ADPRO® iFT Series
by Xtralis

Hardware Installation Manual

ADPRO®
by ◆ xtralis

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Intellectual Property and Copyright

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This product must only be installed, configured and used strictly in accordance with the General Terms and Conditions, User Manual and product documents available from Xtralis. All proper health and safety precautions must be taken during the installation, commissioning, and maintenance of the product. The system should not be connected to a power source until all the components have been installed. Proper safety precautions must be taken during tests and maintenance of the products when these are still connected to the power source. Failure to do so or tampering with the electronics inside the products can result in an electric shock causing injury or death and may cause equipment damage. Xtralis is not responsible and cannot be held accountable for any liability that may arise due to improper use of the equipment and/or failure to take proper precautions. Only persons trained through an Xtralis accredited training course can install, test and maintain the system.

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Document Conventions

The following typographic conventions are used in this document.

Convention	Description
Bold	Used to denote: emphasis. Used for names of menus, menu options, toolbar buttons.
Italics	Used to denote: references to other parts of this document or other documents. Used for the result of an action.

The following icons are used in this document.

Icon	Description
	Note. This icon indicates information of special interest that will help the reader make full use of the product, optimise performance, etc. Failure to read the note will not result in physical harm to the reader, or damage to equipment or data.
	Caution! This icon indicates danger to equipment. The danger can be loss of data, physical damage to the equipment, or permanent corruption of configuration details.
	Warning! This icon indicates danger of physical harm to the reader. Not following instructions may lead to death or permanent injury.
	Warning! This icon indicates danger of electric shock. This may lead to death or permanent injury.
	Warning! This icon indicates that there is a danger of inhaling dangerous substances. This may lead to death or permanent injury.

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Environmental Information
The crossed-out wheeled bin means that within the European Union the product must be taken to separate collection at the product end of life. This applies to the device but also to any accessories marked with this symbol. Do not dispose of these products as unsorted municipal waste.   If you need more information on the collection, reuse, and recycling systems please contact your local waste administration. You can also contact us for more information on the environmental specifications of our products.

Contents

1   Technical Specifications

Operating System	ADPRO® XOa™ Security**Plus** Remotely Programmable Operating System, Linux based
Video Input	iFT: 1–32[1] IP cameras[2] iFT-E: 1–32 IP cameras[2]
Video Output	XGA – Multiple matrix type views Physical output: DVI-I or DP (DisplayPort), DVI-I-to-VGA adapter included
Video Compression	H.264
Video Resolution	Up to Full HD @25 fps – MPixel resolutions up to 10 MPixel[3]
Frames/second	Full HD @25/30 fps – MPixel: fps is camera dependent
Bandwidth Capacity (Video)	32 x 5 Mbps
Bandwidth Management	Configurable variable or constant bitrate / Configurable bandwidth limiter
Audio Input	Built-in audio input supported[2]
Audio Output	Standard 1 line level output. Optional: up to 1 per camera via audio switcher(s). Audio out on IP cameras[3] with ONVIF Profile S driver.
Command Inputs	8 inputs on the box (balanced) Via Ethernet I/O module with PoE: up to 128 (go – no go)
Relay Outputs	4 outputs on the box (SPDT) Via Ethernet I/O module with PoE: up to 128 (SPDT)
Web Server	XOa client – integrated web client application (ActiveX)
Ethernet	2 x 100/1000BASE-T, autodetection, full duplex, RJ45
Recording Type	Schedule / Detection / Event
IP Camera Integration	Brand specific, Generic, or ONVIF Profile S[3]
Management	• Web client interface (XOa client) • ADPRO VideoCentral Platinum • HeiTel EMS management software • M3000 Command and Control Center • third-party software (SDK available).
Power Supply	100–240 VAC, 50/60 Hz, 2.5–1.5 A
Operating Temperature	5–40 °C; Ethernet I/O module: 0–40 °C
Humidity	Indoor use only 20–93 % RH non-condensing Ethernet I/O module: ≤ 93 % RH non-condensing
Disk Capacity	iFT: max. 3 x 6 TB SATA hard disks. iFT-E: max. 4 x 6 TB SATA hard disks. RAID 1 support.
Warranty	2 years
Dimensions (W x H x D)	441 x 88 x 305 mm (17.36" x 3.46" x 12.00")
Analytics	iFT: up to 16 analytics channels[1] iFT-E: up to 32 analytics channels IntrusionTrace™, LoiterTrace™, SmokeTrace™, ClientTrace™
Mobile Apps	iTrace, iPIR, iCommission, iRespond

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[1] Using 32 IP channels/16 analytics channels on the iFT requires a new system license. See *Field Alert #7 – Upgrading to 32 Channels* (29477).
[2] The list of supported IP cameras is available on www.xtralissecurity.com (26742).
[3] Camera dependent. See the *Supported IP Camera List* (26742).

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2   About the iFT Series

> ⓘ **Note**
>
> You can find the latest versions of this document and any referenced document on the Xtralis Security Solutions Support site www.xtralissecurity.com (logon may be required). If a document number is indicated, you can use it to quickly find the document on the site.

2.1   Models

The ADPRO iFT Series is the next generation of Remotely Programmable Multi-service Gateways (RMG) from Xtralis, offering low total cost of ownership (TCO) for ADPRO multi-service features, quality, and reliability in an IP-only solution.

The ADPRO iFT Series currently consists of the following models:

- iFT: up to 32 IP channels and up to 16 analytics channels via trade-off
- iFT-E: up to 32 IP channels and 32 analytics channels.

On the iFT model, you trade in 1 video channel for 1 analytic channel. This means, for example, that if you need 1 analytic channel, you can use maximum 31 (= 32 – 1) video channels. If you need 2 analytic channels, you can use 30 video channels, and so on. A fully equipped iFT can use maximum 16 analytic channels with 16 (= 32 – 16) video channels.
For optimal performance, disable the monitor output when using more than 16 IP channels on an iFT.

> ⓘ **Note**
>
> The most recent iFT models come with a system license that supports 32 IP channels. The system license in older systems supports only 16 IP channels. You can upgrade your system license, free of charge, using Xchange. For instructions, see *Field Alert #7 – Upgrading to 32 Channels* (29477).

> ⓘ **Note**
>
> Wherever **ADPRO device** is mentioned in this document, it applies to all the devices above unless specifically mentioned otherwise.

Multi-site configuration is possible:

- Integration of up to 10,000 ADPRO devices
- Remote video and audio, live video, and consultation of recordings
- Compatible with Presidium, S3100, VCP, and M3000
- SDK for third-party integration.

2.2   Licenses

All ADPRO devices require licenses:

- System license
- IP video channel licenses
- (Optional) PIR interface license (PIR-HLI)
- (Optional) Analytic application licenses: ClientTrace, IntrusionTrace, LoiterTrace, SmokeTrace…

An ADPRO device running without system license will behave as a video system with a **FULL license for 5 days**. However, the system informs the user of the license error via the event message 0013 – [SYST] – SYSTEM LICENSE ERROR, and via a popup window at each connection with the XOa client.

After that period of 5 days, the ADPRO device enters a **locked-down state**, and refuses all connections for live streams and recordings. All active configured recordings continue on the ADPRO device. During this locked-down state, the XOa client shows only the **About** window (so that you can retrieve the necessary

information to order a new license if necessary) and the **Transfer** window (so that you can upload a license to the ADPRO device). You can also try to restore the system license using Xchange.

> **Note**
>
> The system license is locked on the ADPRO device's motherboard and is therefore system specific: the license must include the correct MAC address.

For more information on licenses, see the *XOa Client Software User Manual* (21796) and the *Xchange Tool User Manual* (27816).

2.3   Software

Xtralis regularly provides software updates for your ADPRO device, which you can easily download and install via the Xchange tool. For more information, see the *Xchange Tool User Manual* (27816).

> **Caution!**
>
> Xtralis issues upgrade information with every major software upgrade. Upgrade information may consist of system requirements, special upgrade instructions, etc. Before installing new software, make sure that you read and understand the upgrade information first. Always follow the instructions in the upgrade documentation. If in any doubt, do not install the new software. You can find upgrade instructions on the Xtralis Security Support site www.xtralissecurity.com (listed under Field Alerts). Also check the Release Notes (listed under Product Release) for information on solved bugs or known issues.

2.4   Parts Information

Please use the reference numbers in this document (for example #17434080) for ordering parts with Xtralis, or for identifying the correct required part. If a part is indicated by a reference number ending in an asterisk (for example #1729121*), this indicates that several variants exist for the part (for example reference numbers #17291210 and #17291211). These variants are interchangeable. Any variant is suitable for the task described.

3 Hard Disks

3.1 Required Hard Disk Capacity

As there are many configuration possibilities, Xtralis has a hard disk space calculator available. You can find this hard disk space calculator on the Xtralis Security Solutions Support site www.xtralissecurity.com (logon required). Search for keyword 'calculator'.

> ⓘ **Note**
>
> The calculator is an estimating tool only. Figures are purely indicative. The real requirements of the hard disk capacity depend on scene content.

The iFT Series are standard delivered without, or with 1 hard disk inside. You can install:

- iFT model:
  - maximum 2 hard disks in models without extra mounting holes in the rear
  - maximum 3 hard disks in models with two extra mounting holes in the rear. The labels on the suitable iFT devices indicate '3 HDD Ready'.

- iFT-E model:
  - Model numbers 61xxxxxx: maximum 2 hard disks.
  - Model numbers 63xxxxxx: maximum 4 hard disks.

3.2 Adding/Replacing a Hard Disk

If the system is running out of disk space, you can add a new hard disk without removing any of the hard disks in use.
If you receive error messages from your hard disk in the **Status** screen of the XOa client, you may need to replace the faulty hard disk.

The following hard disks have been approved for usage in ADPRO devices:

| Brand	Capacity			
	1 TB	2 TB	4 TB	6 TB
Western Digital				
Enterprise (6 Gbps)	WD1003FBYZ	WD2000FYYZ	WD4000FYYZ	
Seagate*				
SV drives	ST1000VX000 (order no. 19150240)	ST2000VX000 (order no. 19150250)		
Surveillance			ST4000VX000 (order no. 19150270)	ST6000VX00001 (order no. 19150280)

* Do not use GP (Green Power) drives.

> ℹ️ **Note**
>
> The Seagate 4 TB and 6 TB hard disks are only suitable for ADPRO devices running firmware version XOa 3.00.0010 or above.

3.3   Reusing Used Hard Disks

It is possible to mount a hard disk coming from another device into a new device. However, you must **format the used hard disk** to erase all data on the disk to prevent any conflicts or data damage. In addition, the system may enter the **hard disk lockdown mode**: recording is then not possible. The following message will appear:
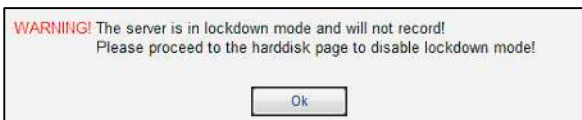
If you want to install a disk from another device, and you need to recover the recordings that are on the used disk, follow the instructions in the Tech Tip *Recovering Recordings from Used HDDs* (29160).

3.4   Retrieving Hard Disk Information

You can retrieve hard disk information and identify possibly faulty hard disks using the Telnet **ta,smart** command, or using the XOa client software.

3.4.1   Using the ta,smart Command

SMART stands for Self-Monitoring Analysis and Reporting Technology. Execute the **ta,smart** command in a Telnet session to obtain the SMART information for all hard disks in the ADPRO device.

The screen displays the following information:

Device	Device name of the hard disk (Linux).
Power status	The power status column displays one of the following statuses: • **ERROR**: there is a problem retrieving the power status of the drive • **ACTIVE/IDLE**: drive operates normally • **STANDBY**: drive is in low power mode (drive is in spin-down status) • **SLEEPING**: drive is in lowest power mode (drive is completely shut down).
Smart status	The smart status column displays one of the following statutes: • **ERROR**: drive is failing • **ALERT**: there is a problem retrieving SMART info from the drive, or the drive may be in the process of failing • **NORMAL**: no problems found with the drive.
Temperature	The temperature column displays from left to right: • the minimum temperature of the disk • the current temperature of the disk • the maximum temperature of the disk.

Force	• **ON**: SMART is checked on disk in STANDBY or SLEEPING mode.
	• **OFF**: SMART is only checked on disks in ACTIVE/IDLE mode.
Interval	Indicates the interval (in minutes) between SMART checks.
Temperature threshold	If the disk temperature is higher than the temperature threshold, the system activates system input 0102 – [SYST] – SMART HDD ALERT TEMP.

3.4.2 Using the XOa Client Software

To obtain to obtain the (SMART) information for all hard disks in the ADPRO device in the XOa client, choose **System > Maintenance > Harddisks**. The **Smart** column shows the operational status of the hard disks, the **Temp** column indicates the temperature.

3.5 Installing the First Hard Disk

Note

If you need to install 2 hard disks, follow the instructions in *Installing a Second Hard Disk* on page 15 instead.

Material required for the first hard disk:

Part	Amount+ Reference Number
Disk screws	4 x #17434080
SATA cable	1 x #16520877

Caution!

• Before installing hard disks, stop the device. Switch it off and unplug the power cord.

• Take all necessary precautions to prevent static discharges that may damage the device: use an anti-static wristband, an anti-static mat…

• The procedure below assumes that you are using a **new disk**, or, in case of a used disk, that you will **format the used disk** and erase all recordings on it. If you want to install a used hard disk while keeping the recordings on it, follow the instructions the Tech Tip *Recovering Recordings from Used HDDs* (29160).

To install the first hard disk, proceed as follows:

1. Stop the device, switch off the power supply, and then remove the top cover: unscrew two screws at the front, four at the top, and three at the back.

2.   Fix the hard disk to the bottom of the casing.

> ⚠ **Caution!**
>
> If you tilt the casing, rest it carefully on the sides, but not on the back. You may damage the connectors if you do.

Depending on the casing and on the disk capacity, the following options exist:

-   Casing with **6 screw holes** in the bottom and disk capacity **max. 4 TB**: use the first 4 holes with 4 disk screws (#17434080):
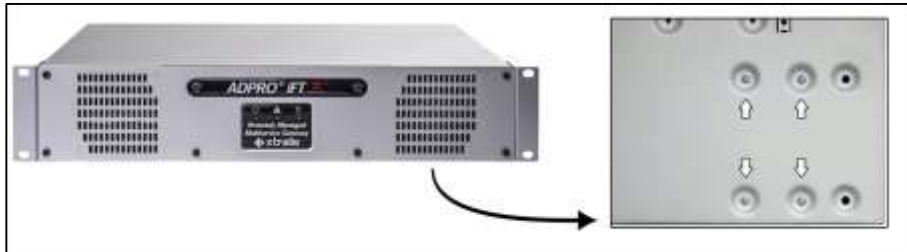
-   Casing with **6 screw holes** in the bottom and disk capacity **6 TB**: use the outer 4 holes with 4 disk screws (#17434080):
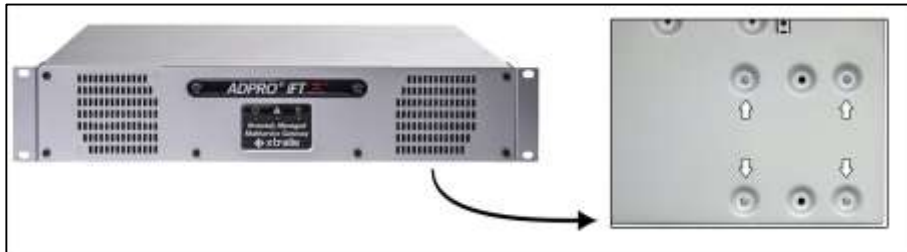
-   Old casing with **4 screw holes** in the bottom and disk capacity **max. 4 TB**: use 4 disk screws (#17434080):
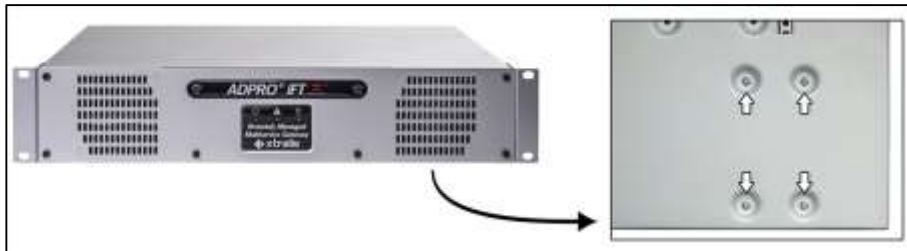
-   Old casing with **4 screw holes** in the bottom and disk capacity **6 TB**: use only 2 disk screws (#17434080):
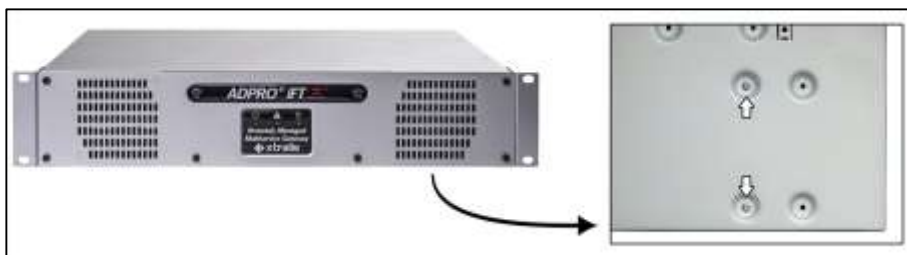
3.   Connect the hard disk to the power supply.

