

IP to DVB-T/C transmodulators miq440, mix440

1. Product description

The devices are modulators with IP input and 4 DVB-T (mix440) and DVB-C (miq440) output channels. The devices are designed for digital modulation with Transport Stream Processing of TV or Radio programmes, received from streamers or other IPTV sources. Devices filter services, modifies SI (Service Information), generates NIT (Network Information table), LCN (Local Channel Number). All of the configurations can be changed by using the Web Interface.

miq440 – modulator with IP (100/1000 Mbit/s) input and four DVB-C output channels.

mix440 – modulator with IP (100/1000 Mbit/s) input and four DVB-T output channels.

Modulators can be used as a stand alone devices.

The product is intended for indoor usage only.

2. Safety instructions

Installation of the transmodulator must be done according IEC60728-11 and national safety standards.

Any repairs must be made by qualified personnel.

Do not expose this transmodulator to moisture or splashing water and make sure no objects filled with liquids, such as vases, are placed near or on the unit.

Avoid placing the transmodulator next to heat sources such as central heating components or in areas of high humidity.
Keep the transmodulator away from naked flames.

If the transmodulator has been kept in cold conditions for a long time, bringing it into a warm environment may cause condensation, so allow it to warm up for no less than 2 hours before plugging into the mains.

Ventilation should not be impeded by covering the transmodulator, such as newspapers, table-cloths, curtains etc.

Mount the transmodulator in a vertical position only. If installing in a 19" rack system additional forced air cooling fans may be required (see table "Technical specifications" - operating temperature range).

Always allow 10 cm of free space from the top, front and bottom of the unit to enable any heat to be dissipated.



This product complies with the relevant clauses of the European Directive 2002/96/EC. The unit must be recycled or discarded according to applicable local and national regulations.



Equipment intended for indoor usage only.



TERRA confirms, that this product is in accordance to following norms of EU: EMC norm EN50083-2, safety norm EN60065, RoHS norm EN50581.



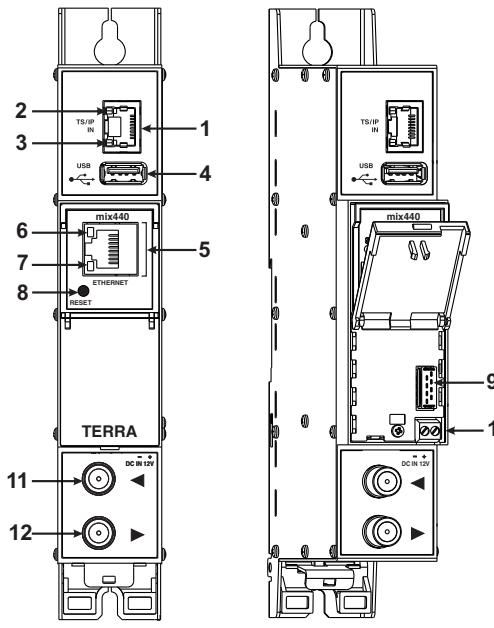
TERRA confirms, that this product is in accordance with Custom Union Technical Regulations: "Electromagnetic compatibility of technical equipment" CU TR 020/2011, "On safety of low-voltage equipment" CU TR 004/2011.



TERRA confirms, that this product is in accordance with safety standard AS/NZS 60065 and EMC standards of Australia.

Vers. 1.01

3. External view



- 1 - TS/IP IN - streaming Ethernet interface. RJ45 socket.
 2 - ACTIVITY (yellow) indicator of the streaming Ethernet interface.
 3 - LINK (green) indicator of the Ethernet interface.
 4 - USB - USB-A connector for USB flash.
 5 - ETHERNET - control Ethernet interface. RJ45 socket.
 6 - ACTIVITY (yellow) indicator of the control Ethernet interface.
 7 - LINK (green) indicator of the control Ethernet interface.
 8 - RESET button. Press this button shortly to restart the module. Press this button for more than three seconds to set default IP address of the control Ethernet interface.
 9 - Power distribution bus connector.
 10 - +12 V DC powering input. Screw terminal.
 11 - RF input (output signal loop-through). F socket.
 12 - RF output. F socket.

