

a2b

MyM
micro master

MyM-3S Micro Master

Installation Guide



design for TV

English

design for TV

CONTENT

1. Introduction
2. Unpacking the unit
3. Connections and indications
4. IP settings
5. Menus and settings
 - 5.1 Overview menu
 - 5.2 Input settings
 - 5.3 Output settings
 - 5.4 Service management
 - 5.5 CI menu
 - 5.6 System options
6. Installation and Configuration examples
7. Technical specification MyM-3S
8. Declaration of conformity
9. Abbreviations

1 Introduction

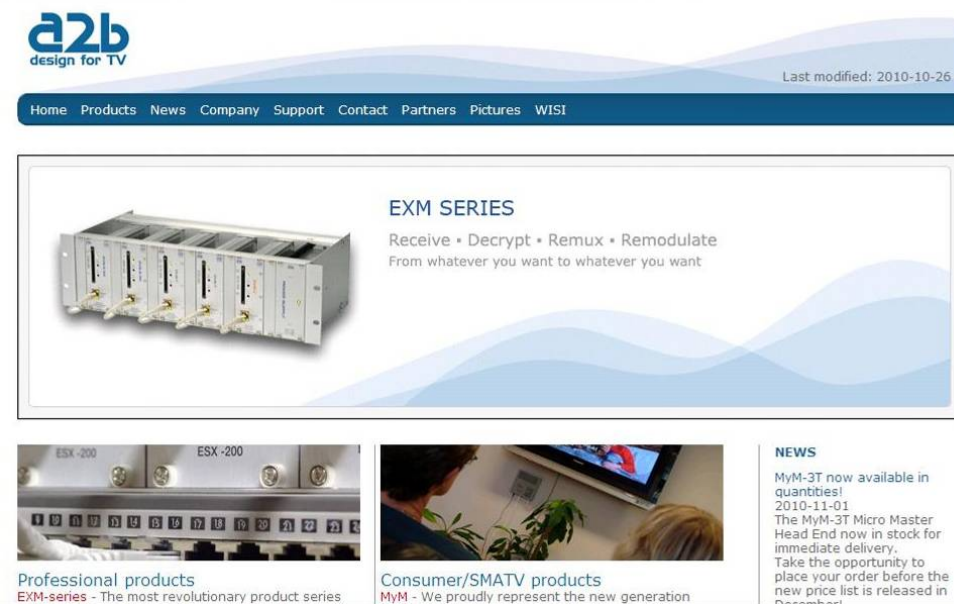
Thank you for purchasing an A2B Electronics product. The MyM-3S is a revolutionary solution for reception and modulation of satellite transmitted TV-content into an analogue format suited for small SMATV networks where cost efficiency and high quality is required. The MyM-3S receives DVB-S and DVB-S2 transmissions.

The MyM-3S unit is delivered with hardware and software that supports DVB-S/S2 reception, MPEG2/MPEG4 decoding, DSB RF modulation with NICAM or A2 audio, IP control and management.

The MyM-3S can be upgraded for enhanced functionality by software upgrades. Software upgrades are available from A2B Electronics web site.

A2B Electronics AB
Phone: +46 (0)141 229115
E-mail: support@a2b.se

Visit our web site www.a2b.se for more information.