4.   Connect the hard disk to the SATA1 connector on the motherboard with the SATA cable (#16520877).
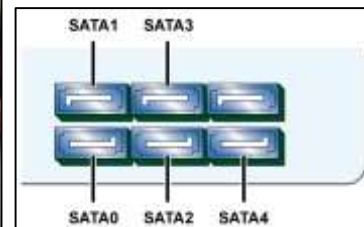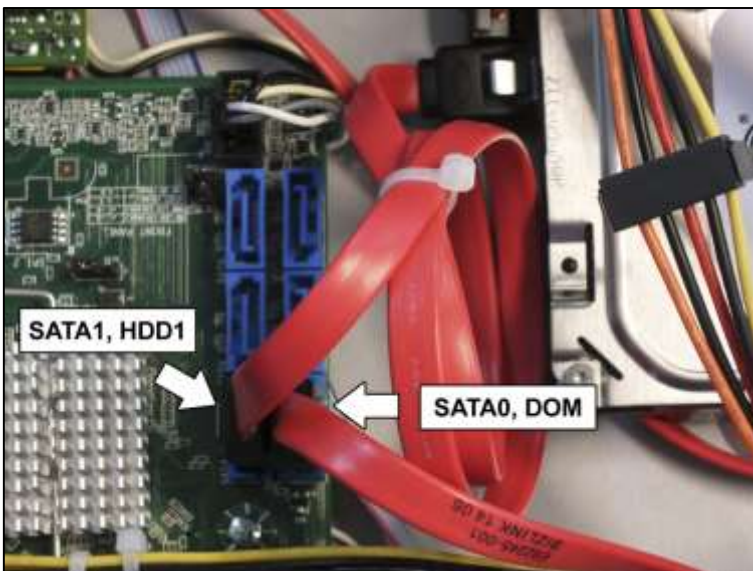
5.   If the SATA cables do not have a locking mechanism, use tie-wraps to secure the cables on the disk(s) in the following way:

6.   If there are unused cables left, bundle them with tie-wraps.
7.   Place the top cover back: fix it with 2 screws at the front, 4 at the top, and 3 at the back.
8.   Connect a monitor/screen and keyboard to the device. Switch on the power supply and wait for the boot window to appear.
9.   Select **XOa Installer** and press Enter.

> **ⓘ Note**
>
> The boot window only appears for a few seconds, then the device continues booting. To make sure that you do not miss it, press the arrow keys on the keyboard repeatedly while the device is booting. The device will then stop at the boot window, and this gives you time to select and open the **XOa Installer** menu.

10. Choose **Update current system > Manage recording disks**.
11. Select the newly installed hard disk in the list and press Enter.
12. Choose **Format and use selected disks** (using the tab key). The system formats the selected hard disk.
13. When formatting is finished, choose **Main Menu**, and then choose **Reboot**.

The device now reboots. After rebooting, the installed hard disk is ready for use.

3.6   Installing a Second Hard Disk

Material required for the second hard disk:

Part	Amount+ Reference Number
Disk screws	8 x #17434080
SATA cable	1 x #16520877
iFT(-E) HDD bracket	1 x #17011890
iFT(-E) HDD bracket, L-shaped*	1 x #17011895

(*) The L-shaped bracket is required if you install more than 2 disks. If you will use only 2 disks, you can use 2 'flat' HDD brackets (#17011890).

> **⚠ Caution!**
>
> - Before installing hard disks, switch off the device and unplug the power cord.
> - Take all necessary precautions to prevent static discharges that may damage the device: use an anti-static wristband, an anti-static mat…
> - The procedure below assumes that you are using a **new disk**, or, in case of a used disk, that you will **format the used disk** and erase all recordings on it. If you want to install a used hard disk while keeping the recordings, follow the instructions in the Tech Tip *Recovering Recordings from Used HDDs* (29160).

To install a second hard disk, proceed as follows:

1. Stop the device, switch off the power supply, and then remove the top cover: unscrew 2 screws at the front, 4 at the top, and 3 at the back.

2. If the first disk is already installed, you have to remove it first: unplug its power and data cables, and unscrew it from the bottom of the casing.

> **⚠ Caution!**
>
> If you tilt the casing, rest it carefully on the sides, but not on the back. You may damage the connectors if you do.

3.   Fix the first and second hard disk together using the 2 hard disk brackets (#17011890 and #17011895) and 8 screws (#17434080) as shown below. Make sure that the mounting screw holes on hard disk 1 are on the outside.
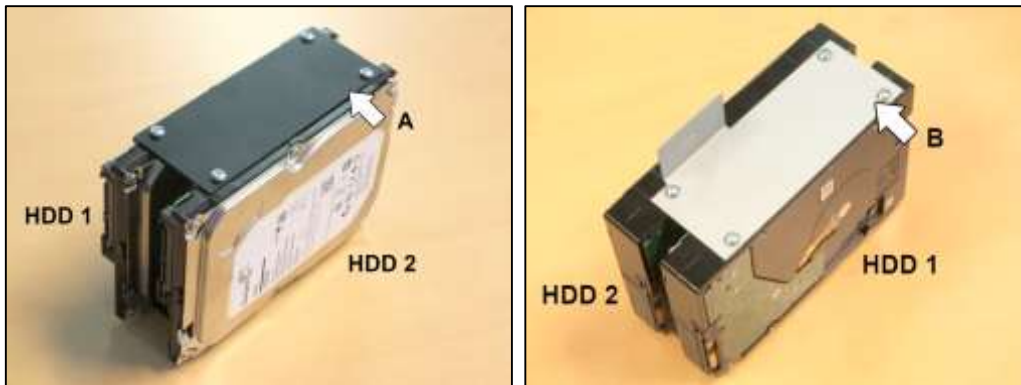
A: bracket #17011890; **B**: L-shaped bracket #17011895

4.   Fix hard disk 1 to the bottom of the casing. For instructions depending on the model and hard disk capacity, see *Installing the First Hard Disk*, step 2 on page 13.

5.   Connect hard disk 1 to the power supply, and to the SATA1 connector on the motherboard with the SATA cable (#16520877).

6.   Connect hard disk 2 to the power supply, and to the SATA2 connector on the motherboard with the SATA cable (#16520877).
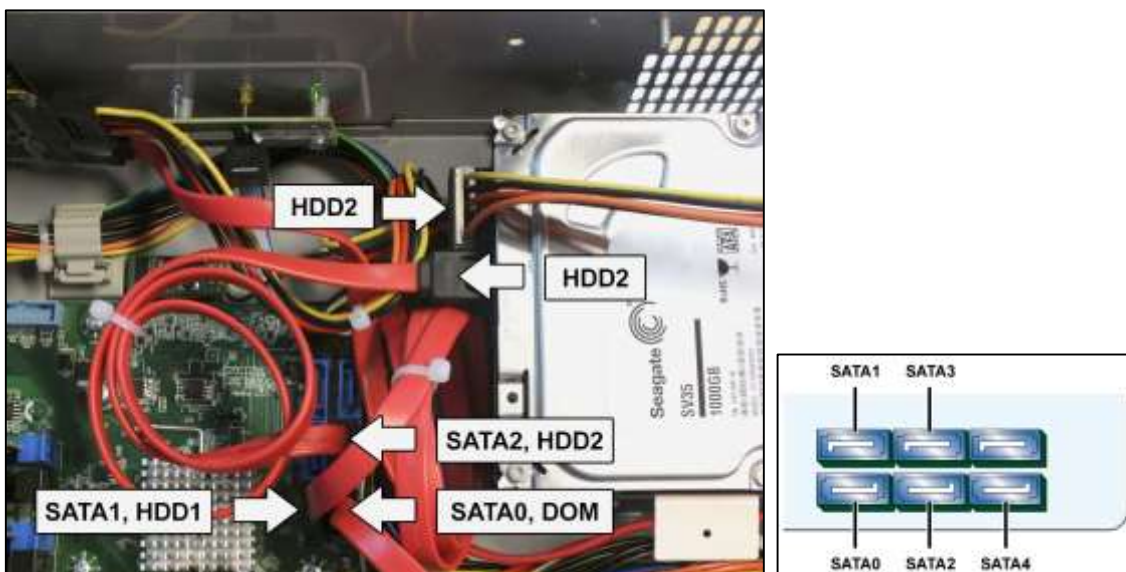
The table below lists the correct devices and SATA connectors:

Device	SATA Connector
DOM	SATA0
HDD1	SATA1
HDD2	SATA2

7.   If the SATA cables do not have a locking mechanism, use tie-wraps to secure the cables on the disk(s) in the following way:

8.   If there are unused cables left, bundle them with tie-wraps.

9.   Place the top cover back: fix it with 2 screws at the front, 4 at the top, and 3 at the back.

10.   Connect a monitor/screen and keyboard to the device. Switch on the power supply and wait for the boot window to appear.

11.   Select **XOa Installer** and press Enter.

> ℹ️ **Note**
>
> The boot window only appears for a few seconds, then the device continues booting. To make sure that you do not miss it, press the arrow keys on the keyboard repeatedly while the device is booting. The device will then stop at the boot window, and this gives you time to select and open the **XOa Installer** menu.

12.   Choose **Update current system > Manage recording disks**.

13.   Select the newly installed hard disk(s) in the list and press Enter.

14.   Choose **Format and use selected disks** (using the tab key). The system formats the selected hard disks.

15.   When formatting is finished, choose **Main Menu**, and then choose **Reboot**.

The device now reboots. After rebooting, the installed hard disks are ready for use.

3.7   Installing a Third Disk in an iFT Device

Material required for the third hard disk:

Part	Amount+ Reference Number
Disk screws	4 x #17434080
SATA cable	1 x #16520877
iFT(-E) HDD 3+4 bracket	1 x #17011920
Self-tapping screws 3.5 x 6.5 mm	3 x #17362010
Y cable SATA to 2 x SATA	1 x #16520795

> **Note**
>
> Installing a third disk is only possible in iFT devices with models that have two extra mounting holes in the rear. The labels on the suitable iFT devices indicate '3 HDD Ready'.
>
> For installing a third disk in an **iFT-E** device, see *Installing a Third and Fourth Disk in an iFT-E Device* on page 20 instead.

> **Caution!**
>
> - Before installing hard disks, switch off the device and unplug the power cord.
> - Take all necessary precautions to prevent static discharges that may damage the device: use an anti-static wristband, an anti-static mat…
> - The procedure below assumes that you are using a **new disk**, or, in case of a used disk, that you will **format the used disk** and erase all recordings on it. If you want to install a used hard disk while keeping the recordings, follow the instructions in the Tech Tip *Recovering Recordings from Used HDDs* (29160).

To install a third hard disk in an iFT device, proceed as follows:

1.   Stop the device, switch off the power supply, and then remove the top cover: unscrew 2 screws at the front, 4 at the top, and 3 at the back.

2.   Fix the third disk on the mounting bracket (#17011920) using 4 disk screws (#17434080). Make sure that the disk is on the correct side as shown in the image below.


3.   Before mounting the bracket with the disk in the ADPRO device, arrange the required SATA power and data cables so that you can access them when the bracket is in place.

4. Mount the bracket using 3 self-tapping screws (#17362010): use 2 screws to fix the bracket to the rear of the device, and use the third screw to fix the bracket to the L-shaped bracket of the already installed second disk.

5. Disconnect the power SATA cable from the second disk, and plug in the Y cable (#16520795). This provides power supply connections for all three disks.

6. Connect disk 2 to one end of the Y cable, and disk 3 to the other end.

7. Connect hard disk 3 to the SATA3 connector on the motherboard with the SATA cable (#16520877).
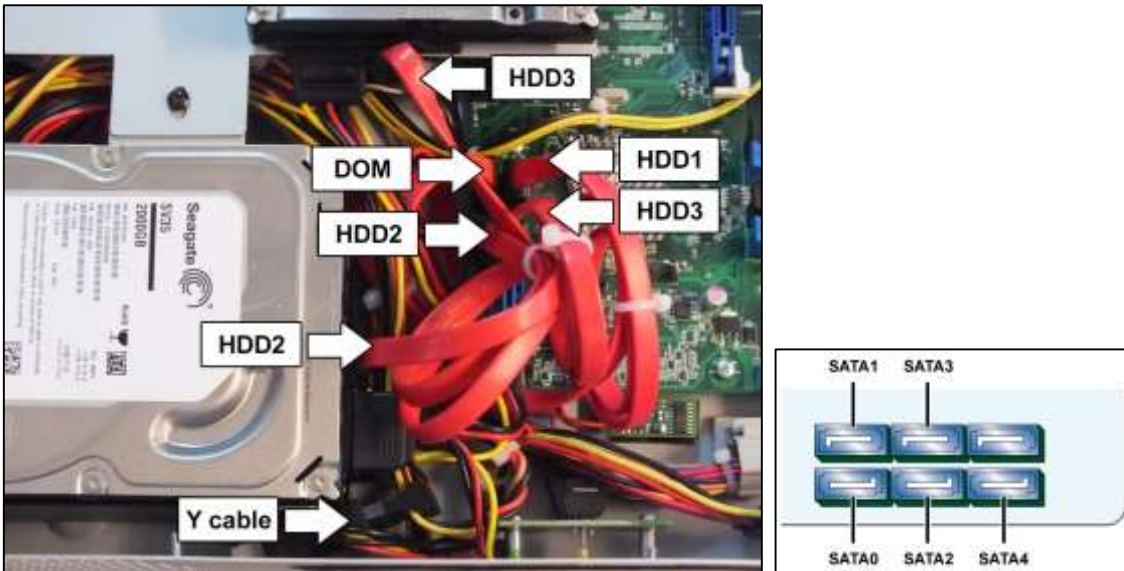
The table below lists the correct devices and SATA connectors:

Device	SATA Connector
DOM	SATA0
HDD1	SATA1
HDD2	SATA2
HDD3	SATA3

8. If the SATA cables do not have a locking mechanism, use tie-wraps to secure the cables on the disk(s) in the following way:

9.   If there are unused cables left, bundle them with tie-wraps.

10.   Place the top cover back: fix it with 2 screws at the front, 4 at the top, and 3 at the back.

11.   Connect a monitor/screen and keyboard to the device. Switch on the power supply and wait for the boot window to appear.

12.   Select **XOa Installer** and press Enter.

> ℹ️ **Note**
>
> The boot window only appears for a few seconds, then the device continues booting. To make sure that you do not miss it, press the arrow keys on the keyboard repeatedly while the device is booting. The device will then stop at the boot window, and this gives you time to select and open the **XOa Installer** menu.

13.   Choose **Update current system > Manage recording disks**.

14.   Select the newly installed hard disk(s) in the list and press Enter.

15.   Choose **Format and use selected disks** (using the tab key). The system formats the selected hard disks.

16.   When formatting is finished, choose **Main Menu**, and then choose **Reboot**.

The device now reboots. After rebooting, the installed hard disks are ready for use.

3.8   Installing a Third and Fourth Disk in an iFT-E Device

Material required for the third and fourth hard disk:

Part	Amount+ Reference Number
Disk screws	8 x #17434080 (4 per disk)
SATA cable	2 x #16520877 (1 per disk)
iFT(-E) HDD 3+4 bracket	1 x #17011920
Self-tapping screws 3.5 x 6.5 mm	3 x #17362010

> ⚠️ **Caution!**
>
> Installing a third and fourth disk is only possible in iFT-E devices with model numbers 63xxxxxx. The 61xxxxxx models are **not** suitable.

> ⚠️ **Caution!**
>
> • Before installing hard disks, switch off the device and unplug the power cord.
> • Take all necessary precautions to prevent static discharges that may damage the device: use an anti-static wristband, an anti-static mat…
> • The procedure below assumes that you are using a **new disk**, or, in case of a used disk, that you will **format the used disk** and erase all recordings on it. If you want to install a used hard disk while keeping the recordings, follow the instructions in the Tech Tip *Recovering Recordings from Used HDDs* (29160).

To install a third and fourth hard disk in an iFT-E device, proceed as follows:

1.   Stop the device, switch off the power supply, and then remove the top cover: unscrew 2 screws at the front, 4 at the top, and 3 at the back.

2.   Fix disks 3 and 4 on the mounting bracket (#17011920) using 8 disk screws (#17434080).


Disk 3   Disk 3 and 4

3.   Before mounting the bracket with the disk in the ADPRO device, arrange the required SATA power and data cables so that you can access them when the bracket is in place.