Figure 1. External view of the transmodulator

4. Installation instructions

Read the safety instruction first.

All settings can be changed using the web browser via control Ethernet interface.

Disconnect power supply unit from the mains before making any changes in the connections of the module. Fasten the module on DIN RAIL or individual holder. The module or mounting bracket must be fixed with steel screws Ø 3.5-4 mm. The screws are not included in a package.

Connect all necessary RF, powering and control cables. Shielded Ethernet cable is recommended.

Connect the 75Ω load to the unused RF input F sockets.

Connect power supply in to the mains.

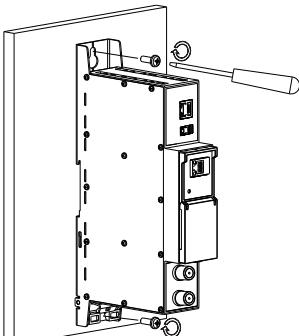
Within 30-40 seconds of powering the module will run in normal operation mode.

Comments of the front panel indicators:

- the LINK [7] green indicator is on when the link with the control Ethernet interface is established. Indicator is off when there is no link.
- the ACTIVITY [6] indicator blinks, if communication via the control Ethernet interface is active.

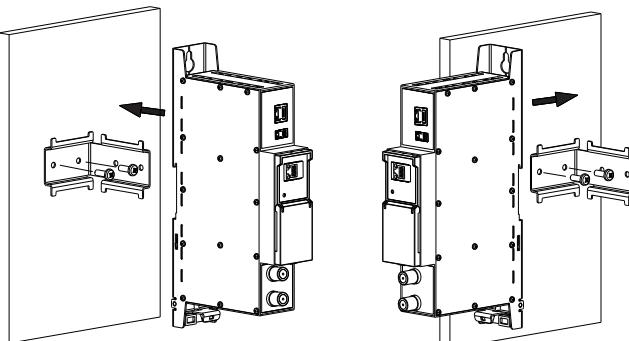
5. MOUNTING

Mounting on a wall by screws



Perpendicular to the wall

Mounting on a bracket (supplied)