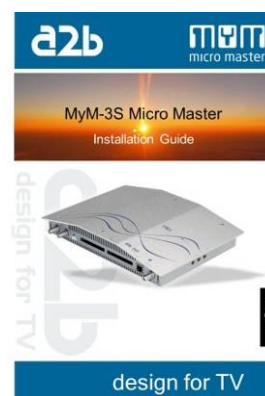
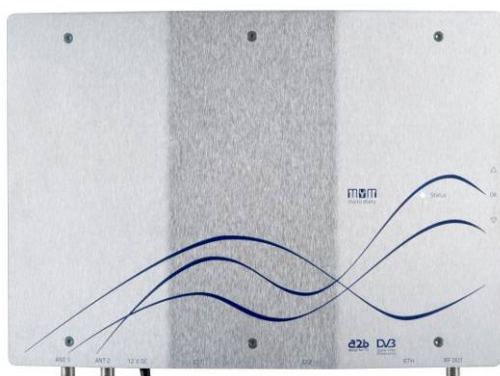
The screenshot shows the A2B Electronics website. At the top left is the logo "a2b design for TV". To the right, it says "Last modified: 2010-10-26". Below the logo is a navigation menu with links: Home, Products, News, Company, Support, Contact, Partners, Pictures, WISI. The main content area features a large image of the EXM SERIES hardware, a text box with the heading "EXM SERIES" and the subtext "Receive • Decrypt • Remux • Remodulate From whatever you want to whatever you want". Below this are three smaller sections: "Professional products" with an image of ESX-200 units and the text "EXM-series - The most revolutionary product series"; "Consumer/SMATV products" with an image of a person watching TV and the text "MyM - We proudly represent the new generation"; and "NEWS" with the text "MyM-3T now available in quantities! 2010-11-01 The MyM-3T Micro Master Head End now in stock for immediate delivery. Take the opportunity to place your order before the new price list is released in December".

2 Unpacking the unit

The following items are included in the package:

<u>Amount</u>	<u>Description</u>
1	MyM-3S Micro Master
1	Installation guide
2	Power supply 12 V

Every unit is quality controlled by us before delivery. Should any items be missing when unpacking, please contact our support service (see page 3 for contact info).



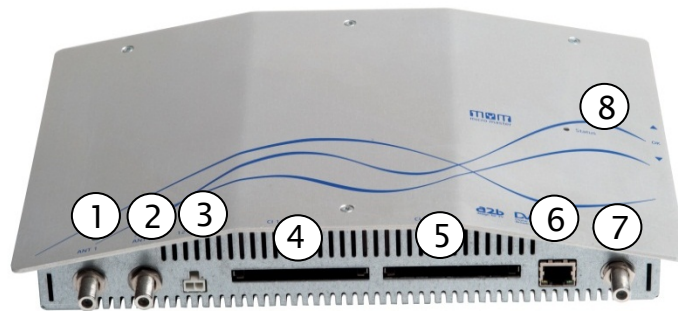
Important information about power supply to MyM-3S unit

To avoid problems with the MyM-3S its is important to use the supplied power supply. Operation with other types of power supplies will void the warranty. (See picture to the right).

NOTE! Never connect two MyM-3S units to one power supply. This may cause damage to your MyM-3S.



3 Connections and indications



- | | |
|-----------------------|---|
| 1. Satellite input 1 | Connect one satellite (LNB) input here (tuner 1 for output Ch1 and output Ch 2) |
| 2. Satellite input 2 | Connect second satellite (LNB) input here (tuner 2 for output Ch 3). |
| 3. Power connector | Connect the supplied power supply to this connector |
| 4. Common Interface 1 | Insert a Common Interface module into this slot (Supports decryption for Channel 1 and 2) |
| 5. Common Interface 2 | Insert a Common Interface module into this slot (Supports decryption for Channel 3) |
| 6. Ethernet port | RJ-45 port for 10/100 baseT Ethernet. Connect your PC to this port for management and upgrades. |
| 7. RF-output | Combined 3 channel RF-output for connection to your SMATV network. |
| 8. Indicator LED | Status indicator |

4 IP settings

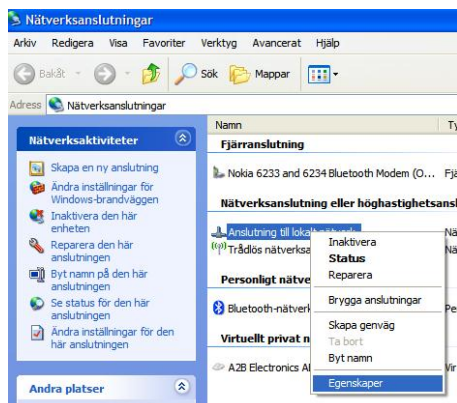
The **MyM-3S** has an embedded web server allowing standard web browsers (Internet Explorer, Firefox, Opera etc.) to connect to the unit for settings and management. No controller software is needed. The MyM-3S has by default a static IP address for connecting your PC to the unit.