4.   Mount the bracket using 3 self-tapping screws (#17362010): use 2 screws to fix the bracket to the rear of the device, and use the third screw to fix the bracket to the L-shaped bracket of the already installed second disk.
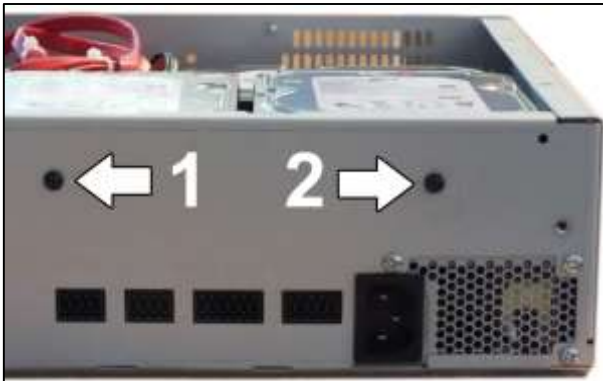
5. Connect hard disk 3 to the power supply, and to the SATA3 connector on the motherboard with the SATA cable (#16520877).
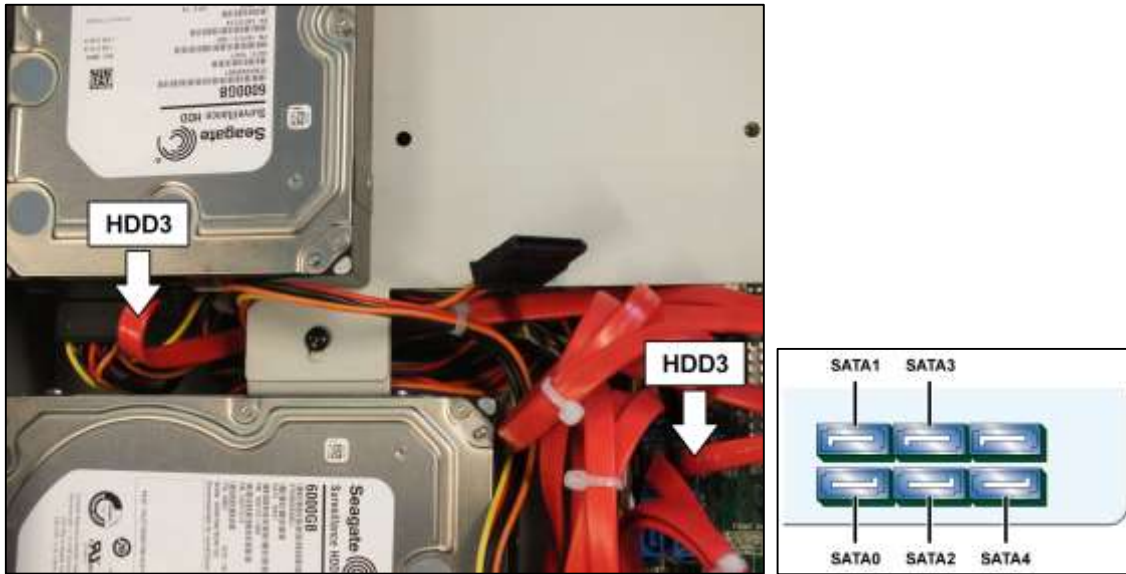
6. Connect hard disk 4 to the power supply, and to the SATA4 connector on the motherboard with the SATA cable (#16520877).
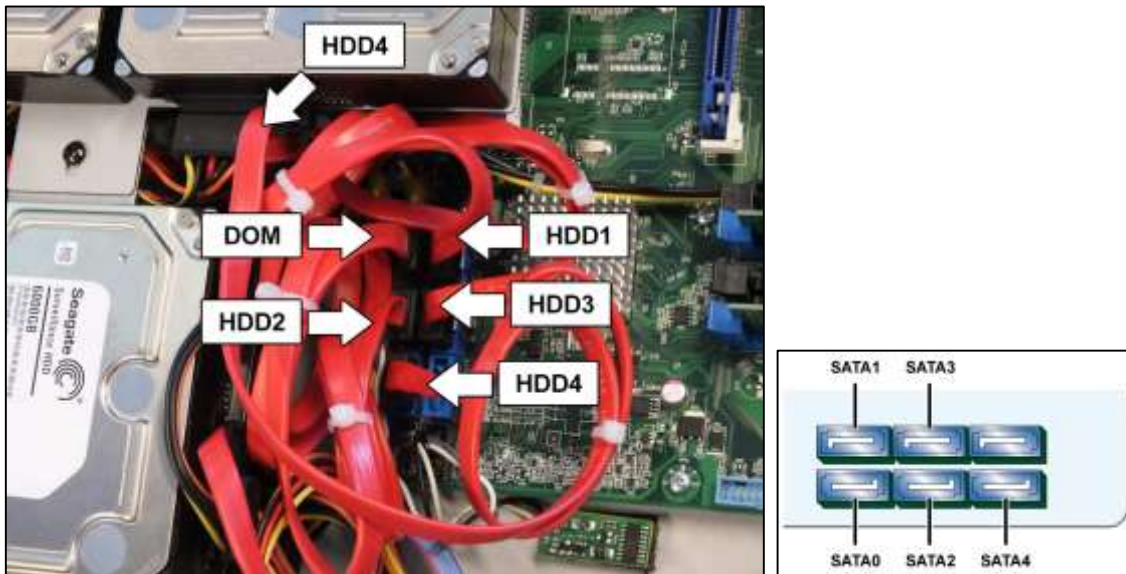
The table below lists the correct devices and SATA connectors:

Device	SATA Connector
DOM	SATA0
HDD1	SATA1
HDD2	SATA2
HDD3	SATA3
HDD4	SATA4

7. If the SATA cables do not have a locking mechanism, use tie-wraps to secure the cables on the disk(s) in the following way:

8. If there are unused cables left, bundle them with tie-wraps.

9. Place the top cover back: fix it with 2 screws at the front, 4 at the top, and 3 at the back.
10. Connect a monitor/screen and keyboard to the device. Switch on the power supply and wait for the boot window to appear.
11. Select **XOa Installer** and press Enter.

> ⓘ **Note**
>
> The boot window only appears for a few seconds, then the device continues booting. To make sure that you do not miss it, press the arrow keys on the keyboard repeatedly while the device is booting. The device will then stop at the boot window, and this gives you time to select and open the **XOa Installer** menu.

12. Choose **Update current system > Manage recording disks**.
13. Select the newly installed hard disk(s) in the list and press Enter.
14. Choose **Format and use selected disks** (using the tab key). The system formats the selected hard disks.
15. When formatting is finished, choose **Main Menu**, and then choose **Reboot**.

The device now reboots. After rebooting, the installed hard disks are ready for use.

3.9   RAID 1 Support

3.9.1 About RAID 1

RAID stands for Redundant Array of Independent Disks (originally Redundant Array of Inexpensive Disks). It is a storage technology that combines multiple disk drive components into a logical unit. Data is distributed across the drives in one of several ways called RAID levels, depending on the level of redundancy and performance required. RAID has become an umbrella term for computer data storage schemes that can divide and replicate data among multiple physical drives, while the operating system can still access the data as being on one single drive.

RAID 1 is about mirroring without parity or striping. Data is written identically to two drives, thereby producing a "mirrored set": the read request is serviced by either of the two drives containing the requested data, whichever one has the shortest search time plus rotational latency.
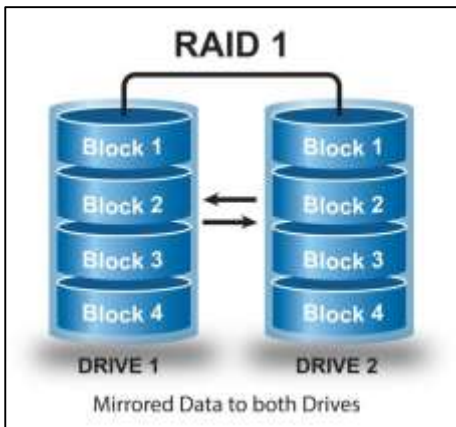
3.9.2 Activating RAID 1

RAID 1 requires minimum 2 hard disks. The size of the RAID 1 recording combination is the smaller of the 2 disks installed in your device. If, for example, you have a 2 TB disk and a 4 TB disk, the RAID 1 recording disk has a 2 TB capacity.

> *Caution!*
>
> When you apply RAID 1, the system formats the selected disks and erases the data on the disks. You will lose all the data on the disks. Back up your recordings first.

To activate RAID 1, proceed as follows:

1.   Stop the device, and switch off the power supply.
2.   Connect a monitor/screen and keyboard to the ADPRO device.
3.   Switch on the power supply and wait for the boot window to appear.
4.   Select **XOa Installer** and press Enter.

> *Note*
>
> The boot window only appears for a few seconds, then the device continues booting. To make sure that you do not miss it, press the arrow keys on the keyboard repeatedly while the device is booting. The device will then stop at the boot window, and this gives you time to select and open the **XOa Installer** menu.

5.   Choose **Update current system**.
6.   Choose **Manage recording disks**.
7.   Use the arrow keys to select the desired hard disk and press **Enter**. An X appears in front of the selected hard disk (between the brackets).
8.   Select also the second hard disk.

> *Note*
>
> Select only two disks, not three, or four. If you do, the system will configure the third and fourth disk as spare disks within the RAID 1 configuration. If you want to put disk 1 and 2 in RAID 1, and also disk 3 and 4, execute this step twice: once for disk 1 and 2, and once for disk 3 and 4.

9.   Choose **Make RAID 1 (mirror) from selected disks**.
10.   When mirroring has finished, choose **Main menu**, and then choose **Reboot**.

3.9.3   Retrieving RAID 1 Information

You can retrieve RAID 1 information using the Telnet **ta,hd,raid** command, or using the XOa client software.

To check if disks are in RAID 1 mode in the XOa client software, proceed as follows:

1.   Launch the XOa client software.
2.   Choose **System > Maintenance > Harddisks**. The following screen appears:

```
MountPoints
  #| Total size | Free      | Type  | Fsck  / Cnt  |  W/D | State
--+------------+----------+-------+--------------+------+--------------------------------
00| 458    GiB | 155   GiB | raid1 | NO    / 0    | W    |
```

```
Harddisks
  #|Disk      |ID              |Size     |Type  |Power         |Smart       |Temp |Parent
--+----------+----------------+---------+------+-------------+------------+-----+------
00|/dev/sda  |WD-WMAYP5470669 |465   GiB |raid1 |ACTIVE/IDLE  |NORMAL      |41   |00
01|/dev/sdc  |WD-WMAYP5506080 |465   GiB |raid1 |ACTIVE/IDLE  |NORMAL      |41   |00
```

The **MountPoints** pane displays the mount points (= writing disks). The **Type** column indicates whether the mount point is a normal disk or a RAID 1 disk.
The **Harddisks** pane displays the physical hard disk information. The **Type** column indicates whether the disk is a normal disk or a RAID 1 disk. The **Parent** column indicates the corresponding mount point.
The example above shows a system with two hard disks in RAID 1 configuration.

4   Front LED Indicators

There are 3 LEDs on the front of the device:

Green LED	⏻	Indicates that power is on. The green LED periodically blinks (goes out briefly). This is normal behaviour.
Yellow LED	⚠	Indicates a fault. If the yellow LED lights up, check the status of your device. For more information, see the *XOa Client Software User Manual* (21796).
Blue LED	🛢	Indicates storage media activity.

> ***Caution!***
>
> When the 3 LEDs are flashing simultaneously, the system is servicing the recording disks (upgrading, formatting…). In that case, do not turn off power.

5   Motherboard

5.1   Overview

The iFT Series operates with a MiTAC PH10LU motherboard.

5.2   BIOS Settings

Choose **Main > System Time** to set the system time.
Choose **Main > System Date** to set the system date.
Choose **Chipset > PCH-IO Configuration > Front Panel Audio** and select **Legacy Front Panel**.
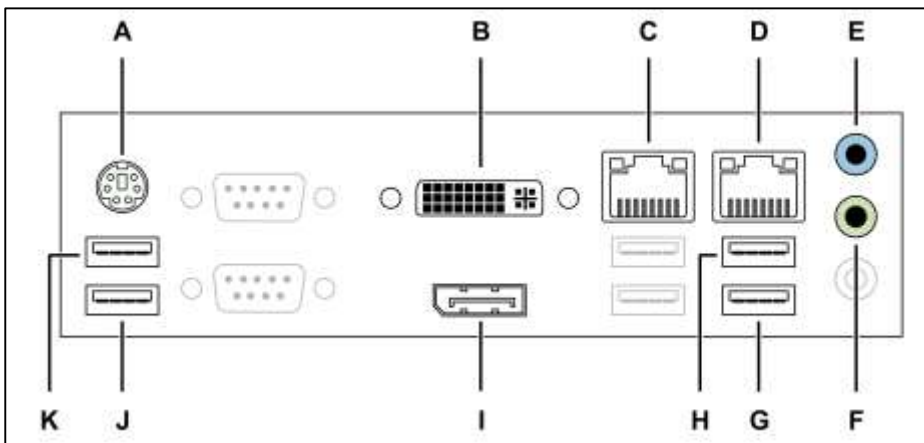Choose **Boot > CSM parameters > Launch PXE OPROM policy** and select **Legacy only**.
Choose **Save & Exit > Exit and Reset** and press Enter.

Leave all other parameters to the default settings.

5.3   Connectors

The image below indicates the available motherboard connectors at the rear of the device:

A	PS/2: keyboard or mouse	**G**	/dev/ttyU4 (USB)
B	DVI-I: monitor	**H**	/dev/ttyU3 (USB)
C	eth0: network for ADPRO device	**I**	DisplayPort: monitor
D	eth1: network for IP cameras	**J**	/dev/ttyU1 (USB): modem
E	Audio line in	**K**	/dev/ttyU2 (USB)
F	Audio line out		

> ⓘ **Note**
>
> The iFT Series does not support the USB 3 ports on the PH10LU motherboard.

5.4   Replacing the Motherboard

Do not replace the motherboard in the field. If the motherboard needs replacing, send the device back to your supplier.

5.5   Replacing the Motherboard Battery

It may be necessary to replace the motherboard battery after some time. For further instructions, see the technical documentation of the motherboard.

6   Connecting IP Cameras

An ADPRO device that uses IP cameras, requires separate IP network connections for:

- The network for communicating with the client PC, CMS, Net I/O modules, S3100 panels…
- The network for the IP cameras.

The MiTAC PH10LU motherboard has two LAN connectors on board, therefore you do not need a separate Ethernet card to connect to the IP camera network. Just connect the IP camera network to the eth1 port using an Ethernet cable.
You must set the Ethernet connection of your ADPRO device and the Ethernet connection of the camera network to different IP ranges. You must set up all IP cameras in the same IP range as the eth1 port. To set up the IP camera network, see the *XOa Client Software User Manual* (21796).
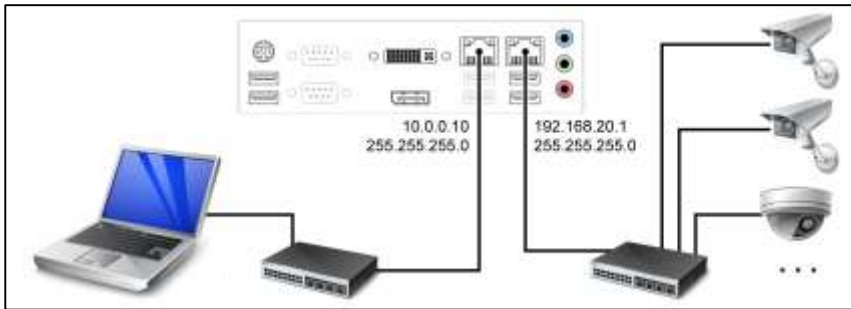
7   Main I/O Card

7.1   Features

The Main I/O (MIO) Next Generation card is an internal I/O card, pre-installed inside the iFT Series device. It is also called OTB (on-the-box) card.

The MIO card offers:

- 8 tamper-protected inputs and 4 relay outputs (rated 14 VDC @ 1 A)
- GND for every input
- driver for audio module/VM22 audio switcher; with improved audio quality
- driver for front LED indicators.

If you need to replace the MIO card, you can find detailed installation instructions in the document *Main I/O and Extension I/O Cards – Next Generation* (27820).

> ℹ️ ***Note***
>
> You can add 20 inputs and 8 outputs to your device using the XO USB Interface I/O Module (reference number 49840600 = module with one MIO + one EIO card). For details, see the module's *Technical Manual.*
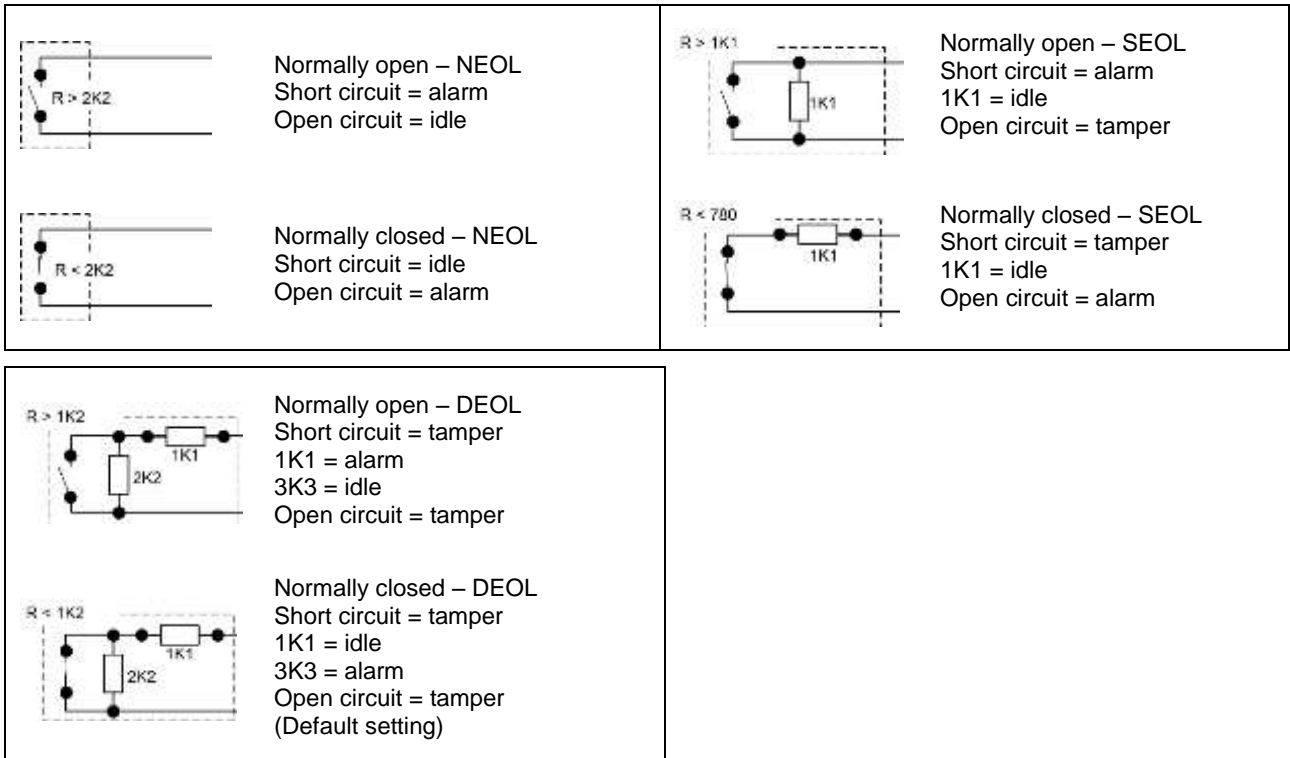
7.2   Overview of Inputs and Outputs
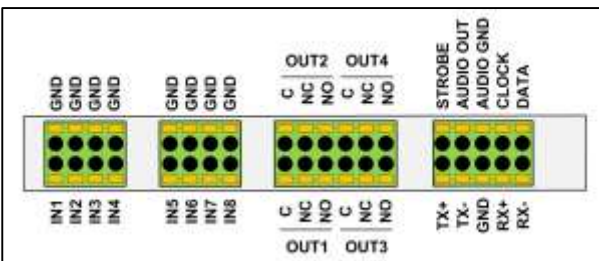
IN1–8 are voltage-free contact inputs.