Parallel to the wall

Mounting on DIN rail

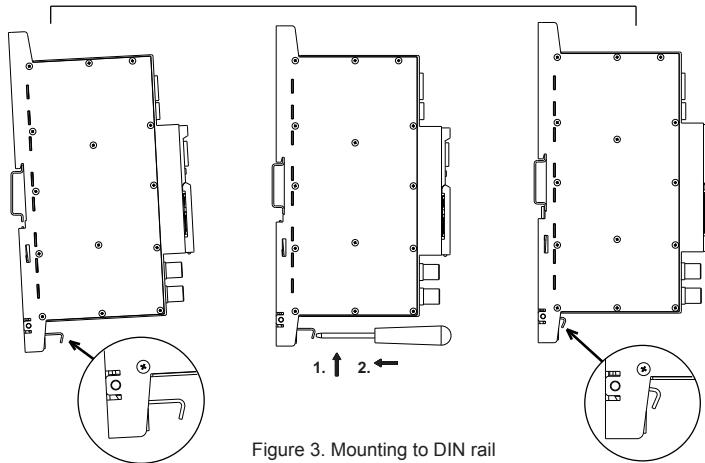


Figure 3. Mounting to DIN rail

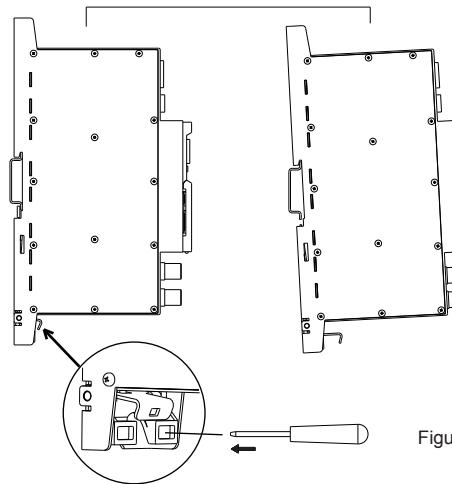


Figure 4. Mounting from DIN rail

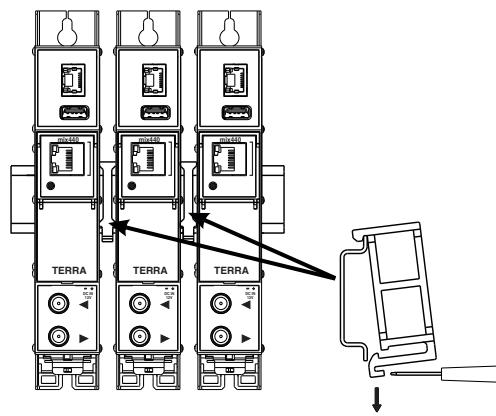


Figure 5. Mounting or removing to/from DIN rail of plastic spacers (supplied).

6. Operating

6.1 Initial configuration

All modules leave the factory with this control over Ethernet interface IP address: 192.168.1.10. In order to avoid conflicts with other IP addresses, it is necessary to perform an initial configuration in the local mode. Subsequently, it will be possible to access the module via local area network (LAN), either to change the configuration or to check the operating status.

The modules leave the factory with the following control over Ethernet interface TCP/IP configuration:

IP address of the module: 192.168.1.10

Subnet mask: 255.255.255.0

Default Gateway: 192.168.1.1

Figure 6. Login window

Access to the module is protected by user name and password. The default user name and password is **admin**. Enter the user name and password and click on "Login" button.

Note: the default password - **admin** - can (and must) be changed as explained in the section **6.16 "User management"**. During initial configuration you need to change the default control interface TCP/IP configuration as explained in the section **6.8 "IP parameters"**.

Note: If you are using Internet Explorer Web browser, supported version is 10 or higher.

Control interface IP address reset to default procedure: press the "RESET" [8] button for more than 3 seconds. When the LINK [7] indicator will start blinking, release it. After this operation the control interface IP address will be set to **192.168.1.10**, user name and password set to **admin**.

6.2 General configuration

Initial Web interface screen

The first screen that appears when the module accessed contains the "Main" window, which gives general information on the device.

[1] [2] → Logged in as: admin [3] → Logout

Device information	
Device model:	miq440
Serial number:	miq4400017210001
Title:	IP to DVB-C
Region:	LTU
Software version:	1.00
FPGA version:	0.00
IP:	192.168.1.70
System time:	2015-01-01, 00:38:58
Up time:	0:39:01

Output bitrates	
#1	0.0/0.0Mbps
#2	0.0/0.0Mbps
#3	65% / 28.9/44.3Mbps
#4	86% / 44.0/50.6Mbps

System status	
Internal temperature:	50 C
Input bitrate:	72.9 MBits/s
Processor load:	15 %
Main supply voltage:	12.0 V

Figure 7. General information screen

In the top of each configuration screen you will see a main menu tabs. Using it, you can switch between the different configuration menu. The tab highlighted in yellow shows which menu is active at a given moment. The "System menu" tab contains several submenu items. Also common elements for all screens are module title and login information strings. Pressing on the "Logout" string you can logout from module control.

7. Technical specifications

Type		mix440	miq440
IP input	standard	IEE802.3 100/1000 BaseT	
	bitrate	up to 200 Mbps	
	reception protocols	UDP/RTP	
	MPTS	Yes	
	SPTS	Yes	
RF output	DVB standard	DVB-T	DVB-C
	frequency range	170-230 MHz, 470-862 MHz	96-862 MHz
	channel allocation, adjacent	4	
	allocation step	7, 8 MHz	7, 7.5, 8, 8.3, 8.5 MHz
	level/impedance	90 ± 2 dBµV/75 Ω	
	TS bit rate	< 31 Mbit/s	< 53 Mbit/s
	MER	≥ 35 dB	≥ 40 dB
	modulation	QPSK, QAM16, QAM64	QAM16, QAM32, QAM64, QAM128, QAM256
	channel bandwidth	7 MHz / 8 MHz	4...8.3 MHz
	symbol rate	-	3.5 ÷ 7.2 Ms/s
Transmission mode	transmission mode	2K / 8K	-
	total output level adjustment	0 ÷ -15.0 dB by 1 dB step	
	loop through frequency range/loss	45-862 MHz / ≤ 2.5 dB	
	Management port	standard IEE802.3 10/100 BaseT (independent on IP input)	
	Supply voltage	12 V ± 1 V	
Dimensions/Weight (packed)	Current consumption	0.7 A	
	Operating temperature range	0° ÷ +50°C	
	Dimensions/Weight (packed)	36x198x112 mm/0.84 kg	