The MyM-3S is delivered with the default IP address: 192.168.0.20. First time installation requires that you set a static IP address on your computer. For example set your PC to IP address: 192.168.0.19 and Net mask: 255.255.255.0

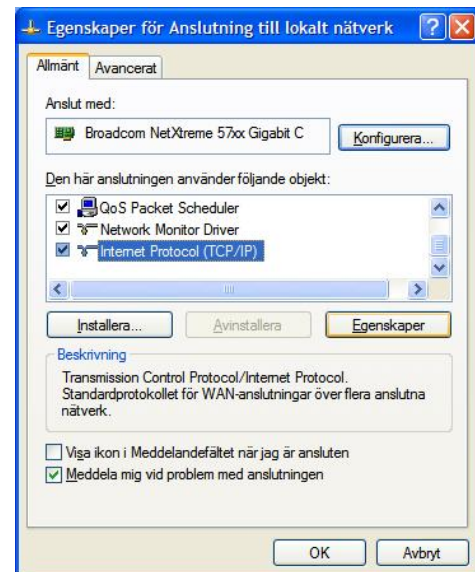


TCP/IP settings for Windows XP (setting your PC to 192.168.0.19)

Select "Start", "Control panel" and "Network connections". Next select "Network and Internet settings". "Right click" on [Settings for local network] and select [Properties].



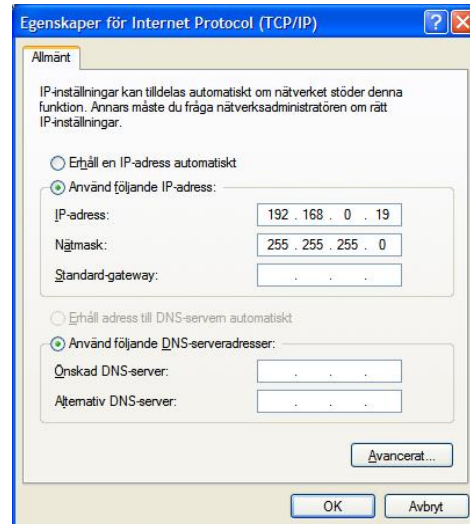
In Properties select [Internet protocol (TCP/IP)] and [Properties].



4 IP settings (continued)

Select [Use this IP address] and write: 192.168.0.19 and select [Net mask] 255.255.255.0. Click [OK] and then click [Close].

NOTE! For PC with other Operating Systems (OS) than Windows, please consult the Owners manual for your PC for [IP/Network settings].



Connecting your PC to the MyM-3S

Connect the MyM-3S to the supplied DC power supply.

See section 6 for installation.

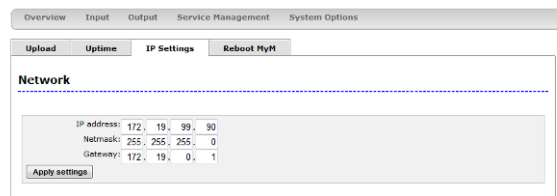
Next connect your PC to the MyM-3S with a network cable.

Start your web browser (Internet Explorer, Firefox, Opera etc.) and write the IP address 192.168.0.20 in the address field of your browser.

Settings of IP address

Click the [System options] menu and then press [IP Settings] to set a new IP address, Netmask and Gateway for the MyM-3S.

MyM Web Control Interface



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5 Menus and settings

All necessary settings can be made in the web GUI via a web browser. When first connection is made with the MyM-3S following overview menu will appear.

5.1 Overview menu

[Current settings]

Contains information of current input and output signals, if the tuners are locked to a signal, firmware version, bootloader version, hardware revision, serial number and current IP Network settings.

