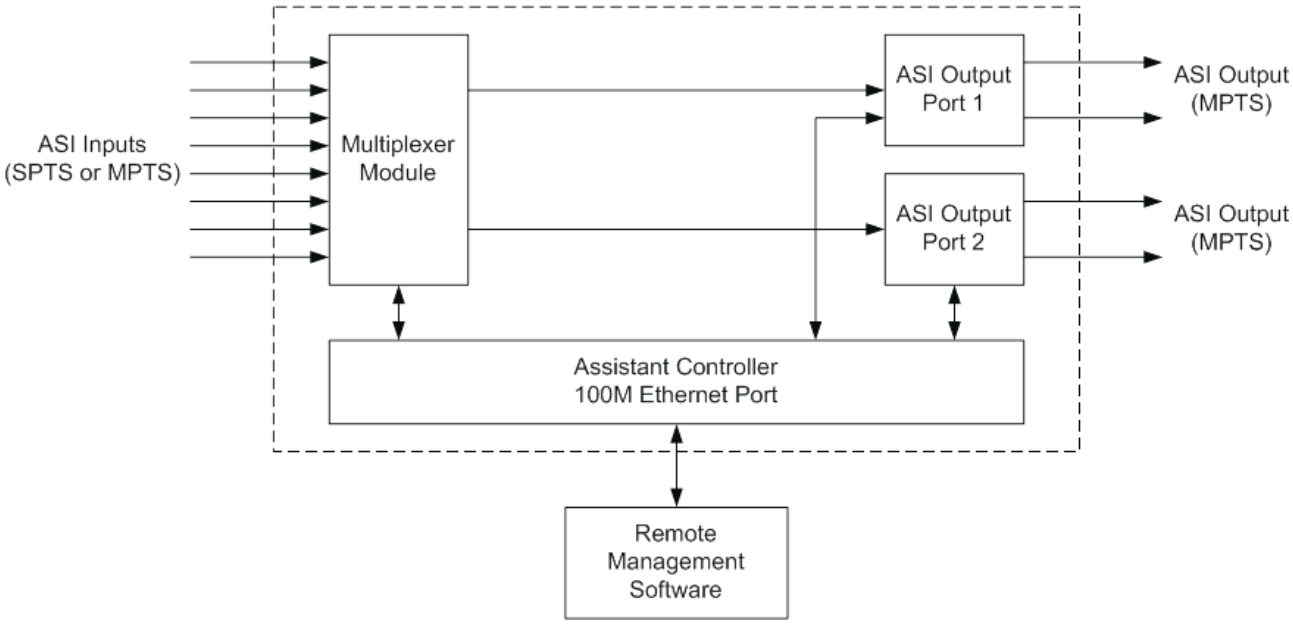
1.3 Basic properties

The MXA 107 is the latest generation of embedded DVB compliant multiplexer from BLANKOM. This unit is capable of multiplexing Single and Multiple Program Transport Streams (SPTS/MPTS) from up to eight input ports into two independent Transport Streams (TS) ready for broadcast on (IN) a digital network. These two independently configurable output ports offer the operator maximum flexibility and allow two separate systems to be fed from the same device if required. Using the Remote Management software, units can be configured and managed remotely through an Ethernet network or directly through the front display panel. The MXA 107 multiplexer offers the operator a high performance device with flexibility ensuring that it meets network requirements.

1.4 Unit options

MXA 107	0161.81	8 x ASI-TS → 2 x ASI-TS

1.5 Basic operation



The multiplexer can process MPEG-2 respective MPEG-4 Single Program Transport Streams (SPTS) or Multiple Program Transport Stream (MPTS) inputs and will provide two MPEG-2/ MPEG-4 MPTS outputs.
Using the Remote Management Software, it is possible to edit the structure and parameters of the input transport streams and carry out the following functions:

