

Series | 5000[®]

Reference Manual OTR 5444

4-Channel Bi-Directional 12G-SDI to Fiber Converter

Revision 1.2 – May 2026

This Manual Supports Device Revisions:	
OTR 5444 Firmware Revision	941
Control System GUI Release	8.12.0

LYNXTechnik **AG**[®]
Broadcast Television Equipment

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Getting Started

Most Series 5000 card modules are installed in a rack frame and system-tested in the factory. If this is an upgrade card or service exchange item then the module is supplied in a padded cardboard box which includes the card module, rear connection plate and mounting screws.

Packaging

The shipping box and packaging materials provide protection for the card during transit. Please retain the shipping box in case subsequent shipping of the product is necessary. Do not remove the card(s) from their protective static bag without observing adequate ESD precautions.

ESD Warning



This product is sensitive to electrostatic discharge (ESD). Improper handling of electronic assemblies or components may result in permanent or intermittent damage.

Do not handle the module without using an ESD-preventive wrist strap. Ensure the strap is in direct contact with the skin and properly connected to a reliable ground, such as exposed metal on the rack chassis or any other unpainted, grounded metal surface.

Caution

Periodically check the resistance value of the antistatic strap. The measurement should be between 1 and 10 Megohms.

Product Overview

Description

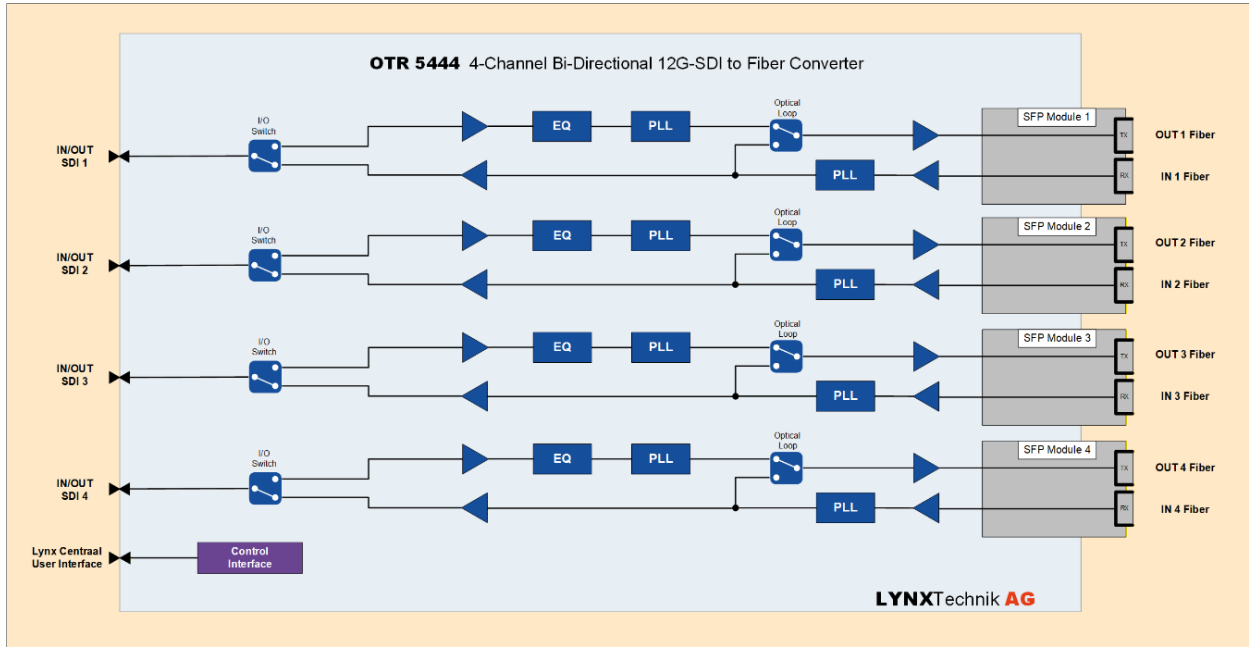
The OTR 5444 4-channel 12G-SDI fiber transceiver is a four-channel, bi-directional 12G-SDI to fiber module designed for video signals up to 4096×2160p at 60 Hz. Each channel operates independently and features automatic input clock detection and signal presence monitoring. The card provides four bi-directional 12G-SDI micro-BNC interfaces, along with four SFP Transceivers allowing up to four fiber receivers and four fiber transmitters. The latest firmware update enables optical signals to be reclocked and looped to their respective fiber transmitter.

Designed for demanding broadcast environments, the card delivers reliable high-quality signal transport in a compact, modular form factor, making it well suited for space-constrained installations. As part of the Series 5000 platform, the OTR 5444 integrates seamlessly with Lynx Centraal for remote control, status monitoring, and error reporting.