MyM Web Control Interface



Overview Input Output Service Management CI System Options

Current Settings Software options

Current Settings

Tuner1 locked:	Yes
Tuner2 locked:	Yes
Firmware version:	2.0-RC3
Bootloader version:	--
Hardware revision:	1211
Serial number:	0420010083100032

Network

IP Address:	192.168.0.20
Netmask:	255.255.255.0
Gateway:	192.168.0.1

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[Software options]

In this menu you can see which software options that are activated.

MyM Web Control Interface



Overview Input Output Service Management CI System Options

Current Settings Software options

Software options

MyM Basic

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To continue with settings click the **[Input]** name in the banner.

5 Menus and settings (continued)

5.2 Input settings

As the MyM-3S contains 2 separate tuners, start by selecting either **[Tuner 1]** or **[Tuner 2]**. Select the modulation type you want to receive. By selecting DVB-S2 you also can select between QPSK, 8PSK or 16 QAM.

Set the Polarisation. Voltage, FEC and 22 kHz tone should normally be set to "Auto" if you have connected the MyM-3S to a Universal LNB or a switch with same functionality as a Universal LNB.

Note! Inverted spectrum is sometimes used in C-band transmissions and is set automatically by auto detection.

MyM Web Control Interface



Overview Input Output Service Management CI System Options

Tuner 1 Tuner 2

Tuner 1 (Channel 1, 2)

Locked: Yes
Level: -34.0 dBm
C/N: 12.0 dB

Satellite settings

System:	DVBS	Set
Modulation:	QPSK	Set
Polarisation:	Horizontal	Set
FEC:	Auto	Set
Voltage:	Auto	Set
22 kHz tone:	Auto	Set
Symbol rate(kBd):	22000	Set
Transponder frequency (MHz):	10882	Set

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Finally enter the correct Symbol rate and press **[Set]** and then enter the Transponder frequency and press **[Set]**. The available services will now be presented in the **[Service Management]** menu. We suggest that you consult: <http://en.kingofsat.net/> or another web site for correct parameters for the services you intend to use.

The input level should be higher than -65 dBm, preferably more than -50 dBm and max -25 dBm and C/N should read more than 10 dB.

5 Menus and settings (continued)

5.3 Output settings

Modulation/ Band

Start the output setup by selecting which band you want to use. You can select VHF-7, VHF-8 and UHF. VHF-7 and VHF-8 corresponds to 7 and 8 MHz bandwidth. After selection press **[Set]**.

Frequency

For each of the 3 possible output channels, set the desired output channel or frequency.

Channel Indicator Name

You can set the “Channel Indicator name” by your personal preference. The Channel Indicator will enable you to detect on a TV-screen which programs that are transmitted from the MyM-3S. Press **[Set]** after each entering.

National/ Subtitle/ Type

Set type of subtitling to Normal or for Hearing Impaired or None

National settings enables language and regional settings depending of the region the MyM-3 S is installed in, or which parameters you want to use for the output.

Language

Select subtitling language. Depends of received languages in the satellite signal.

Priority

Set DVB or Teletext subtitling as default selection.

MyM Web Control Interface



Overview Input Output Service Management CI System Options

Modulation National Advanced

Modulation

Band

Select Band: VHF-7 [Set]
VHF-8
UHF

Frequency

Channel 1	Channel 2	Channel 3
Channel name: S11	Channel name: S13	Channel name: S15
Frequency (MHz): 231.25	Frequency (MHz): 245.25	Frequency (MHz): 259.25

Channel Indicator Name

Channel 1 MYM-1 [Set] Channel 2 MYM-2 [Set] Channel 3 MYM-3 [Set]

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MyM Web Control Interface



Overview Input Output Service Management CI System Options

Modulation National Advanced

National

Subtitle

Type: None
Language: Swedish
Priority: Teletext
Auto conversion: Off
Teletext charset: 0

Audio

Audio language: English

Audio level

Channel 1	Channel 2	Channel 3
Audio Level (dB): -3	Audio Level (dB): -3	Audio Level (dB): -3

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5 Menus and settings (continued)

5.3 Output settings continued

Auto conversion

Converts subtitling to fit actual picture aspect ratio.