OUT1–4 are voltage-free relay contact outputs.

7.3   Input Circuits

Below are the NEOL, SEOL, and DEOL configurations for the inputs. For correct operation, you also have to indicate the used input circuit configuration in the client software. For more information, see the *XOa Client Software User Manual* (21796).

Normally open – NEOL
Short circuit = alarm
Open circuit = idle

Normally open – SEOL
Short circuit = alarm
1K1 = idle
Open circuit = tamper

Normally closed – NEOL
Short circuit = idle
Open circuit = alarm

Normally closed – SEOL
Short circuit = tamper
1K1 = idle
Open circuit = alarm

Normally open – DEOL
Short circuit = tamper
1K1 = alarm
3K3 = idle
Open circuit = tamper

Normally closed – DEOL
Short circuit = tamper
1K1 = idle
3K3 = alarm
Open circuit = tamper
(Default setting)

7.4   Connecting Inputs/Outputs

Depending on the type, the MIO card can be equipped with Dinkle (standard) or Phoenix spring insertion connectors. For both types you need a 2 mm slotted screwdriver.

> ⚠ **Warning!**
>
> Although the pictures below show only the connector, it is strongly recommended to connect the wires with the connectors plugged into the card. Wiring a handheld connector may cause injuries.

Wiring to Dinkle and Phoenix connectors is identical, except that the position of tabs and holes is swapped. The picture in the procedure below shows a Phoenix connector. To connect inputs/outputs, proceed as follows:

3.   Push the slotted tab firmly inwards with the screwdriver.

4.   Insert the stripped wire (6–7 mm) into the corresponding round hole as deeply as possible.

5.   Release the tab and pull the wire to check if it is properly fitted.
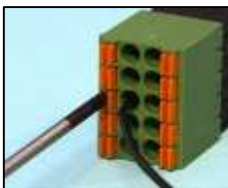
Wire gauge:
Solid and stranded: 16–24 AWG
(diam. 1.3–0.5 mm)

7.5   Cable Strain Relief

After connecting all the wires, use a tie-wrap to attach the cables to the ADPRO device's chassis. Run the tie-wrap through the slots at the back of the chassis as shown below. The tie-wrap serves as a strain relief and makes sure that the wiring stays in place when handling the ADPRO device.
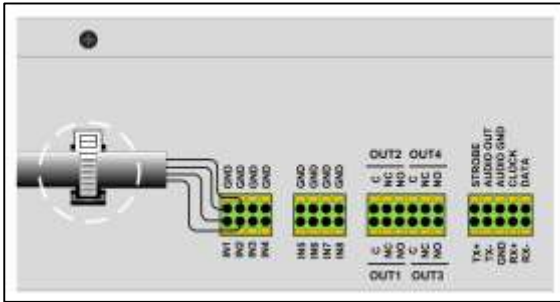
7.6   Configuring the MIO Card

To configure the inputs and outputs, or to update the MIO card firmware, see the *XOa Client Software User Manual* (21796).

8   Net I/O Modules

The Ethernet (Net) I/O modules provide extra inputs and outputs for your ADPRO device. You mount the modules on a DIN rail and connect them to the local network. To power the modules: use PoE, a PoE injector, or a local power adapter (12 VDC; 800 mA).

Each I/O module offers 4 inputs and 4 outputs, and LED indicators and a buzzer controlled by the ADPRO device. You can extend each base I/O module with 1 to 3 submodules, to obtain up to 16 inputs and outputs. As you can link your ADPRO device to up to 8 I/O modules (8 basic modules, each with up to 3 extension modules), you can obtain a total of 128 extra inputs and 128 extra outputs.

> **Caution!**
>
> **Before plugging or unplugging any extension units, switch off the power to the base unit.**
>
> Plugging or unplugging extension units with power on, may result in **permanent and irreparable damage** to the main and/or extension units.
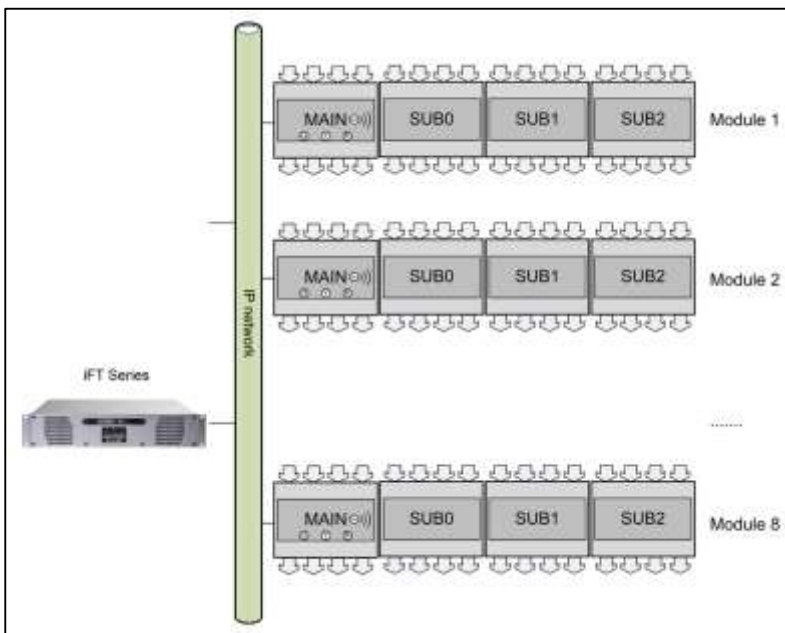
For detailed installation instructions, see the *ADPRO Ethernet I/O Datasheet* (20148).

Base unit

Extension unit

To program the IP address of an I/O module and to update its software, you use the NetFinder tool. You can find this tool on the CD/DVD delivered with the system, or you can download it from the Xtralis Support website www.xtralissecurity.com. For instructions, see the *ADPRO Ethernet I/O Datasheet* (20148).

To add and configure the Net I/O modules in the client software, see the *XOa Client Software User Manual* (21796).

9   Monitor

You can connect a monitor to the ADPRO device, and use it for:

- Live viewing in a matrix view (max. 16 cameras)
- Consulting basic system information in the welcome screen
- Accessing the **XOa Installer** menu for advanced hardware setup.

Connect the monitor to the DVI-I port or the DisplayPort. Use the included DVI-I-to-VGA adapter to connect a VGA monitor.

iFT / iFT-E
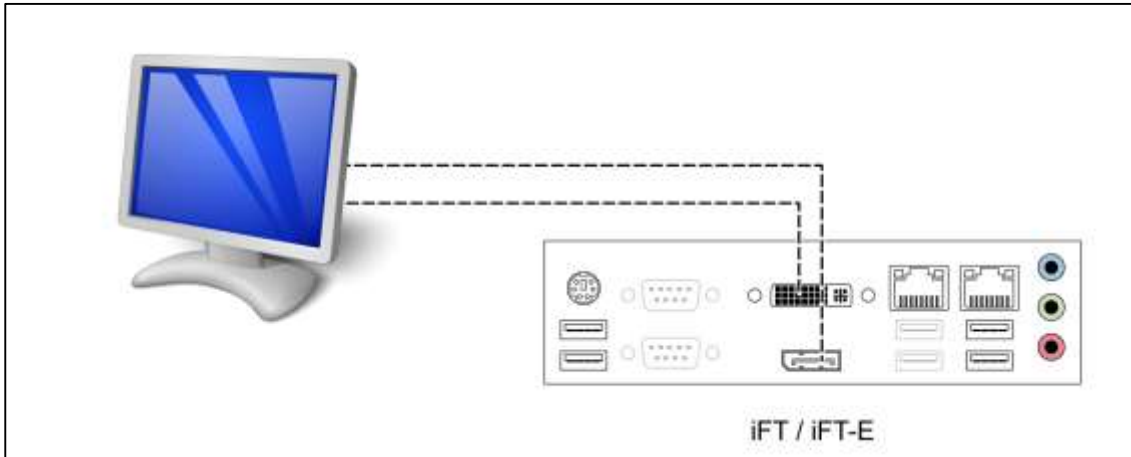
	Note
🛈	For a video monitor, you can use an external VGA-to-PAL/NTSC converter.

To set up live viewing on the monitor, see the *XOa Client Software User Manual* (21796).

	Note
🛈	• For iFT models only: for optimal performance, disable the monitor output (via the XOa client) if you are using more than 16 IP channels. • If you want to view more than 16 cameras on a monitor, or if you want to combine camera images from different ADPRO devices in one matrix view, then use the Xtralis Video Manager tool instead.

10   Modem

You can connect one modem to the XOa device, to the /dev/ttyU1 USB port. You can use either a PSTN/ISDN or a 3G modem.

- **PSTN or ISDN modem**: you connect a classic PSTN (ISDN) modem with serial port to the device by means of a USB-to-RS-232 converter. This USB to RS-232 converter needs a specific FTDI chip. The Stollman TA+USBA is the only ISDN modem with USB interface that you can use without a converter.

- **3G modem**: the XOa device supports only the Sierra Wireless Airlink Raven XE modem. Xtralis does not guarantee that any other 3G modem will work properly.

Connect the modem to USB input 1 (/dev/ttyU1).
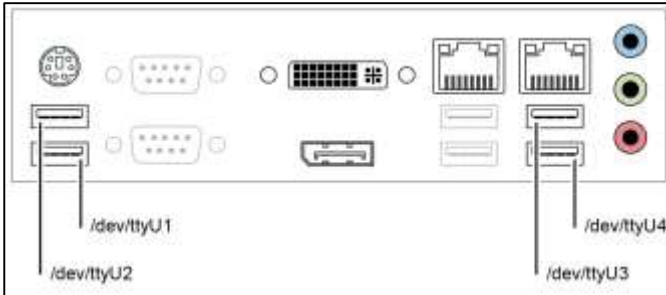
Restart the XOa client software before configuring the modem. For more information, see the *XOa Client Software User Manual* (21796).

11   Audio

You can use not only video images on the ADPRO device, but also audio – both in and out.

11.1 Audio IN

Audio input is available from the IP cameras. The iFT Series does not support analogue audio in.

For cameras with an audio input, you can choose to record audio and listen to audio in the live view. For an overview of IP cameras that support audio in, see the *Supported IP Camera List* (26742).

> **Note**
> - If the connection bandwidth is low, it is recommended to disable live audio streaming.
> - Audio IN is unbalanced audio.
> - Changing the audio settings requires a system restart.

In the XOa client, you have to enable the audio inputs for recording and listening in the live view. For more information, see the *XOa Client Software User Manual* (21796).

## 11.2 Audio OUT (Talkback)

11.2.1 Options

Talkback to the site works via the **Live Video** window in the client software. You select a camera, and then use the microphone (typically connected to the client PC) to talk to the site via the speaker that is associated with that camera.

If you need **only one speaker** on your site, you have the following options:

- Connect an amplified loudspeaker to the audio out plug of the motherboard (= green 3.5 mm jack).
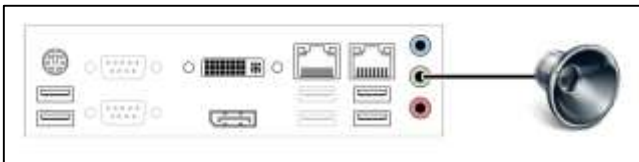
- Connect an amplified loudspeaker to the audio output on the MIO card.
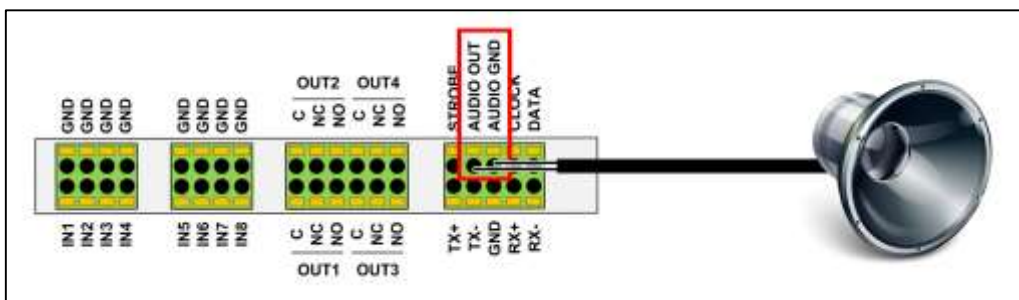

In this case, all cameras are automatically associated with that one speaker.

If you need **more than one speaker** (audio zoning) on your site, you have the following options:

- Use **VM22A** audio units to connect up to 20 loudspeakers. Install one or two VM22A units connected in cascade:
    - Unit 0 is controlled by the MIO card, and drives loudspeakers 1 to 10.
    - Unit 1 connects to unit 0 via the loop connector on the VM22A, and drives loudspeakers 11 to 20.
- Use **VM22E** audio units to connect up to 32 loudspeakers. Install up to 8 VM22E units in cascade:
    - Unit 0 drives speakers 1 to 4.
    - Unit 1 drives speakers 5 to 8…

- Use the IP audio outputs on your IP cameras with (built-in) speakers. This feature is available with firmware version XOa 3.02 and above; and for specific camera models only. For more information, see the *Supported IP Camera List* (26742).
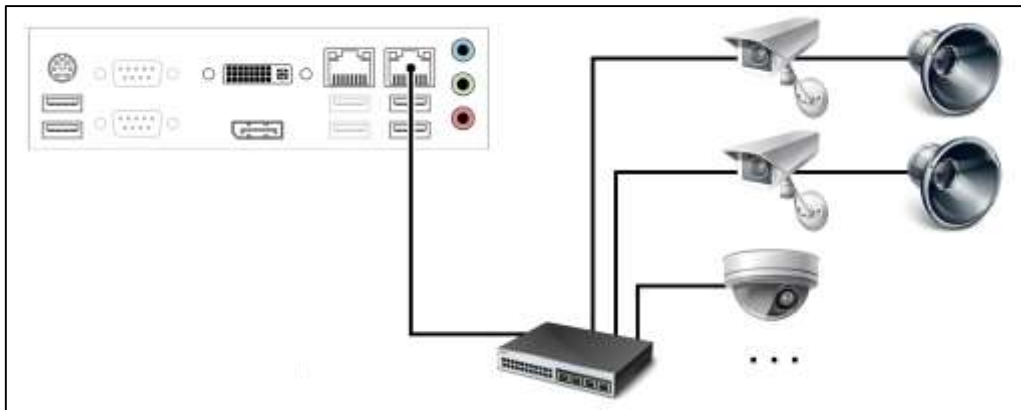

You use the XOa client software to assign the different speakers to the cameras. For each camera, you can choose:

- One output on a VM22 output switcher
- One or more outputs on IP cameras.