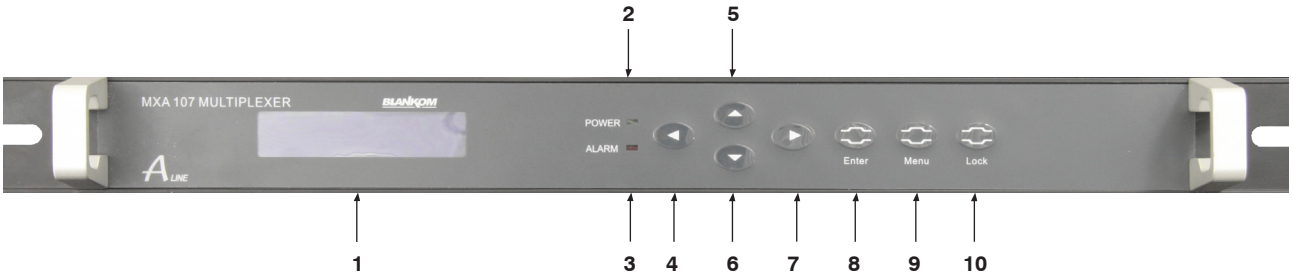
- Reference the video, audio and additional data for each input stream
- Filter out empty or redundant transport stream contents
- Edit the Packet Identifier (PID) as required to integrate streams from second source with the same PID details
- The device allows the modification of user specific Program Specific Information (PSI) and Service Information (SI) for streams
- Reprocesses the Program Clock Reference (PCR) using the System Time Clock (STC)

1.6 Features

- Fully DVB compliant
- Eight input ports
- Up to 128 Mbps input rate
- Two independent output ports
- Up to 90 Mbps output rate (used data rate)
- Multiplexing of SPTS or re-multiplexing of MPTS streams, MPTS processing supports All-Chosen or Part-Chosen option
- Remote control/ management through Ethernet network by management software
- Robust and user-friendly interfaces
- Remote software update
- Real time input status monitoring

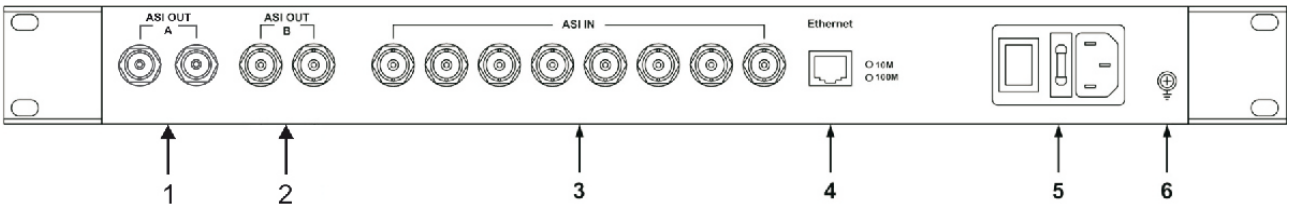
2. Panel description

2.1 Front panel



Item	Description	Function
1	LCD Display Panel	Displays the system status and menu settings
2	Power Supply Indicator	Displays whether the unit is powered
3	Alarm Indicator	ASI input state: The LED will be off if at least one ASI feed is connected
4	Left Control Button	Allows user to move through menu system
5	Up Control Button	
6	Down Control Button	
7	Right Control Button	
8	Enter Control Button	Allows user to enter the inputs or the menu system
9	Menu Control Button	Allows user to exit the current menu system
10	Lock Control Button	Allows user to access or to lock the unit

2.2 Rear panel



Item	Description	Remarks
1	ASI output A – multiplexed output DVB compliant, MPTS, 75 Ω BNC connection	in pairs
2	ASI output B – multiplexed output DVB compliant, MPTS, 75 Ω BNC connection	in pairs
3	ASI input ports 1 to 8 DVB compliant SPTS or MPTS. 75 Ω BNC connection	
4	RJ45 Ethernet port	
5	Power supply (incl. fuse of device)	
6	Ground connection	

3. Operation

3.1 Configuration possibilities

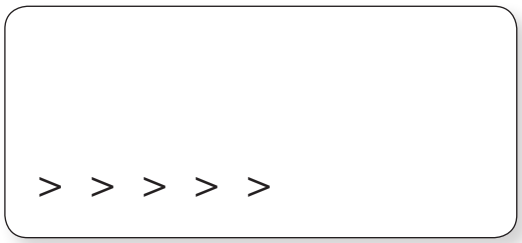
The multiplexer allows the configuration of various basic parameters via front panel display.
The remote software of the multiplexer is necessary for further configurations.
When using the remote configuration software, it is recommended not to operate the front keys.