Teletext Charset

Select appropriate characters for selected language.

Audio/

Audio language

Select which language to receive and transmit on the outgoing programs.

Audio level

This setting allows to equalise the difference in sound level between different programs. Settings can be done between +3 and -9 dB or Mute.

Advanced/

Aspect ratio

Set correct picture format of the programs transmitted from the MyM-3S.

Video standard

Select your regional video standard.

Audio system

Set your regional audio standard.

Channel Indication

Select to transmit the Channel Indicator names as set up under **[Output/Modulation]**

MyM Web Control Interface



Overview Input Output Service Management CI System Options

Modulation National Advanced

National

Subtitle

Type: None
Language: Swedish
Priority: Teletext
Auto conversion: Off
Teletext charset: 0

Audio

Audio language: English

Audio level

Channel 1	Channel 2	Channel 3
Audio Level (dB): +3	Audio Level (dB): -3	Audio Level (dB): -3

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MyM Web Control Interface



Overview Input Output Service Management CI System Options

Modulation National Advanced

Advanced

Aspect ratio: 4:3
Video Standard: PAL 625
Audio System: Nicam B/G
Channel indication: Off
Loophrough: On

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5 Menus and settings (continued)

5.4 Service Management

The MyM-3S contains 2 separate DVB-S/S2 tuners and totally 3 services can be selected for each of output channels, named **[CH-1]**, **[CH-2]** and **[CH-3]**.

The list of services presents all received services from both tuner inputs.

When one program (service) is selected, the box in front of the program name changes colour to green.

The service list gives following information:

Selected service	Green colour indication
Service name	Program name
Provider	Name of satellite operator
Input	Indicates from which antenna input the service is received
SID	Service ID number (as received)

NOTE! To detect whether a Common Interface module and smart card actually decrypts the programs is only possible by watching the outgoing signal on a TV-set tuned to the correct frequency.

MyM Web Control Interface



Ch-1	Ch-2	Ch-3	Name	Provider	Input	SID
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TVP1	Telewizja Polska SA	Ant 1	7100
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TVP2	TVP	Ant 1	7101
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TVP INFO	TVP	Ant 1	7102
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TVP HD	TVP	Ant 1	7120
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TV Polonia	TVP	Ant 1	7104
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TVP Sport	TVP	Ant 1	7103
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	TVP Kultura	TVP	Ant 1	7106
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TVP Historia	TVP	Ant 1	7105
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	TVP Seriale	TVP	Ant 1	7108
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BELSAT TV	TVP	Ant 1	7107
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EinsExtra	ARD	Ant 2	28721
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Einsfestival	ARD	Ant 2	28722
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EinsPlus	ARD	Ant 2	28723
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	arte	ARD	Ant 2	28724
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Phoenix	ARD	Ant 2	28725
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test-R	ARD	Ant 2	28726

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5.5 CI menu

The MyM-3S contains 2 CI (Common Interface). CI 1 decrypt services for output Ch1 and Ch2. The CI 2 decrypt services for output Ch 3. In menu you get information about CAM and card.

In the Advanced settings menu you can change timing settings for the used CAM if there is a need for changing that. After a change is made the “Save” button must be clicked on. If changes are made and does not work, you can get the default settings again by a click on the “Reset” button and a click on the “Save” button.

MyM Web Control Interface



CI-1 CI-2

CI-1 (Channel 1, 2)

Enter menu

Advanced settings

Card insert poll interval (ms): 100

Module reply timeout (ms): 1000

Module poll interval (ms): 100

Min delay between PMT's (ms): 100

Min delay between sends (ms): 150

Use "update" command:

Decrypt video:

Decrypt audio:

Decrypt subtitle/teletext:

Decrypt other:

Save Reset

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5 Menus and settings (continued)

5.6 System options

Upload/Upgrade

The Upgrade menu is used to be able to download software Upgrades or future software functionality.