11.2.2 Setup for VM22A

You need a specific cable to connect the VM22A to the ADPRO device.
Connect the cable to the back of the device as illustrated below. Respect the colour code (yellow = STROBE; white = AUDIO OUT, shield = AUDIO GND, red = CLOCK, and green = DATA).
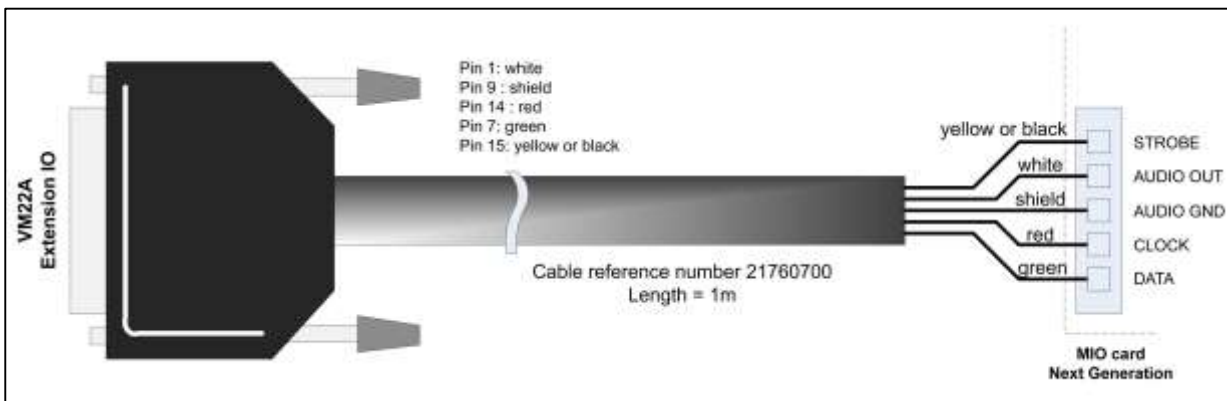
The diagram below shows a typical setup that allows talkback on the monitored site: it provides 20 audio outputs (loudspeakers) via two VM22A units in cascade. A headset connected to the client PC serves as the audio input (microphone).
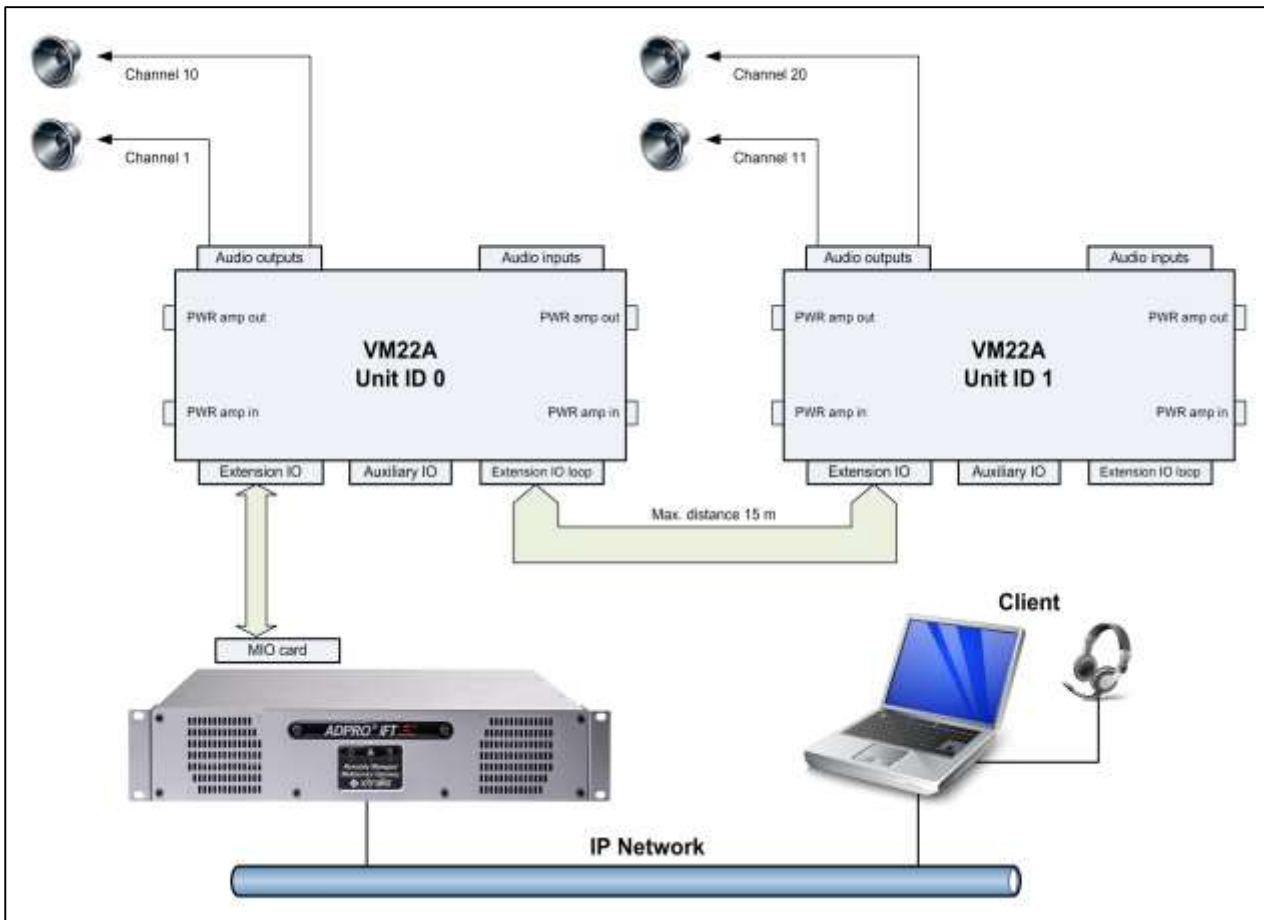
For more information, see the *VM22A Audio Switcher – Installation and User Manual*.

11.2.3 Setup for VM22E

For the hardware installation of the VM22E, see the connection scheme below.
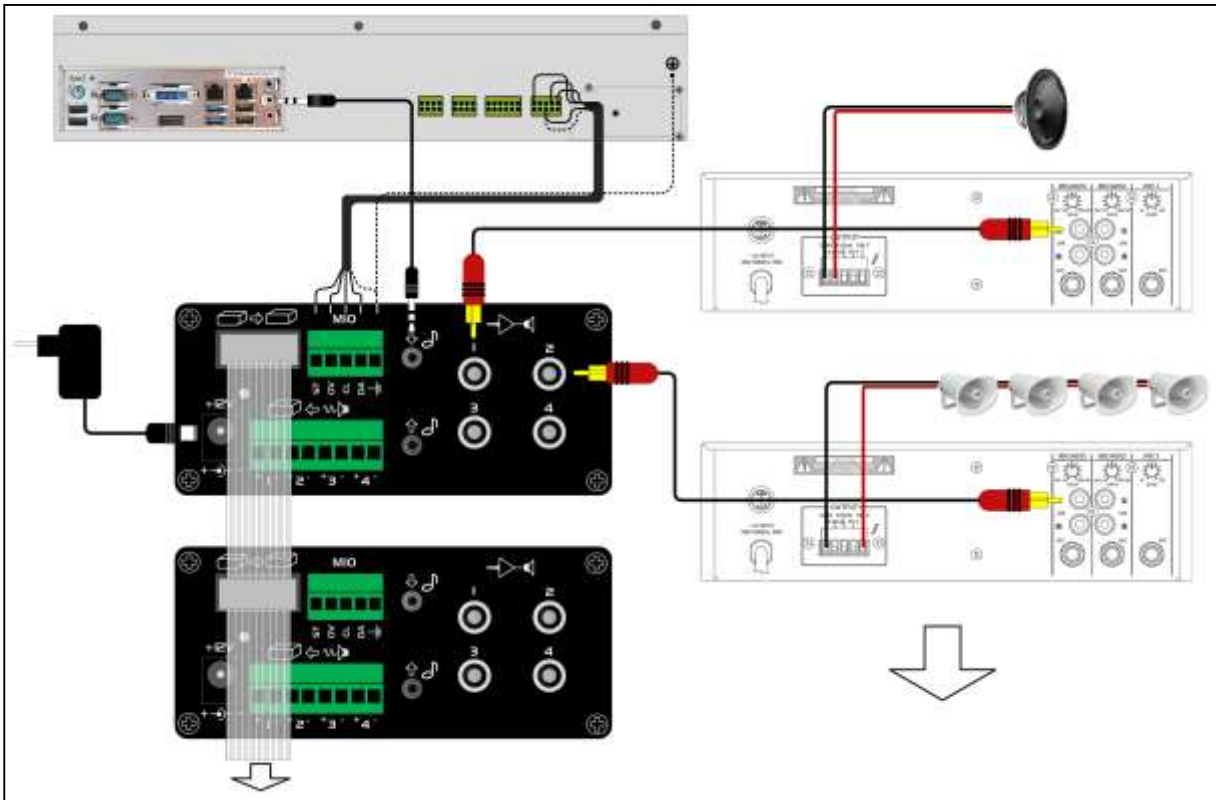
The table below lists the correct connections between the VM22E module and the ADPRO device's MIO card:

| VM22E terminal | MIO card Next Generation | |
	No.	Name
ST	30	STROBE
0V	33	GND
CL	36	CLOCK
DA	38	DATA
⏚	33	GND

For more information, see the *VM22E Technical Manual* (29541).

11.2.4 Troubleshooting Talkback

If talkback does not work, check the following:

- In the client software, check the access rights of the user: **Audio talk** must be allowed.
- Routers may block UDP packets. In the audio setup in the XOa client, specify TCP, or configure the router to allow UDP packets.
- Use the PC headphones plug instead of the PC microphone plug.
- Check the configuration of the microphone on your computer. For details, see below.

To configure the microphone on your computer, proceed as follows.

In Windows XP:

1. Click **Start**, and then click **Control Panel**.
2. Click **Sound, Speech, and Audio Devices**, and then click **Sounds and Audio Devices**.

3.   Click the **Voice** tab.

4.   In the **Voice recording** pane, check if the **Default device** is the one that you want to use with the ADPRO device. If not, select it in the list.

5.   In the **Voice recording** pane, click **Volume**.

6.   Adjust the vertical volume slide on the **Mic volume** or **Line volume**, depending on the device you are using. Make sure that the corresponding **Select** check box is selected.

7.   Click **OK** and close the **Control Panel**.

8.   Test with **Sound Recorder**.

In Windows Vista/Windows 7:

1.   Click **Start**, and then click **Control Panel**.

2.   Click **Sound**, and then click the **Recording** tab.

3.   If you have more than one sound device, check if the device you want to use with the ADPRO device is the default device. If not, right-click the desired device, and click **Set as Default Device**.
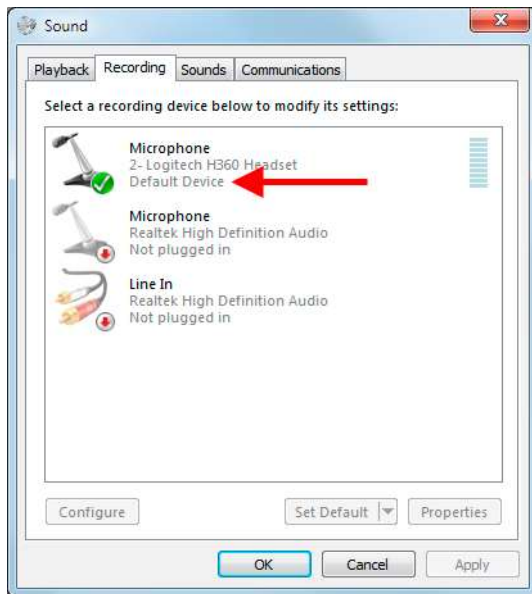
4.   To test if the microphone works, tap it with your finger a few times. The blue lines next to the default microphone light up in green, indicating the volume.
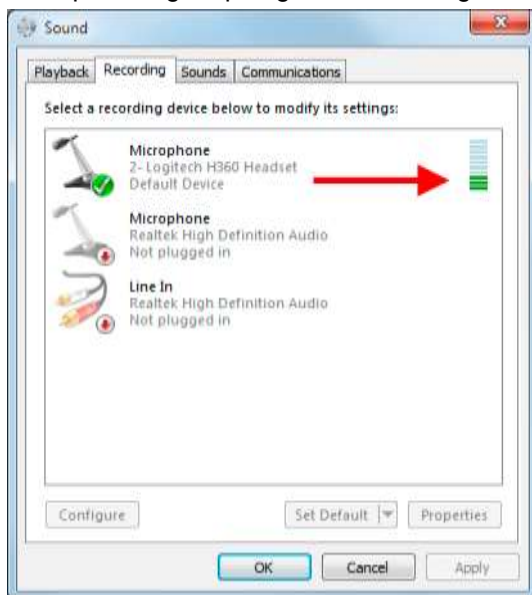
5.   Click **OK**, and close **Control Panel**.

12   Connecting PIR Detectors

12.1 Required PIR Firmware

For correct PIR alarm processing, a minimal PIR firmware version 2.00 is required. Previous firmware versions also work with RS-485 communication, but do not support all features (e.g. alarm management).

12.2 Connecting PIR Detectors

To connect PIR detectors to the ADPRO device, you have the following options:

Connection method	Max. no. of PIR detectors
RS-485 cable connected directly to the MIO card of the ADPRO device	32 on the RS-485 bus
Via a USB-to-RS-485 8-channel distribution unit, connected to a USB port on the ADPRO device	32 on the RS-485 bus; using 4 distribution units in cascade
Via a USB-to-serial-port RS-485 converter, connected to a USB port on the ADPRO device	32 on the RS-485 bus
Via the IFM-485-ST interface module, connected to a USB port on the ADPRO device	32 on the RS-485 bus
Via IP modules, connecting the PIR detectors via the local network to the ADPRO device (no RS-485 bus required)	34; with firmware version XOa 3.02.0001 or above

You can connect maximum 32 PIR detectors on an RS-485 bus. However, you can combine an RS-485 bus and IP modules to connect more PIR detectors to the ADPRO device.
The maximum number of PIR detectors on an ADPRO device is 34 (requires minimum firmware version XOa 3.02.0001).

You can connect a PIR detector to only one ADPRO device.

> **Note**
>
> You need a PIR-HLI application license to enable the PIR detectors. Use Xchange to install the license on the ADPRO device. For more information, see the *Xchange Tool User Manual* (27816).

12.3 PIR Address Range

Regardless of the connection method, PIR detector addresses must be in the following ranges:

- Firmware version XOa 3.02.0001 and above: 1–34. The ADPRO device will not discover PIR detectors with addresses above 34.
- Firmware versions below XOa 3.02.0001: 1–32. The ADPRO device will not discover PIR detectors with addresses above 32.

Furthermore, each PIR detector must have a unique address, regardless of the connection method (RS-485 or IP). For instructions on setting PIR detector addresses, see the *ADPRO PRO E PIR System Setup Manual* (26571).

12.4 Direct Connection to the MIO Card

Connect the PIR detector(s) to the ADPRO device by connecting the RS-485 cable of the PIR closest to the ADPRO device to the MIO card of the ADPRO device. You can connect up to 32 PIR detectors in cascade on the RS-485 bus.

On the internal MIO card, set the RS-485 jumper to the 2-wire position (A).
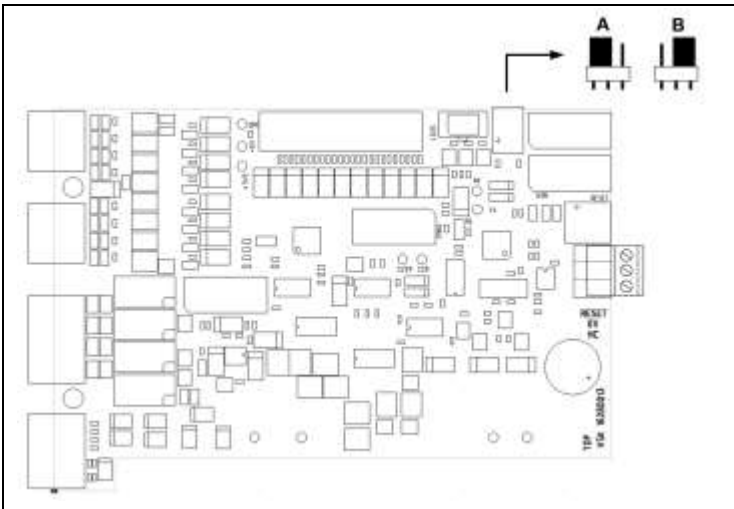
MIO card Next Generation	
A	RS-485 jumper: 2-wire setting (default setting – see *Note* below)
B	RS-485 jumper: 4-wire setting

Note

On the most recent systems (production from end of April 2015), the default setting of the RS-485 PTZ jumper is 2-wire. On older systems, the 4-wire setting was default. If you experience any problems when connecting devices to the MIO card, check the RS-485 PTZ jumper setting. Change it if necessary.

Connect the cables as shown below:
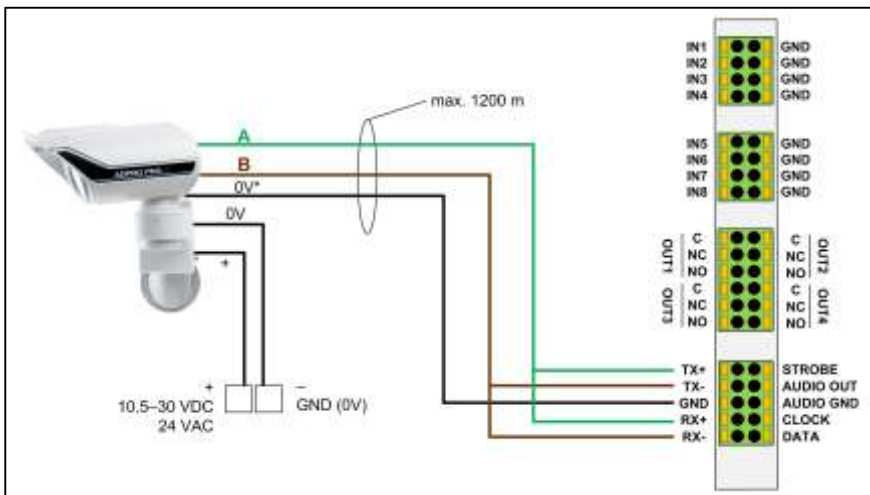
(*) Some PIR models have separate 0V terminals for data and power; on other models there is only one common 0V terminal.

Make sure to bridge the following connections:

• TX+ with RX+

• TX– with RX–

The PIR detectors are powered locally by a power adapter.
You can place locally powered PIR detectors at the maximum distance of 1200 m with RS-485 cables. Make sure that there is no difference in earth potential between the ADPRO device and the PIR.

## 12.5 Connection via the USB-to-RS-485 8-Channel Distribution Unit

The USB-to-RS-485 distribution unit provides 8 channels (1 PIR detector per channel) to easily connect and configure the PIR detectors to the ADPRO device.

For more information, see datasheet *USB-RS485 distribution unit* (19532060).

You can connect up to 8 PIR detectors through star wiring to the USB-to-RS-485 distribution unit. Only the 485 bidirectional communication of the PIR detectors is used, not the mechanical PIR tampers. It is possible to connect 4 distribution units in cascade, amounting up to 32 PIR detectors. In that case, you connect only one of the 4 distribution units directly to the ADPRO device, but the cables between the other units shall not exceed 1 metre.