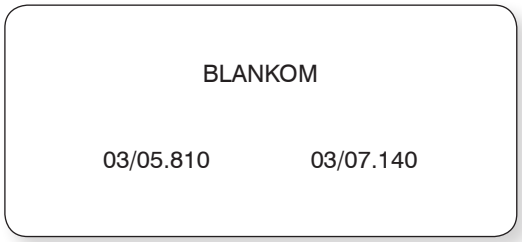
3.2 Network configuration

Before connecting the multiplexer, it is required that each device is configured with the unique IP address. (IP address according to IP network structure, ask your administrator)
The new IP address has to be configurated via display keys (default IP address 192.168.2.90.)

3.3 Main menu

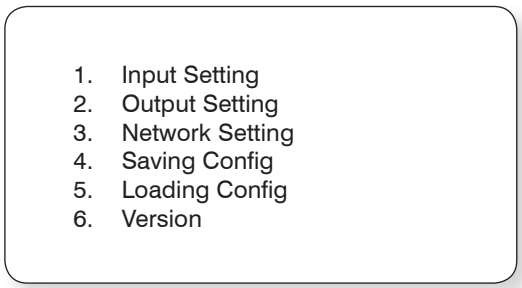
If the unit has been turned on, the device will run an initialisation process and will show the followin picture:





If the initialisation process is completed, the ‚Lock' button should be pressed to allow the access to the menu system.

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.

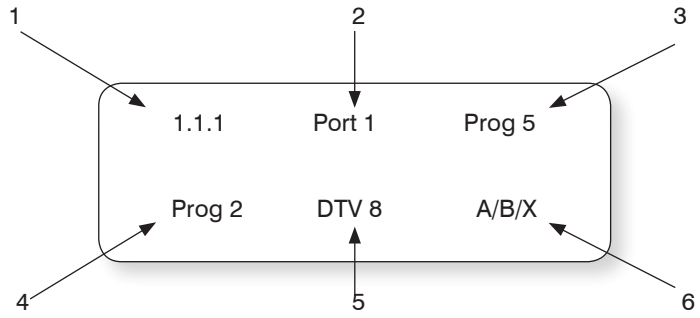
3.4 Input setting

Select the ‚1.Input Setting' option from the main menu and then press the ‚Enter' control button to open this option.
The following menu options will now be shown (displays only two lines):

1.1. Port 1
1.2 Port 2
1.3 Port 3
1.4 Port 4
1.5 Port 5
1.6 Port 6
1.7 Port 7
1.8 Port 8

Using the ‚Up' and ‚Down' control buttons, select the required port.
Each Port relates to the associated ASI input port found on the rear panel of the unit.
If the required port has been selected, press the ‚Enter' control button to open the options of the port.

A menu similar to the following will be shown:



The various parameters detailed are as follows:

Item	Description
1	Menu location
2	Port selected
3	Total number of programs on selected port
4	Program selected
5	Program name selected
6	Configured status A = Added to output A B = Added to output B X = Not added to output

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 options will now be shown (displays only two lines):

2.1 Port A
2.1.1 Output Stream
2.1.2 TransStream ID
2.2 Port B
2.2.1 Output Stream
2.2.2 TransStream ID

Menu	Description
2.1 Port A	Selects output port A
2.1.1 Output Stream	Sets the maximum output A-Bandwidth of the multiplexer
2.1.2 TransStream ID	Sets the ID that is used for the transport stream being outputted on port A of the multiplexer
2.2 Port B	Selects output port B
2.2.1 Output Stream	Sets the maximum output B-Bandwidth of the multiplexer
2.2.2 TransStream ID	Sets the ID that is used for the transport stream output on port B of the multiplexer

Using the ‚Up' and ‚Down' control buttons, select the menu item as required. Both settings can be modified by pressing ‚Enter' and 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 (displays only two lines, including the current data).