(pr) software control

6.16 User management

User may change a password here. Length of the password is up to 16 symbols. Type current password and double enter new password to change it.

If logged in user has admin role, new users can be added (see Figure 24 "User management").

Figure 24. User management

Enter it's username, password, select a role and press „Add“ button.

Only administrator (user with a role „admin“) may manage other users.

Note: By giving your personal password or user access account for another person, you take full responsibility for all module settings modifications made by that person or anyone else they may give the password too.

6.17. Restore defaults

All parameters will be restored back to factory defaults after confirmation. The exception – IP address and users – these parameters will be unchanged. To restore IP address and system password to system defaults, see „RESET“ button description.

Several seconds can take to restore all parameters, so be patient.

6.18. Restart the device

Device will be restarted after confirmation to do it. This is an alternative to pressing a „RESET“ button when the device is operating.

6.19. Date, Time

System time can be configured manually or taken from NTP server (only if module can access NTP server).

Figure 25. "Date, Time" settings table

6.20. Language

Device control panel supports several preinstalled languages. A change of language requires system restart. Note, that all previously logged records will remain in previous language.

Additional languages can be installed under request. Contact our distributors for such possibility.

Device information table

This shows the following data of module:

“Device model”: model of the module.

“Serial number”: serial number of the module.

“Title”: user may assign a title to the device for easier management. Press the button “Change” to modify it. Also it will be visible in other devices and by computers in network devices (if PC supports SSDP).

“Regions”: Device supports several preinstalled regions. The RF channel list depends on which region is selected. Region can be changed without restarting the device. Just select needed region by pressing “Change” button in “Device information” table. Additional regions can be installed under request. Contact our distributors for such possibility.

“Software version”: module software version number.

“System time”: current time, synchronized from ntp server. Local time offset can be selected in the System menu/Date,Time.

“Up time”: time passed from last power-up or restart of the module.

Output bitrates table

It displays the output bitrate status of each channel in real time. Horizontal bar shows the percentage of used available bandwidth in the channel. The 1st number right to the bar shows actual bitrate in Mbps. Next number shows maximum allowed bitrate in the channel and it depends on modulation parameters. Ensure that actual bitrate would not reach more than 95% of available bandwidth. Otherwise bitrate overflow may occur.

System status table

It represents the following parameters at real time: internal temperature in degrees of Celsius, Input bitrate (MBits/s), processor load in percents, power voltage in Volts. Ensure, that Input bitrate does not exceed 200 MBit/s. Otherwise some input packets may be skipped and pixeling on TV will appear. Also, avoid CPU usage to exceed 80%.

Other device in the network

If there are any modules in the network their status and diagnostic information will be displayed as it is in Figure 7 "General information screen". If modules status is red, press the down arrow and diagnostic errors will be displayed. Make sure, that Ethernet router is configured properly to pass SSDP packets (239.255.255.250:1900 and 239.255.255.246:7900). Also make sure that all modules are connected to the same Ethernet network.

Diagnostic information table

It displays all module errors and comments (if possible) how to eliminate them.

Diagnostic information	
No input signal - 192.168.11.100:8888 (TV3)	

Figure 8. Diagnostic information table with errors

6.3 TS input

All transport streams sources are listed here. See figure 9.