The distribution unit contains a USB connection port for communication with the ADPRO device. Connect it to the /dev/ttyU2 USB port on the ADPRO device. Do not use any other ports. Keep the USB cable between distribution unit and ADPRO device as short as possible (max. 1 metre).
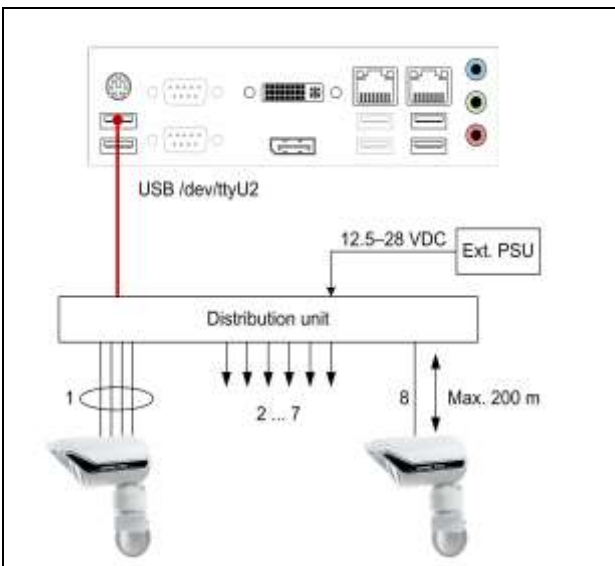Restart the XOa client after connecting the PIR detectors to the USB port.
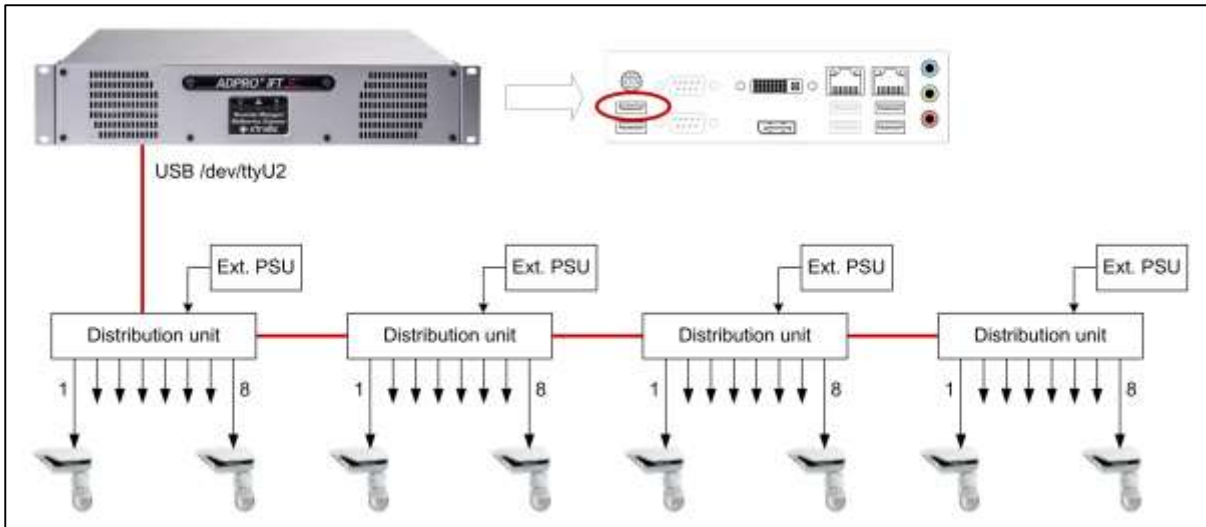
Max. 32 PIR detectors with 4 distribution units in cascade.
Each PIR detector needs a unique address. For the appropriate address ranges, see *PIR Address Range* on page 41.

A detailed view of a connected distribution unit:

Four wires connect the PIR detector to the distribution unit (power supply and communication).

The maximum distance between distribution unit and PIR detector is 200 m. If the distance is longer than 200 m, then the PIR detector needs a separate local power supply.

12.6 Connection via the USB-to-Serial-Port RS-485 Converter

Connect the PIR detector to the converter and plug the USB cable of the converter in the /dev/ttyU2 USB port of the ADPRO device.
Restart the XOa client software after connecting the PIR detectors to the USB port.
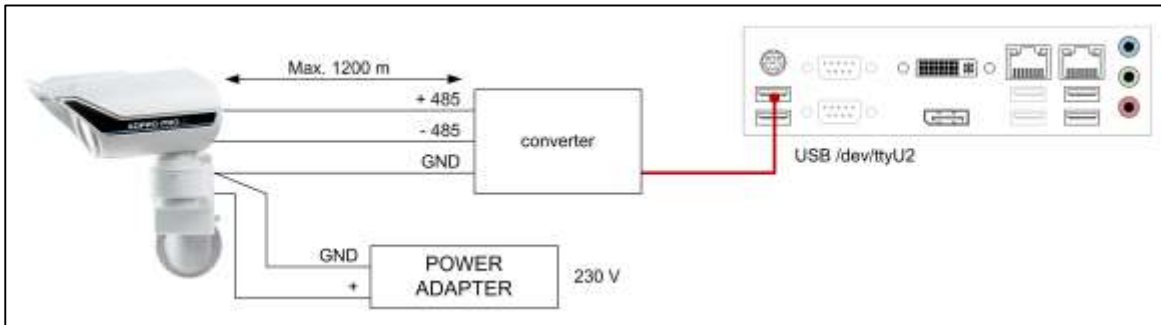
You can place locally powered PIR detectors at a maximum distance of 1200 m with RS-485 cables. Make sure that there is no difference in earth potential between the ADPRO device and the PIR detectors.

You need to order the USB to serial port RS-485 converter separately (reference number 20415490).

12.7 Connection via the IFM-485-ST Interface Module

The IFM-485-ST is an interface module which allows to conveniently connect the RS-485 bus of the PIR detector to the /dev/ttyU2 USB port of your ADPRO device.

For detailed installation instructions, see the *ADPRO IFM-485-ST Legal Disclaimer & Intended Use of Product* (27178), and the *ADPRO PRO E PIR System Setup Manual* (26571).

12.8 Connection via IP Modules (PRO E-IPM)

12.8.1 Summary

IP modules allow you to connect PIR detectors via the local network, instead of via an RS-485 bus. The modules convert the signals from network to RS-485. They are powered via PoE.

You need to set up the IP modules so that they can communicate with the ADPRO device: assign an IP address, and specify the correct communication settings. For this, you will use the Lantronix DeviceInstaller program. Xtralis recommends to use IP addresses in the same range as the local network of the ADPRO device (not in the range of the IP camera network).

After the configuration, you can connect the IP modules to the PIR detectors, and finally add the IP modules to the XOa client.

12.8.2 Setting up the IP Modules

The IP modules only work with the XOa client software if they have a static IP address and use the UDP communication protocol. Furthermore, you must set up the serial ports of the IP modules.

To set up the IP modules, proceed as follows:

1. Connect the IP modules to the network, and make sure that your PC is in the same network.
2. Download and install the Lantronix DeviceInstaller program (available from www.lantronix.com/products/deviceinstaller).
3. Launch DeviceInstaller. It automatically starts searching for the IP modules (xPico devices) on the network.
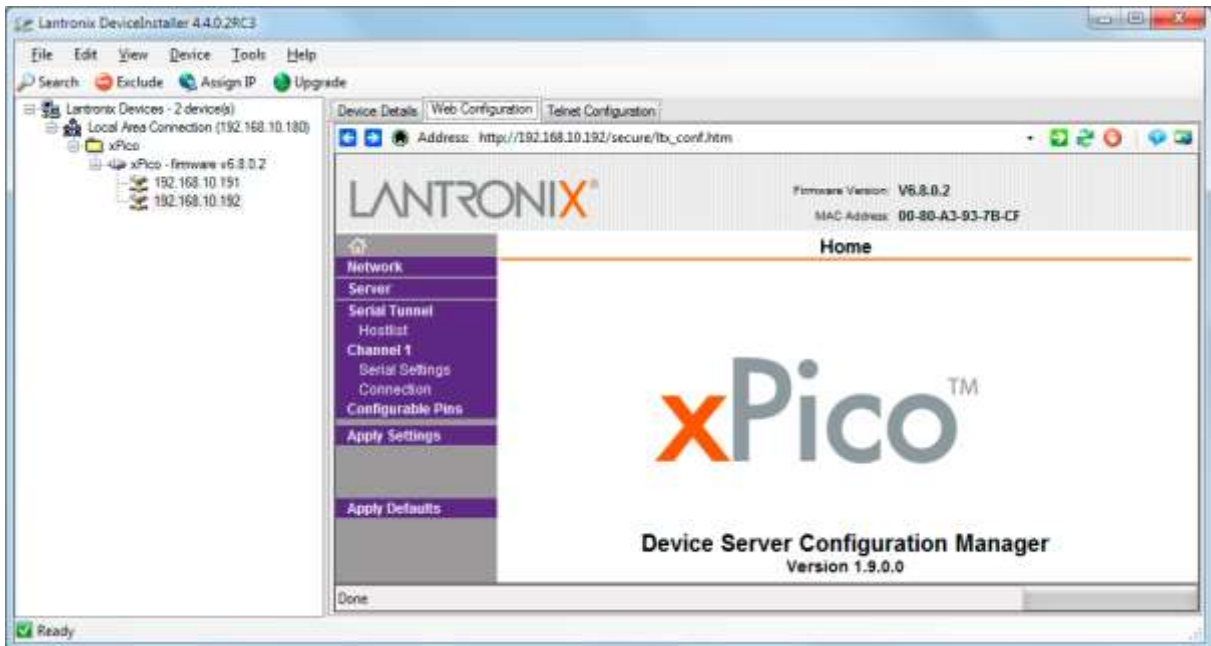   If the search does not start automatically, click **Search**.
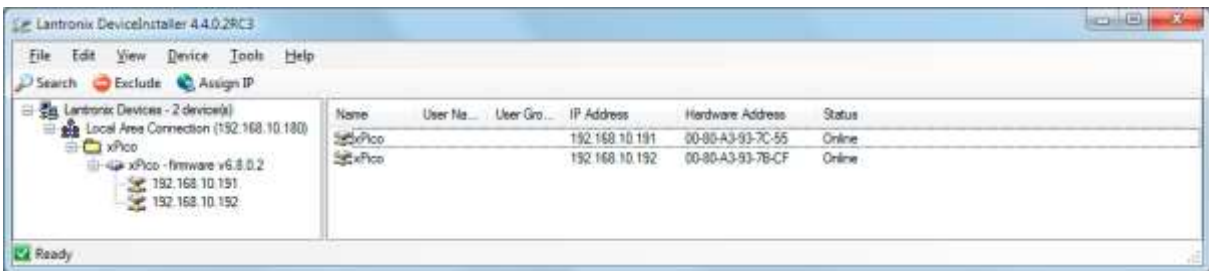
4. To configure a module, double-click it in the list.
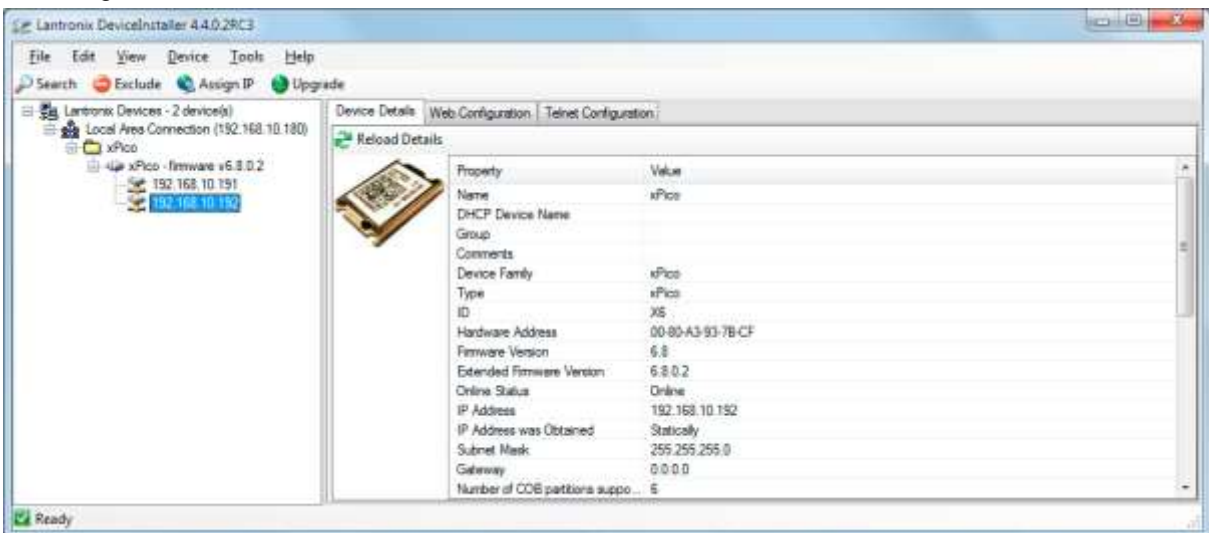
5. Click the **Web Configuration** tab, and then click the ➡ button to connect to the module.

6.   Leave the username and password blank; just click **OK** to continue.
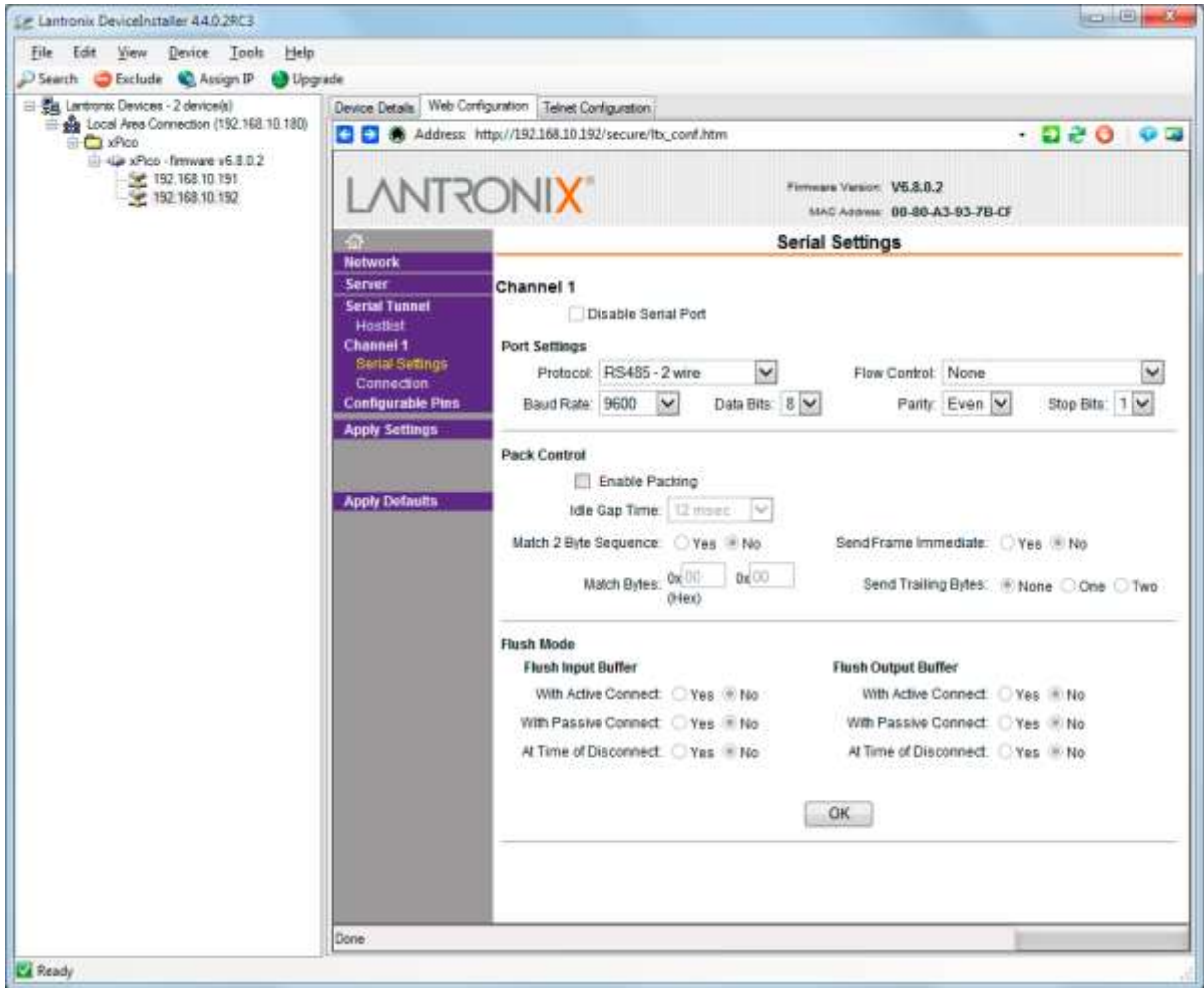

Next, you will make sure that the module uses a static IP address.