3.1 IP Adress
3.2 Subnet Mask
3.3 Gateway
3.3 Console Adress
3.4 MAC Adress
3.5 NMS Port

Menu	Description
3.1 IP Address	IP address of control port
3.2 Sub Net Mask	Sub Net Mask of control port
3.3 Gateway	Gateway of control port
3.4 Console Address	is not currently used*
3.5 MAC Address	MAC address of control port (info)
3.6 NMS Port	TCP/UDP port address

* 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 displayed settings (except "3.5 MAC Address") can be modified by pressing ‚Enter' on the required settings.(using the Up/Down/Left/Right control buttons)

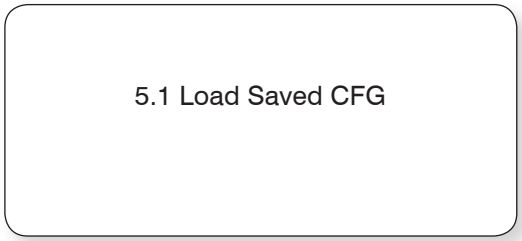
3.7 Saving configuration

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

3.8 Loading configuration (CFG)

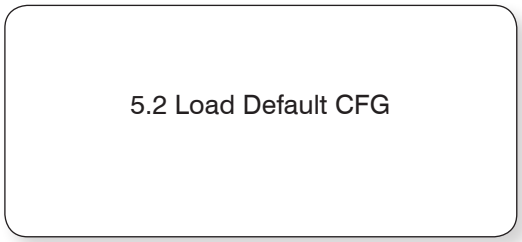
Load saved configuration (CFG)

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



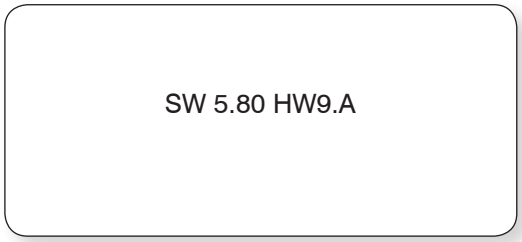
Load default configuration (CFG)

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	8 standard ASI ports (BNC)
Impedance	75 Ω
Data rate	up to 128 Mbps
Input max. PID quantity	256
Input packet length	188 or 204 bytes

Output

Output interface	2 x independent multiplexed ASI output ports in pairs (BNC)
Output interface impedance	75 Ω
Output packet length	188 bytes
Output interface data rate max.	90 Mbps unscrambled

Control/ 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
Power consumption	30 W
Temperature range	0ºC to 45ºC
Humidity	5% to 80%

4.2 Glossary

ASI	**A**synchronous **S**erial **I**nterface
CFG	**C**on**fig**uration
DVB	**D**igital **V**ideo **B**roadcast
ID	**Id**entifier
MPEG	**M**otion **P**icture **E**xpert **G**roup
MPTS	**M**ulti **P**rogram **T**ransport **S**tream
NMS	**N**etwork **M**anagement **S**oftware
PCR	**P**rogram **C**lock **R**eference
PID	**P**acket **Id**entifier
PSI	**P**rogram **S**pecific **I**nformation
SI	**S**ervice **I**nformation
SNMP	**S**imple **N**etwork **M**anagement **P**rotocol
SPTS	**S**ingle **P**rogram **T**ransport **S**tream
STC	**S**ystem **T**ime **C**lock
TCP/IP	**T**ransmission **C**ontrol **P**rotocol/ **I**nternet **P**rotocol
TS	**T**ransport **S**tream

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	Rudolph, Schmidt
1.01	13.07.2009	Modification	Rudolph, Schmidt

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

CE 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 Multiplexer
Type:	MXA 107
Product number:	0161.81

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)