List of IP inputs						Load from SAP-SDP	
Enable	Title (optional)	IP Address	Port	Destination channel	Status, CC errors		
<input checked="" type="checkbox"/>	PEARL TV 4K UHD	239.192.4.5	1234	Output 3	0	Edit	Remove
<input checked="" type="checkbox"/>	SES UHD Demo Channel	239.192.2.1	1234	Output 4	19	Edit	Remove
<input checked="" type="checkbox"/>	UHD1 by ASTRA / HD+	239.192.2.2	1234	Output 4	13	Edit	Remove
<input checked="" type="checkbox"/>	TV3	192.168.11.100	8888	Output 1	-	Edit	Remove
<input checked="" type="checkbox"/>				Output 1		Add	

Figure 9. List of IPTV sources

To add new stream source, fill in input fields and press "Add". "Enable" checkbox allows the transport stream to pass for processing. The source can be temporarily disabled rather than removing the source from the system and adding it again. "Title" field used for user only for easier management of all sources. IP address and port numbers are main parameters of the IPTV source. Sources can be multicast or unicast, protocols can be UDP or RTP. In case of multicast, device will send IGMP messages to Ethernet switch for enabling requested sources. Protocol is detected automatically. "Destination channel" is the RF output channel, to which the stream will be forwarded.

"Status, CC errors" column shows the status of each transport stream source. Green icon means, that device see the stream. Yellow - waiting for the stream. Red - stream not found. "rtp" note in the icon means, that the stream protocol is RTP and RTP level errors can be visible by hovering the mouse over the icon.

"Edit" link allows to modify IP source. Values of the line will be copied to input fields and "Update" button will appear, allowing to update settings.

"Remove" link will remove the source from device WITHOUT confirmation request.

Input sources can be loaded automatically via SAP-SDP protocol, if signal sources (streamers) supports it. Press onto "Load from SAP-SDP" link and a window with all channels in the LAN will appear. See figure 10:

SAP-SDP			
Insert	Title	IP address:Port	Destination
<input checked="" type="checkbox"/>	zdf_neo HD	239.192.7.2:1234	Output 1
Included	SES UHD Demo Channel	239.192.2.1:1234	Output 4
Included	UHD1 by ASTRA / HD+	239.192.2.2:1234	Output 4
<input checked="" type="checkbox"/>	tagesschau24 HD	239.192.3.1:1234	Output 1
<input checked="" type="checkbox"/>	ZDF HD	239.192.7.1:1234	Output 1
<input checked="" type="checkbox"/> Select all		<input type="button" value="Insert selected"/>	

Figure 10. SAP-SDP list

Select appropriate destination and press "Insert selected". All selected lines will be added to device.

EPG information should come together with each transport stream at PID 18. Device will combine all EPG information together for each multiplex.

Scrambled channels can be modulated as well. In this case, MPTS is recommended, because it will carry all original EMM/ECM description for each multiplex. SPTS scrambled channels are allowed as well, but should be avoided, because EMM/ECM streams for each channel will increase bandwidth and may raise confusion in some receivers because of complex EMM/ECM multiplexing.

SPTS streams are recommended for non-scrambled channels.

For further TS processing, see "Transport streams" menu section.

6.4 USB

Device allows to play transport stream content from USB stick. Insert FAT formatted USB stick into the socket. After initialization, file content will be visible. See figure 11:

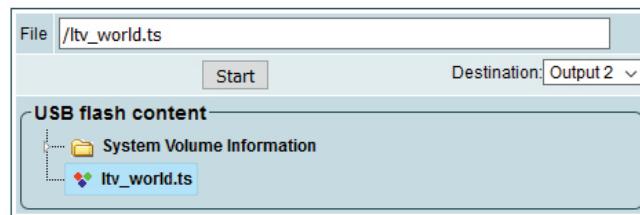


Figure 11. USB content

Select transport stream file you want to play, select output destination and press "Start". All selected transport streams (SPTS or MPTS) will be forwarded to selected output for processing and will be muxed with IP sources. See "Transport streams" menu description for more information. "Start" button will become to "Stop", allowing to stop playing the content.

Only transport stream files with extension *.ts can be played. If you have any other file format (*.avi, *.mkv), use video format converters to convert into *.ts format.

Only one transport stream can be played at a time.

6.5. Transport Streams

All active transport streams, selected at "TS input" or "USB" menu will appear in the list. "Choose output channel" selection switches transport stream list of each output channel. See figure 12.