The procedure of downloading a new software looks as described below:

1. Download the appropriate file from our web page to your PC.
2. Browse for the file in the MyM-3S User Interface.
3. Press [Upload]
4. Wait 2 minutes.
5. Make a reboot of the MyM-3S
6. Finished

The Upload menu shows current files downloaded into the units and can be useful when contacting A2B support.

Uptime

The Uptime menu gives statistics of uptime and possible re-starts. The log can be cleared in order to have a “clean sheet” after installation.

IP settings

This section shows current IP-address, Netmask and Gateway settings.

Remember to change settings if the default IP-address is used by other devices in your network.

In case you have forgotten your IP-address please consult the A2B support web site and download free of charge our tool “IP-supporter”. This tool finds all MyM-3S and their respective IP-addresses available in your network.

Also remember to press **[Apply settings]** when ready.

Reboot MyM

Pressing **[Reboot unit]** re-starts the MyM-3S. All settings are preserved so no settings or programs will be lost.

MyM Web Control Interface



The screenshot shows the 'Upgrade' menu in the MyM Web Control Interface. At the top, there are navigation tabs: Overview, Input, Output, Service Management, CI, and System Options. Below these are sub-tabs: Upload, Uptime, IP Settings, and Reboot MyM. The 'Upgrade' sub-tab is active. The main content area has a heading 'Upgrade' followed by a sub-heading 'Upgrade the MyM with the latest firmware or software options.' Below this is a text box with the instruction 'Locate and select the upgrade file from your hard disk:' and a file selection interface with a 'Bläddra...' button and an 'Upload' button. A note states: 'Note: Do not disconnect power to the unit during the update. The MyM needs to be restarted after the upgrade has completed.' Below the note is a 'File list' table with columns: File, Version, Build, and Removal. The table contains five rows of files for M2, including 'Lit for M2', 'Translations', 'Audio DSP', 'Video DSP', and 'FPGA'. Each row has a 'Removal' link with the text '[delete]'. At the bottom, there is a copyright notice: 'Copyright © A2B Electronics AB'.

MyM Web Control Interface



The screenshot shows the 'Uptime' menu in the MyM Web Control Interface. It features the same navigation structure as the previous screenshot. The 'Uptime' sub-tab is active. The main content area displays 'Current uptime: 0d 0h 50m 4s', 'Restart note: Unknown', and 'Number of restarts: 0'. There is a 'Clear log' button below this information. At the bottom, there is a copyright notice: 'Copyright © A2B Electronics AB'.

MyM Web Control Interface



The screenshot shows the 'IP Settings' menu in the MyM Web Control Interface. The 'IP Settings' sub-tab is active. The main content area has a heading 'Network' followed by a form for IP configuration. The form includes fields for 'IP address', 'Netmask', and 'Gateway', each with a 'Apply settings' button. The current values are: IP address: 192.168.0.20, Netmask: 255.255.255.0, Gateway: 192.168.0.1. At the bottom, there is a copyright notice: 'Copyright © A2B Electronics AB'.

MyM Web Control Interface



The screenshot shows the 'Reboot MyM' menu in the MyM Web Control Interface. The 'Reboot MyM' sub-tab is active. The main content area has a heading 'Reboot MyM' followed by a 'Reboot unit' button. At the bottom, there is a copyright notice: 'Copyright © A2B Electronics AB'.

6 Installation and configuration

The MyM-3S can be installed either as a stand alone unit directly on the wall or by the use of a dedicated MyM Security Wall Mount (part number 702800.10). The MyM Security Wall Mount secures both the MyM and CAM-modules with a locking function to avoid loss of CAM's and smart cards in public places.

Before connecting power to the MyM-3S, make sure that all other connections have been made. A coaxial cable of good quality with an F-connector should be connected to the Antenna input and another one from the RF output to the SMATV network.

Connect the power supply and make all necessary settings as described in section 4 and 5.



Installation in MyM Security Wall Mount.