7.   Click **Network**, and provide the correct network settings. The example screen above shows the settings for an IP module with IP address 192.168.10.192. Xtralis recommends to use IP addresses in the same range as the local network of the ADPRO device (not in the range of the IP camera network).
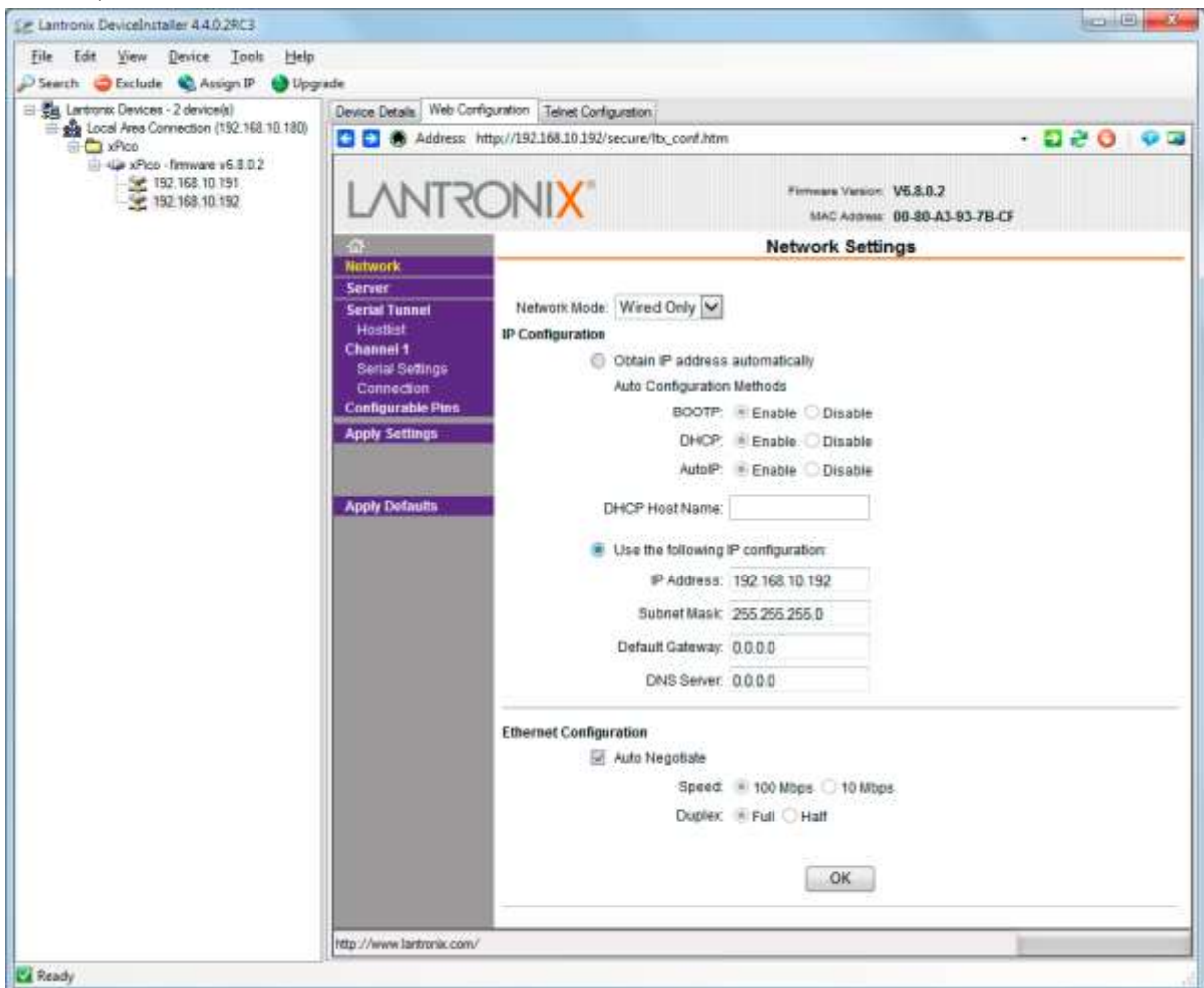
8.   Click **OK** to save the settings.
        Next, you will set up the serial port communication.

9. Click **Serial Settings**, and set the parameters as shown in the screen below.
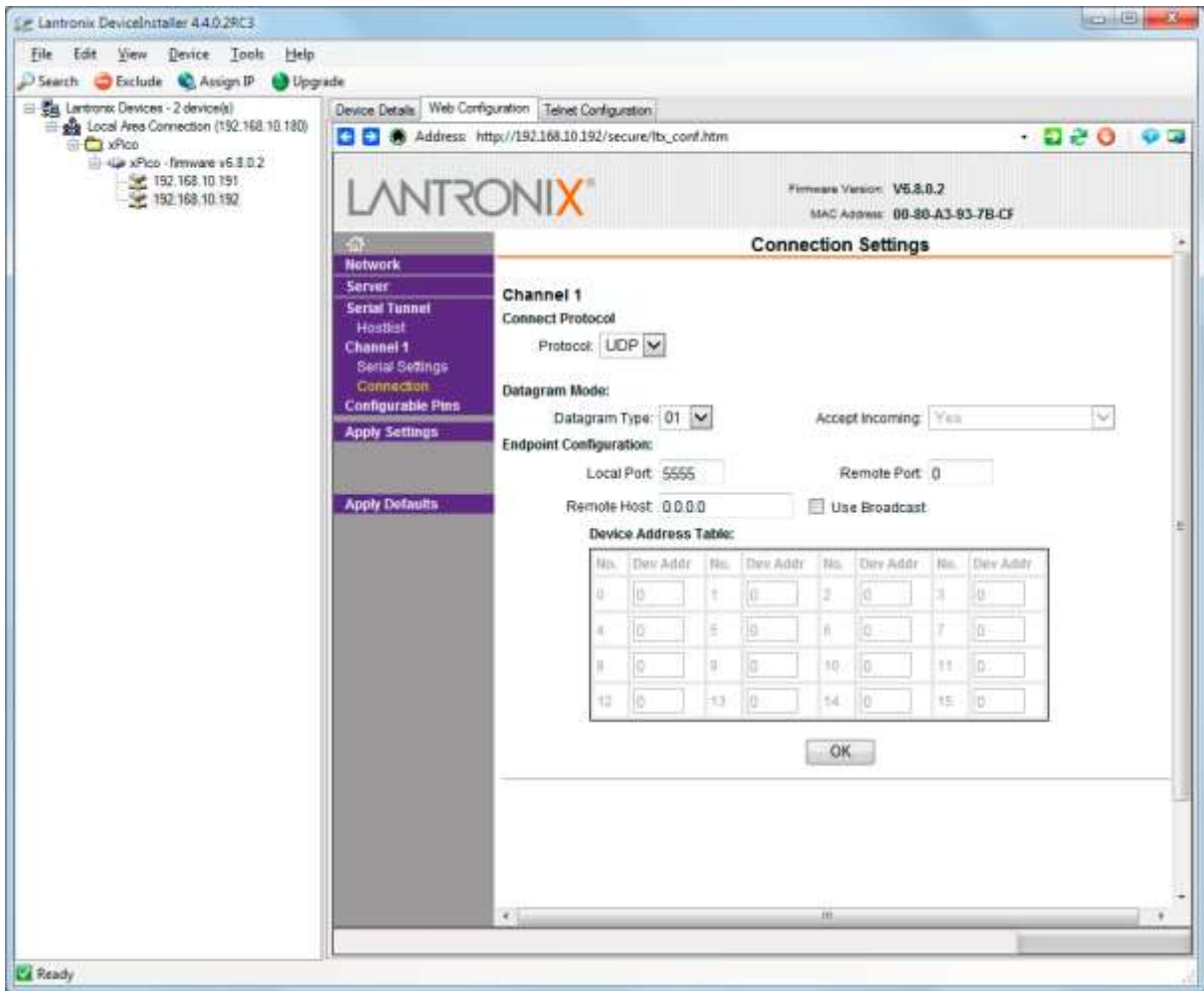

10. Make sure that the **Port Settings** are as follows:

Item	Setting
Protocol	RS485 - 2 wire
Flow control	None
Baud rate	9600
Data Bits	8
Parity	Event
Stop Bits	1

11. Click **OK** to save the settings.
    Next, you will set up the module to use UDP communication.

12. Click **Connection**, and set the parameters as shown in the screen below:

13. Make sure to set the following parameters correctly:

Item	Setting
Protocol	UDP
Datagram Type	01
Local Port	5555

14. Click **OK** to save the settings.
    Next, you will apply all the settings to the module.

15.   Click **Apply Settings**.

The module will reboot, and will then become available with the new IP settings. You can change the IP address in the address bar, or you can use the search function as before.

16.   Repeat steps 4 to 15 for other IP modules.

Now you can connect the IP modules to the PIR detectors.

12.8.3 Connecting the IP Modules to the PIR Detectors

For details on connecting the IP modules to the PIR detectors, see the document *ADPRO PRO E-IPM Legal Disclaimer & Intended Use of Product* (27556).

Take into account that the wire colours may be different:

A	Blue	Red
B	Black	Orange
+	Brown	Yellow
GND	Red	Green

After connecting the IP Modules to the PIR detectors, you can add the IP modules in the XOa client. For details, see the *XOa Client Software User Manual* (21796).

13   Power Consumption

Estimated power consumption depends on the installed components and on the system load:

Motherboard	12 W
Processor	65 W max.
Seagate SV35 hard disk	10 W
MIO card	1 W

Example for a 2-disk device (with maximum values):

Motherboard	13 W
Processor	65 W (PH10LU with Core i7/4770-S microprocessor)
2 Seagate SV35 hard disks	20 W
MIO card	1 W
TOTAL	
on secondary circuit:	100 W
on primary circuit: (total power consumption divided by 0.78 – this is the efficiency of the power supply)	128 W (0.56 A / 230 VAC)

Note

Measurement on an iFT-E device (with PH10LU motherboard and i7 microprocessor) produced the following results: 0.2 A at 230 VAC → 46 W (idle state).

(*) configuration = iFT-E with 2 hard disks (4 TB per disk).

14   Retrieving the IP Address

The XOa client displays the ADPRO device's IP address in the title bar. However, if you cannot connect to the ADPRO device, you can find the IP address as follows:

1.   Connect a monitor/screen and a keyboard to the ADPRO device.
2.   If the monitor displays the video matrix, press Ctrl+Alt+F1. The welcome screen appears:

```
ADPRO XOa 03.00.0010
Ip     : 10.0.0.10
Subnet : 255.255.255.0
Gateway: 10.0.0.1

Port [HTTP]: 80
Port [CTRL]: 2000
Port [RTSP]: 554
```

The welcome screen displays the following information:
-      ADPRO device (server) software version
-      IP address, subnet mask, and gateway
-      HTTP, control, and RTSP port numbers.
3.   To return to the video matrix view, press Ctrl+Alt+F7.

15   Diagnostics

15.1   Log Files and Reports

In case of major troubles with the ADPRO device, the system allows to generate a number of log files and reports. In some cases, the Xtralis Support Division may ask you to activate and capture some log files and reports that can be helpful to resolve technical issues.

15.2   Retrieving Log Files

The ADPRO device can output its internal trace buffer to hard disk to allow logging for longer periods without losing the data. You need to enable logging first.

To enable logging and retrieve log files, proceed as follows:

1.   Type the device's IP address in the address bar of your internet browser and add /log.php to the address.
   Example: http://10.0.0.10/log.php.
      The **Internal Logging** page appears. It displays instructions to enable logging. If logging is not yet enabled, the **Log list** at the bottom of the page is empty.
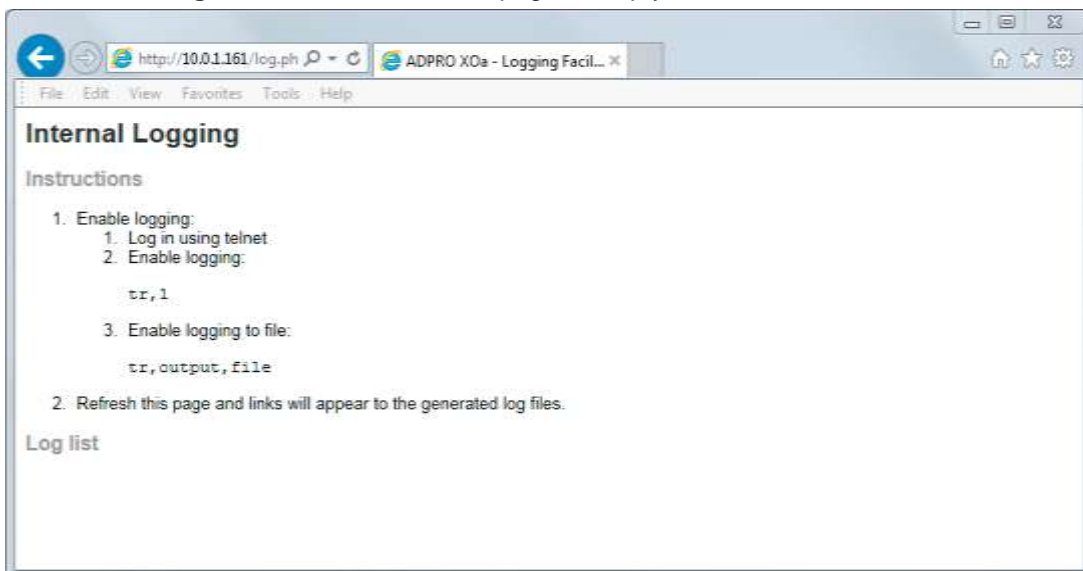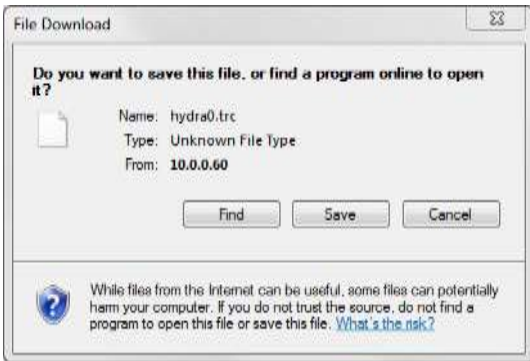

2.   To enable logging, connect to the device via Telnet and enter the following Telnet commands:
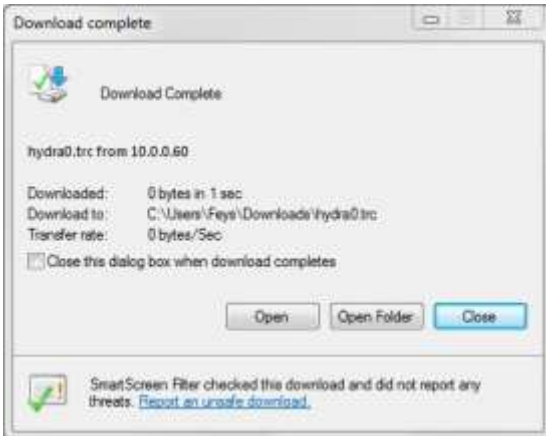   **tr,1**
      tr,output,file
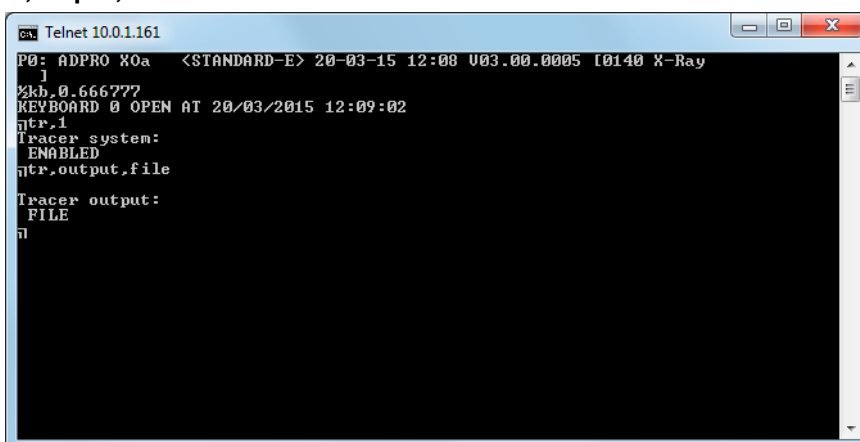
After you have enabled logging, links to the log files appear on the web page in the **Log list**:
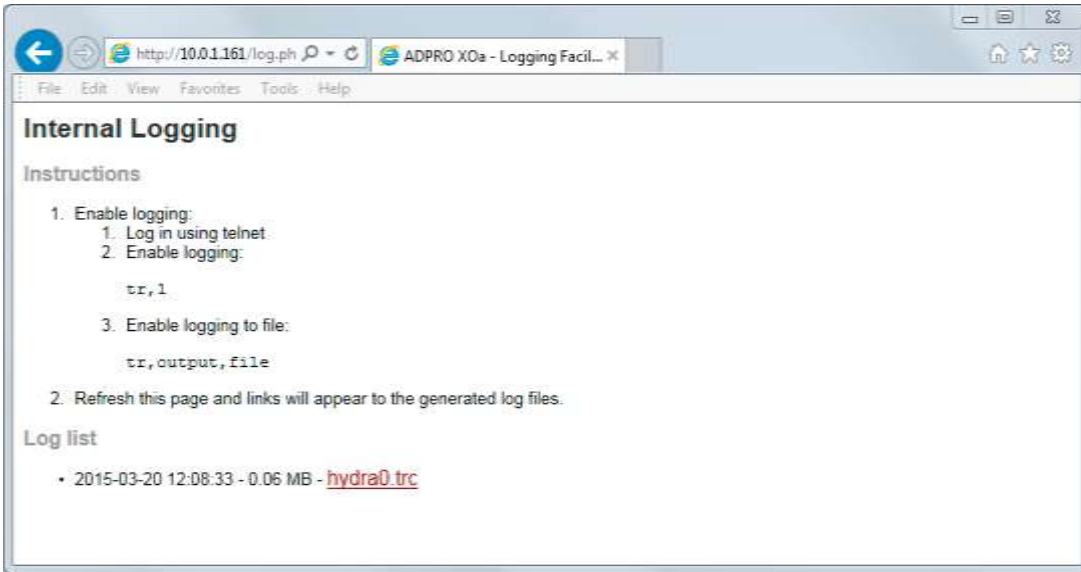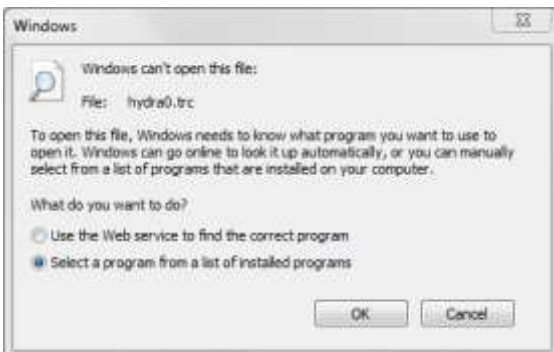