6.13 Export parameters

All settings of transmodulator can be exported for backup or copying to another device. Press "Export parameters" and "parameters.xml" file will be downloaded to PC. This file can be imported only to the same type of device.

6.14 Import parameters

Exported parameters can be imported back to the device. Press onto "Click to select file" button (see Figure 22 "Import parameters") to select exported file.

The screenshot shows a 'Import parameters' dialog. It has a 'Click to select file' button, a text input field with '.xml' placeholder, and an 'Upload' button.

Figure 22. Import parameters

Press "Upload" button to send the file to the device. It will take several seconds to update all parameters after file upload. After that, device will function with new configuration. No restart is required.

6.15 Firmware upgrade

Device firmware can be upgraded via web browser. Press the "Click to select file" button and select firmware binary file. If valid file was selected, a version number of new firmware will be displayed. Otherwise an error message will appear. Press the "Upload" button to upload new firmware to the device. Upload progress bar will appear and may take several seconds to upload, depending on the size of a file and a network connection speed. A message will be displayed asking to restart the device when the file was sent to the device. New firmware will be programmed into the device only after restart. It may take additional minute or more to flash new program. Device will start up with a new firmware and continue to operate with previous parameters. Additional new firmware features (if any) may need to setup additionally to take effect.

Avoid power supply interruption when a programming process is going on.

Device has possibility to load software revision history and check availability for new software release. Click the "Check online" link. If computer (not device!) has internet access, it will show a list of all software releases with links to binary files. Binary file can be downloaded and saved to computer (see Figure 23 "Firmware upgrade"). After that, use the firmware upgrade method as described above.

The screenshot shows a 'Firmware upgrade' dialog. It has a 'Click to select file' button, a text input field with '884.bin' placeholder, and an 'Upload' button.

The screenshot shows a 'Revision history' section. It lists two versions: '0.02 version (2014-11-24)' and '0.01 version (2014-10-23)'. Each version entry includes a 'Download' link and a file size. Below the versions, there are bullet points for 'New features' and 'Fixed bugs'.

Figure 23. Firmware upgrade

The description of the SNMP configuration parameters:

- "Read Community" - community name acts as a password that is shared by multiple SNMP agents and one or more SNMP managers. "Read Community" password is used for read-only access to the modules parameters.
- "Write Community" - is the password used for read-write access to the modules parameters.
- "Enable TRAP" - SNMP traps are alerts generated by agents on a managed device. Check this box to enable TRAP generation. The module generates traps when the diagnostic message occurs.
- "TRAP Community" - is the password used for accessing of TRAPS.
- "Host IP #1", "Host IP #2", "Host IP #3" - IP addresses of hosts with SNMP managers, where TRAPS will be send.

6.11. System menu

This menu tab contains following submenu items: "Event logs", "Export parameters", "Import parameters", "Firmware upgrade", "User management", "Restore defaults", "Reset the device", "Date,Time", "Language". Mouse over to show the list of this submenu.

6.12. Event logs

Various important events, errors, warnings will be logged into the system Figure 21 "Event logs". Each record has an event type, which can be used to filter particular messages. Just select checkboxes in the „Logs filtering" table and press „apply". Other messages will be hidden.

„Erase logs" button will erase all logs from the system.

„Export logs" button forms the file (log.html) which will be downloaded to PC.

Each record has a log time when the event appeared. Refer to 6.19 "Date and time settings" for instructions how to configure "Time settings".

Event logs		
Date/Time	Event type	Event description
2016-09-07 10:30:48	Event	Bitrate overflow restored back for channel 2
2016-09-07 10:30:15	Event	PMT (Test-R) version change detected in channel 1
2016-09-07 10:30:14	Error	Channel 2 bitrate overflow
2016-09-07 10:28:39	Event	Control ETH interface link up: 100Base-TX full-duplex
2016-09-07 10:28:39	Event	System time updated
2007-01-01 00:00:05	Event	Power off/on restart occurred
2016-09-07 10:28:15	Event	PMT (Test-R) version change detected in channel 1
2016-09-07 10:26:14	Event	PMT (Test-R) version change detected in channel 1
2016-09-07 10:24:25	Event	Logs erased