Accessories



MyM Security Wall
Mount kit
Art no: 702800.10

7 Technical specification MYM-3S

2 x DVB-S/S2 Satellite Receiver

Input frequency	950 - 2150 MHz
Symbol rate	1-45 Msymbols/s
Connectors	Type F female, 75 Ω
Input level	-65 to -25 dBm
LNB voltage	Auto, off or 13/18V
LNB current	200 mA per input
22kHz to LNB	Auto, on or off
FEC	Auto

3 x MPEG Decoder – Video - audio

Video standard	MPEG2 MP@ML, MPEG4 h.264 AVC MP@L3
Audio standard	AAC HE or MPEG 1 layer II AC-3 (option)
Picture aspect ratio	Letterbox, Anamorphic
Teletext	VBI
Subtitling	Teletext or DVB subtitling

3 x Modulator

Modulation standard	PAL B/G, I, D/K, SECAM (DSB)
Audio	FM-mono, NICAM stereo and A2/A2* stereo
Output channels	Double side band from 160 – 862 MHz.
Output level	Typ. 80 dBμV, fixed 5 dB
Built-in aerial amplifier	Type F female, 75 Ω
RF output connector	

Decryption

Decryption Interface	2 x Common Interface (PMCIA 5VDC)
Decryption type	Single or Multidecryption CAM's supported
CI 1 slot	Decryption for output Ch1 and Ch2
CI 2 slot	Decryption for output Ch3

Miscellaneous

AC Power supply	230 VAC typ (94-264VAC)
AC power consumption	Typ. 18 W ex. LNB load
DC output power	12 VDC +/- 10%
DC power consumption	Typ. 15 W ex. LNB load
Ethernet port	Setup and update
Setup	Web based GUI
Dimension	301x215x53 mm (excl. connectors)
Weight	Approx. 900 g
Operating temperature	-20 to +45°C non condensing

MyM Web Control Interface



Overview Input Output Service Management CI System Options

Current Settings Software options

Current Settings

Tuner1 locked:	Yes
Tuner2 locked:	Yes
Firmware version:	2.0-RC3
Bootloader version:	--
Hardware revision:	1211
Serial number:	0420010583100032

Network

IP Address:	192.168.0.20
Netmask:	255.255.255.0
Gateway:	192.168.0.1

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Example of MyM Web GUI

8 Declaration of Conformity

The document for Declaration of Conformity is available for download from www.a2b.se.



Further information at www.a2b.se.

9 Abbreviations

DVB	Digital Video Broadcasting (Standardization body)
MPEG-2	Compression format for digital TV
MPEG-4	Compression format for digital TV (SD and HD)
DSB	Double Side Band (RF modulation occupying 2 channels)
NICAM	Digital sound format for analogue TV transmission
IP	Internet Protocol (defines how data is packetized for Internet broadcast)
DVB-S	Modulation format (QPSK) for satellite transmission of digital TV
DVB-S2	Modulation format (QPSK or 8PSK) for satellite transmission of digital TV
DHCP	Dynamic Host Configuration Protocol is a protocol used by networked devices (<i>clients</i>) to obtain the parameters necessary for operation in an Internet Protocol network. This protocol reduces system administration workload, allowing devices to be added to the network with little or no manual configuration.
Common Interface	Connector for a PCMCIA module used for decrypting encrypted TV programs. Modules should comply with the DVB CI standard
SD	Standard definition TV (576i in Europe)
SMS	Service Management System (system for handling smartcards).
SMATV	Satellite Master Antenna TV.
A2	Dual sound analogue stereo audio
LNB	Low Noise Block (outdoor unit for sat. Reception)
GUI	Graphical User Interface
QAM	Quadrature Amplitude Modulation (digital modulation method)
QPSK	Quadrature Phase Shift Keying (digital modulation method)
8 PSK	Eight Phase Shift Keying (digital modulation method)
FEC	Forward Error corection (digital error correction method for digital transmissions)
C/N	Carrier to Noise ratio (defines the difference in dB between digital signal and noise level)
AAC-HE	Digital sound compression standard
VBI	Vertical Blanking Interval. Part in video signal non-visible
CAM	Conditional Access Module (see above Common Interface)



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