3.   To retrieve a log file, click the link on the web page.

4.   Click **Save** to store the file on your PC or a network folder. Do not try to find a program online, because this will provide unexpected websites.
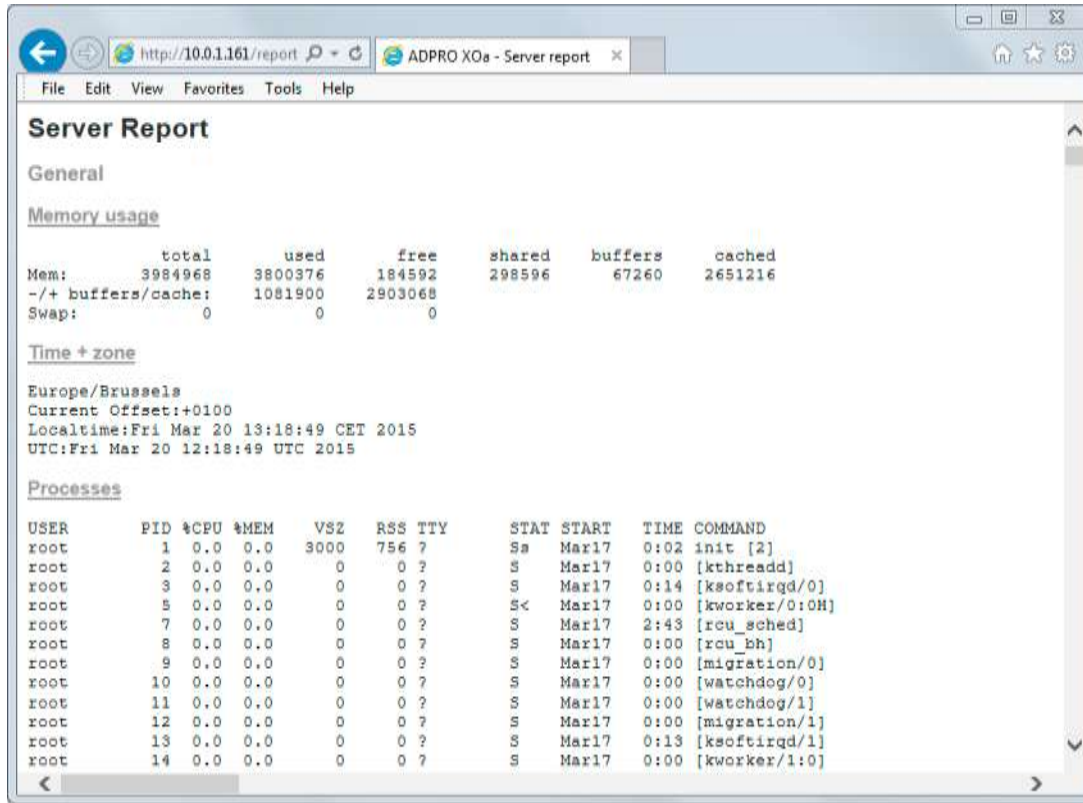

5.   Click **Open** and choose **Notepad** as default application.

15.3   Retrieving Reports

The ADPRO device also generates reports. You can view these reports via the internet browser. Type the IP address of the ADPRO device in the address bar of the browser and add /report.php to the IP address. Example: http://10.0.0.10/report.php
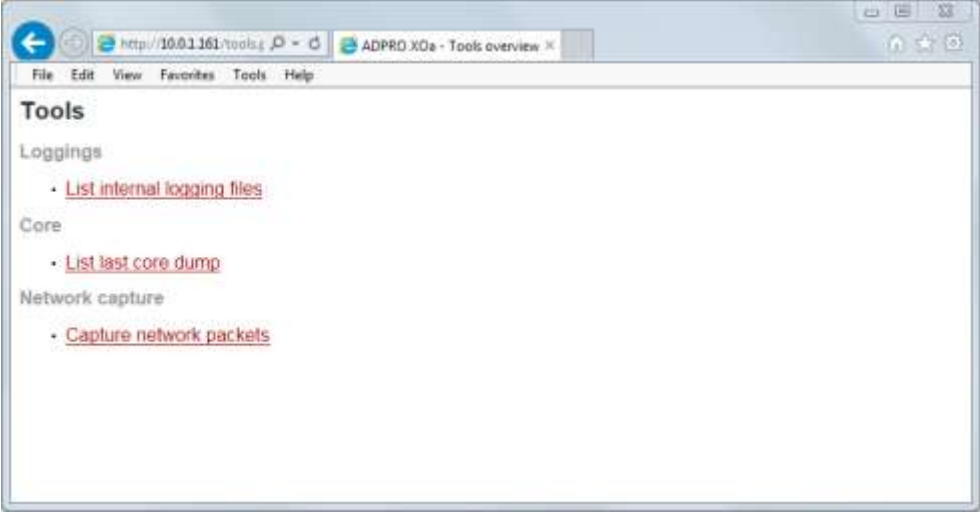

The Server Report contains the following information:

General	Memory usage
	Time + zone
	Processes
	Uptime
Performance	Vmstat
	I/O stat
	PID stat
	MP stat
Network	Interfaces – available
	Interfaces – enabled
	Routes
	Listen ports
	Netstat – all
	DEV stats
	Sockstat
	ARP cache
Filesystem	Mounts
	S.M.A.R.T
	Fsck
	Open files
	Free disk space

Hardware	CPU
	Memory
	Mainboard
	PCI
	Udev database
Server	Server version
	Server process memory usage
	Files
	Active config

16   Web Pages

There are several web pages to consult with the ADPRO device. To open these web pages in your internet browser: type the IP address in the address bar, followed by the extensions as described in the table below.

Web page	Description
index.php	This is the main page of the ADPRO device. If the XOa client has been installed, this page automatically opens the XOa client application (see the *XOa Client Software User Manual* (21796)). If the application has not yet been installed, you will be redirected to the setup page (setup.php).
setup.php	On this page you can download the client application (see the *XOa Client Software User Manual* (21796)).
tools.php	This page contains the links to the internal logging, the core dump and the network trace:
log.php	Here you can download the log files (see *Retrieving Log Files* on page 52).
report.php	Here you can consult essential information on the configuration (see *Retrieving Reports* on page 54).
core.php	Here you can download the core dump (crash info) and watch dump (hang info) when you encounter these specific problems. The Xtralis Support Division may ask you to send these files to them for further investigation. Always mention the version when providing a core dump!
phpshell.php	This is a Linux console through a web browser. You need a username and password to use this tool. This is by default only accessible for the Xtralis Development Team.
net.php	Here you find a network sniffer for network tracing. You can use it for checking why a certain client cannot connect to the ADPRO device.

17   Maintenance

An iFT Series device requires almost no maintenance.

Keep the device dust-free. Make sure to clean the ventilation grids at the front and back, to assure proper airflow in the device.

> ***Caution!***
>
> Do NOT clean the device with water or any corrosive products. Use only dust cloths and wipes to clean the outside.

18   Full Reset by Flashing the DOM

18.1 Flashing the Image File to the DOM

You can perform a full reset of the ADPRO device by flashing the iFT image file straight to the DOM (disk-on-a-module) using the ImageFlash tool.

When you perform a full reset using the ImageFlash tool, the system:

- Resets the IP address to 10.0.0.10.
- Deletes all configurations and restores the default values in all configurations
- Restores the default values for the configuration of MIO card and Net I/O modules (NO/NC, failsafe, and watchdog)
- Deletes all users and restores the default users
- Deletes the calibration pictures
- Deletes all licenses: system license and application licenses.

There are other options for full or partial resets. For more information, see *Tech Tip #06 Resetting to Defaults* (27986).

> **Caution!**
>
> **Before** performing a full reset, back up any data that you need to keep and restore. At the very least, back up the system license. You can back up the system license via the client software. For instructions, see the *XOa Client Software User Manual* (21796).
>
> You can easily reinstall your application licenses via Xchange (synchronise). For instructions, see the *Xchange Tool User Manual* (27816).

To perform a full reset using the ImageFlash tool, you need the following:
- the ImageFlash tool
- the iFT image file to flash on the DOM
- a SATA-to-USB cable.

You can find the tool and image file either on the iFT installation CD, or on the Xtralis Security Support site www.xtralissecurity.com. (Tip: search for keyword **ImageFlash** to find the tool; filter on **Information Type** = **Firmware** to find the image file.)

> **Caution!**
>
> If you perform a full reset using the ImageFlash tool, the ADPRO device will reboot with IP address 10.0.0.10. Make sure that your PC can reach this address and reconnect to the ADPRO device: set the IP address of your PC in the same range.

To perform a full reset using the ImageFlash tool, proceed as follows:

1. In the client software, choose **System > Maintenance > Configuration Management**.
2. Click **System halt**.

3. Click **Yes** to confirm. The system shuts down all processes and connections. This may take a minute.
4. Wait for all the LEDs on the front panel to go out.
5. Switch off the power using the on/off switch at the back of the device.

> ℹ️ **_Note_**
>
> You have 20 seconds to switch off the device. After 20 seconds the device restarts again automatically.

6.   Unplug the power cord, and open the cover. The DOM is located at the back of the front panel:


7.   Unplug the SATA cable that connects the DOM to the motherboard.
8.   Unplug the DOM's power cable.
9.   Insert the SATA-to-USB cable into the DOM, and plug the other end into your PC.

> ℹ️ **_Note_**
>
> If you are using a new, unused DOM, you must format it first. When you connect the DOM to your PC, the system will display a message, asking to format the DOM: click **Yes** or **OK** to format the DOM.

10.   On your PC, double-click the FastTrace2ImageFlash.exe file to start the ImageFlash tool. The following screen appears:
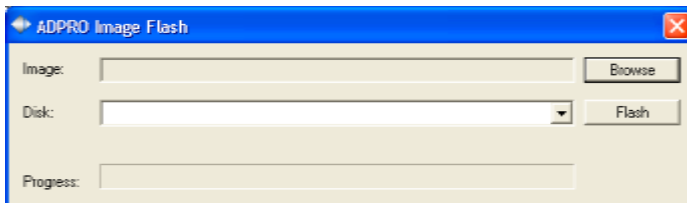
11.   Click **Browse** and browse to the folder where the iFT image file is located.
12.   Select the image file and click **Open**.
13.   In the **Disk** box, select the DOM.
14.   Click **Flash**.
15.   Wait for the tool to complete the flash process.
16.   Unplug the SATA-to-USB cable from the DOM.
17.   Re-insert the SATA cable to connect the DOM to the motherboard.
18.   Re-insert the DOM's power cable.
19.   Put the cover back in place and switch on the power supply. The ADPRO device reboots.
20.   Reconnect the client to the ADPRO device using the default IP address (10.0.0.10) and the username/password of a default user.

18.2 After a Full Reset

After a full reset, the system contains no more licenses. The system license is no longer available either. An ADPRO device running without system license will behave as a video system with a **FULL license for 5 days**. After that period of 5 days, the ADPRO device enters a **locked-down state**, and the XOa client shows only the **About** window (so that you can retrieve the necessary information to order a new license if necessary) and the **Transfer** window (so that you can upload a license to the ADPRO device). You can also try to restore the system license using Xchange.

You can restore:

- the system license: via the XOa client, from the backup that you made before resetting, or via Xchange
- the application licenses: via Xchange
- other files (configurations, calibration pictures…): via the XOa client, from the backup that you made before resetting.

You will need to reconfigure the MIO card and Net I/O modules manually.

19   Product Labelling

19.1   Product Numbers

Each iFT Series product has an 8-digit product number, indicating the installed options.

The product number layout is as follows: PP CC HH 1 D

PP	The iFT model number: • 60 = iFT model • 61 = iFT-E model (max. 2 HDDs) • 63 = iFT-E model 4 HDD ready.		
CC	The number of included IP channels:		
	• 01 = 4 IP • 02 = 8 IP • 03 = 12 IP • 04 = 16 IP	• 05 = 20 IP • 06 = 24 IP • 07 = 28 IP • 08 = 32 IP.	
HH	The hard disk size:		
	Single disk	**RAID 1 Ready**	**2 x RAID 1 Ready**
	• 10 = device without hard disk, prepared for 1st disk • 11 = 1 x 500 GB • 12 = 1 x 1 TB • 13 = 1 x 2 TB • 14 = not used • 15 = 1 x 4 TB • 16 = 1 x 6 TB • 17 = 1 x 8 TB • … • 19 = 1 x "X" TB*	• 20 = for future use • 21 = 2 x 500 GB • 22 = 2 x 1 TB • 23 = 2 x 2 TB • 24 = not used • 25 = 2 x 4 TB • 26 = 2 x 6 TB • 27 = 2 x 8 TB • … • 29 = 2 x "X" TB*	• 40 = for future use • 41 = 4 x 500 GB • 42 = 4 x 1 TB • 43 = 4 x 2 TB • 44 = not used • 45 = 4 x 4 TB • 46 = 4 x 6 TB • 47 = 4 x 8 TB • … • 49 = 4 x "X" TB*
	00 = Transmission only (1 TB) * X is to be defined in the future.		
1	1 = 1 built-in MIO card.		
D	Special options: • 0 = no special options • 2 = Bundle (+ 2 IntrusionTrace licenses).		

For example:

• 60021310 = iFT model, 8 IP channels included, 2 TB HDD, built-in MIO card

• 63041610 = iFT-E model, ready for 4 HDDs, 16 IP channels included, 6 TB HDD, built-in MIO card.

19.2 Declaration of Conformity

ADPRO iFT, iFTE, HeiTel ipVG   EMC Test plan

Annex 7: Suppliers Declaration of Conformity (conform ISO17050)

1. Number of SDoC: SDoC_iFT_iFTE_ipVG_(<date>)
2. Issuer's name: XTRALIS/ VSK Electronics NV, Venetiëlaan 39,
                              8530 Harelbeke, Belgium
3. Object of Declaration (OoD):   ADPRO iFT / ADPRO iFTE / HeiTel ipVG
4. The object of declaration described above is in conformity with the requirements of the
   following documents:

   2004/108/EC EU EMC Directive (December 2004)
   EU Harmonised standard EN 61000-6-3 Generic emission standard – Residential and light
   industry
   EU Harmonised standard EN 50130-4: 2011, Alarm systems. Electromagnetic
   compatibility. Product family standard: Immunity requirements for components of fire,
   intruder and social alarm systems

   CISPR22:2008 Class B

   FCC 47 CFR 15.109, radio frequency devices, sub part B unintentional radiators, Class B

   A EMC Test Plan ref. EMC_ iFT_iFTE_ipVG_Test Plan Issue1 is available

5. Signed for and on behalf of: VSK Electronics NV
6. Date: 24 april 2015

Author, Name : Emmanuel Seynaeve Signature :	Verified, Name : Ivan Malfait Signature :	Approved, R&D Mgr, : Gerdy Maelbrancke Signature :

Appendix A: Abbreviations

3G: third generation

A: ampere

AWG: American wire gauge

BIOS: basic input output system

CPU: central processing unit

DEOL: dual end of line

/dev/ttyU1: USB input 1

DOM: disk-on-a-module

DP: DisplayPort

DVI-I: Digital Visual Interface (digital and analogue)

EMS: Event Management System

eth: Ethernet interface

fps: frames per second

FTDI: Future Technology Devices International

GND: ground

HD: high definition

HDD: hard disk drive

HTTP: hypertext transfer protocol

Hz: Hertz

I/O: input/output

IP: internet protocol

ISDN: Integrated Services for Digital Network

LAN: local area network

LED: light emitting diode

m: metre

mA: milliampere

MAC: Media Access Control

Mbps: megabits per second

MIC: microphone

MIO: Main I/O

mm: millimetre

NC: normally closed

NEOL: no end of line

NO: normally open

NTSC: National Television System Committee

OS: operating system

OTB: on the box

PAL: Phase Alternating Line

PC: personal computer

PIR: passive infrared

PoE: power over Ethernet

PSTN: public switched telephone network

PTZ: pan tilt zoom

RAID: redundant array of independent disks

RH: relative humidity

RMG: Remotely Managed Multiservice Gateway (= FastTrace 2 Series or iFT Series device)

RTSP: real-time streaming protocol

SATA: serial ATA

SDK: software development kit

SEOL: single end of line

SMART: Self-Monitoring, Analysis, and Reporting Technology

SPDT: single pole double throw

SPK: speaker

TB: terabyte

TCP: transmission control protocol

UDP: user datagram protocol

USB: Universal Serial Bus

VAC: voltage alternating current

VBR: variable bitrate

VCP: VideoCentral Platinum

VDC: voltage direct current

VGA: Video Graphics Array

W x H x D: width x height x depth

XGA: eXtended Graphics Array

Doc. 27817_02   P/N 19532170

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by ◆ **xtralis**®