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Figure 21. Event logs

Choose output channel

Output 4

Service title	Bitrate	LCN	Service ID	Enable
TV SES UHD Demo Channel	25.6 Mbps	0	1	<input checked="" type="checkbox"/>
TV UHD1 by ASTRA / HD+	18.2 Mbps	0	2	<input checked="" type="checkbox"/>

Update
 Select all

Figure 12. Transport stream list of each output channel

A list of services in the selected channel will appear. „List of services“ table shows a list of available services. Icon before the service name indicates service type. Bitrate of each service is measured in real time. Services that currently are not running will be displayed as grayed. They can be selected and will be outputted normally when the services starts running. „LCN“ field is a Logical Channel Number. Every service can have a „channel number“ and TV will sort channels according to it. Just ensure, that all services in all channels have different numbers. Value 0 means, that LCN for that service is not used at all and TV will sort these channels according to its own rules.

Press onto „+“ sign and service information will be extended (see Figure 13 "Service details").

+ Service title: BBC World Service provider: BBC Service ID: 10050 PMT PID: 1858 MPEG1 Audio (eng) PID: 92 MPEG2 Video PID: 163 PCR PID: 163	New service title: BBC World New service provider: BBC <input type="checkbox"/> Scrambled flag: <input type="checkbox"/> Other ID <input type="checkbox"/> 10050 Other PID <input type="checkbox"/> 1858 <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Other PID <input type="checkbox"/> 92 <input checked="" type="checkbox"/> Enable <input type="checkbox"/> Other PID <input type="checkbox"/> 163
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Figure 13. Service details

Service title and provider can be edited (multilanguage character support). „Scrambled flag“ will be inserted into SDT (Service Description Table). Unchecking this checkbox will not descramble the content. It only carries information about the scrambling status of the service.

Individual streams can be disabled as well. Also PID number can be remapped manually by selecting checkbox "Other PID". Keep in mind that PID must be unique, otherwise PID remapping is done automatically.

Press onto „Update“ button to save changes and execute.

6.6. NIT

Several tables related to NIT generation exist in this section. Figure 14 "Global TS parameters" describes following TS parameters:

Global TS parameters	
Network ID	1
Private data specifier (hex)	000023A
Network name	

Update

Figure 14. Global TS parameters

“Network ID”: is unique number within the geographical region defined by the “country code”. For a cable network usually this is a single country code plus 0x2000 (8192). If there are more connected modulators in the network, they must have the same Network ID.

Proper value depending on your country and operator can be found here:

http://www.dvbservices.com/identifiers/network_id?page=1

“Private data specifier (in hex format)": can be inserted in the NIT table for proper LCN description. This value is described in TS 101162 specification. NorDig standard requires 00 00 00 29 value, UK should use 00 00 23 3A value.

"Other options can be found here:

http://www.dvbservices.com/identifiers/private_data_spec_id?page=1

The parameter will not be inserted into NIT if value is set to zero.

„Network name“ is the name of the network.

The 2nd table in the page describes "Transport stream ID" and "Original network ID" of each channel (see Figure 15). Each stream in a network must have unique ID, called „Transport stream ID“. An Original_Network_ID is defined as the "unique identifier of a network". It can be linked to NetworkID or used value from this location:

http://www.dvbservices.com/identifiers/original_network_id?page=1

	RF output parameters	Original network ID	Transport stream ID
Output 1	C21, 8MHz, QAM-64	1	1
Output 2	C22, 8MHz, QAM-64	1	2
Output 3	C23, 8MHz, QAM-64	1	3
Output 4	C24, 8MHz, QAM-64	1	4

Update

Figure 15. Transport stream and original network IDs

Every channel in the network must be described in NIT. Otherwise, TV automatic channel tuning function will not find all channels. All other modules in the network will be monitored via standard SSDP protocol. NIT tables will be regenerated if any change is detected in other modulators with the same Network ID. Make sure, that Ethernet router is configured properly to pass SSDP packets (239.255.255.250:1900 and 239.255.255.246:7900). Also make sure that control ports of all modules are connected to the same Ethernet network.

6.7. RF outputs

Modulator has four adjacent channels. A bandwidth (mix440) and symbol rate (miq440) must be the same for each channel. Output frequency can be setup for the 1st channel in a group. Other RF channel frequency will be calculation automatically according to the selected bandwidth (mix440) or step (miq440). See figures 16 and 17.

	Constellation	Bandwidth	Guard interval	Code Rate	Modulation mode	Cell ID	Output frequency, MHz (Channel)	Attenuator, dB	Enable
Output 1	QAM-64	8 MHz	1/32	7/8	8K	0	474.0	C21	0
Output 2	QAM-64	8 MHz	1/32	7/8	8K	0	482.0	C22	0
Output 3	QAM-64	8 MHz	1/32	7/8	8K	0	490.0	C23	0
Output 4	QAM-64	8 MHz	1/32	7/8	8K	0	498.0	C24	0

Update

Select all

Figure 16. DVB-T output parameters (mix440)

	Constellation	Symbol rate	Output frequency, MHz (Channel)	Attenuator, dB	Enable
Output 1	QAM-64	6875	474.0	C21	0
Output 2	QAM-64	6875	482.0	C22	0
Output 3	QAM-64	6875	490.0	C23	0
Output 4	QAM-64	6875	498.0	C24	0
Step			8.0 MHz		

Update

Select all

Figure 17. DVB-C output parameters (miq440)

The step of RF channels in DVB-C case can be selected to one of these values: 7.0, 7.5, 8.0, 8.3, 8.5 MHz. Actual bandwidth of each channel depends on the symbol rate and can be calculated as SR x 1.15 (1.15 here is roll-off factor of 15%). Symbol rates of all channels must be the same, from the range of 3500..7200 kSym/s.

Output channel enumeration depends on the region selected from the main page. However, it's allowed to enter any frequency you want in a range of 100..858 MHz.

6.8. IP parameters

IP parameters	
MAC address	00:1C:A3:00:00:00
IP address	192.168.1.222
Subnet mask	255.255.255.0
Gateway	192.168.1.1
DNS	8.8.8.8
<input type="button" value="Update"/>	

All device IP settings can be configured here – IP address, subnet mask, gateway, DNS (Domain Name System), see Figure 18 "IP settings table". IP parameters will be updated immediately after pressing „Update“ button and redirect to new location.

Note: IP address can be reset to default (192.168.1.10) by pressing "reset" button for at least 3 seconds. Ethernet "link" led will start to blink quickly to inform, that the reset IP address request has been accepted. Device will be restarted with default IP address.
Streaming interface parameters has only "IP address" field to setup. MAC address field is read-only. Device control is not possible via this interface.

Figure 18. IP settings table

6.9 E-mail-settings

E-mail settings	
Enable e-mail error report	<input checked="" type="checkbox"/>
SMTP server	192.168.1.1
SMTP port	25
Sender e-mail address	no_reply@domain.com
Receiver e-mail address	
Timeout for errors in minutes	5
<input type="button" value="Send test message"/>	
<input type="button" value="Update"/>	

The device can send e-mail reports if errors were detected. SMTP protocol is used for that. Figure 19 "E-mail settings table" shows parameters related to this feature. "Enable e-mail error report" checkbox enables error monitoring. All errors within "timeout" period will be gathered and sent to the e-mail address, provided in "Receiver e-mail address" input box. Comma separated e-mail addresses can be used to send report to multiple addresses. The timer will be started as soon, as the first error is detected and stopped when e-mail is sent. The timer will be restarted again if a new error will appear.
"Sender e-mail address" can be used as authentication in the SMTP server side. SSL (SMTPS) protocol is not supported.

Figure 19. E-mail-settings table

6.10. SNMP settings

"SNMP settings" table is located in "IP parameters" tab.

SNMP settings	
Enable TRAP	<input checked="" type="checkbox"/>
Trap community	public
Read community	public
Write community	private
Trap IP address 1	0.0.0.0
Trap IP address 2	0.0.0.0
Trap IP address 3	0.0.0.0
<input type="button" value="Update"/>	

Figure 20 "SNMP settings" table