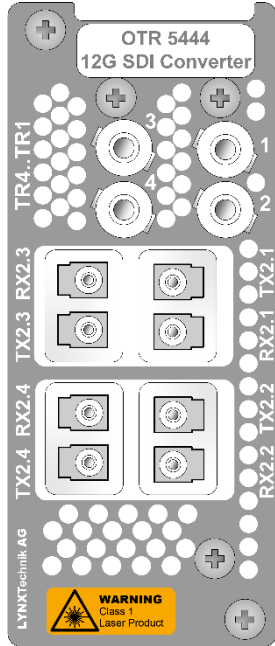
Key Features

- Bi-directional electrical to optical and optical to electrical conversion
- Four independent 12G-SDI Channels (8K quad-channel optical <-> electrical)
- 4x Optical Transceivers (TR)
- 4x Bi-Directional micro-BNCs
- Reclocked incoming and outgoing 12G-SDI signals.
- Reclocked fiber loop (with latest firmware version)
- Input presence detection with LED indication
- Microprocessor controlled with internal flash memory for storing configuration
- Remote control, status monitoring and error reporting via LYNX Appolo Control System
- Hot swappable

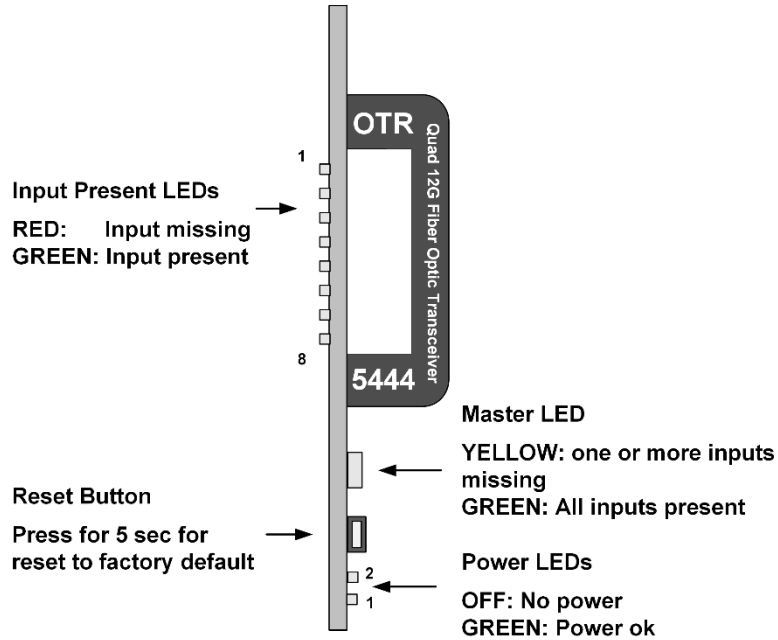
Functional Diagram



Module Layout



Termination Panel



Module Front

Connections

High-Density MicroBNC

Four high-density micro-BNCs can be set as input or output for 12G SDI signals (bi-directional ports). Those Micro BNC connectors are optimized for 12G SDI / UHD Broadcast applications.

Optical Fiber

The OTR 5444 features four SFP cages for optional transmitter and receiver modules. It supports both duplex and simplex SFP transceivers, as well as separate simplex transmitters and receivers. The unit can be equipped with SFPs operating at Dense 1310 nm and Coarse wavelength ranges.

This device is designed for operation with single-mode fiber.

NOTE: Please take care that surfaces of fiber cables and LC connectors are always protected against scratching and dust if no fiber cables are connected. Dust and/or scratches will lead to high attenuation of the optical power transmitted.

Installation

The card uses a single-width rear connection panel and occupies one slot in a standard Series 5000 rack frame. A maximum of eight OTR 5444 card modules can be installed in a single rack frame.

Each card module is supplied with a rear connection panel and mounting screws. Follow the steps below to install the module into the Series 5000 Rack Frame.

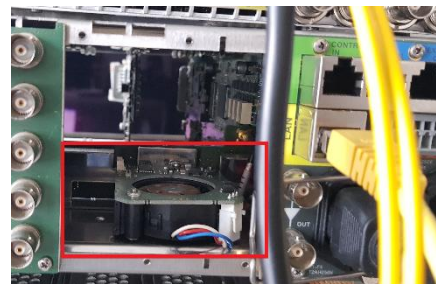
Recommendations:

Power down the rack before installing additional modules into an existing frame whenever possible.

Use the RFR 5018 Rack Frame with Front Fans to provide additional airflow within the rack enclosure.

Installation Procedure:

- Choose a free slot in the rack frame to install the module. The two slots next to the power supplies cannot be used for this module due to Fan unit installed at the bottom of Slots 1 & 2.
All modules except OTR 5444 and DVD 5480 HO/TO/H can be installed on slot 1 & 2 thanks to their smaller size backplanes.



- Remove the blank rear connection panel from the selected slot, if fitted.
- Install the supplied rear connection panel using the screws provided. Do not fully tighten the screws at this stage.
- Carefully slide the card module into the rack frame and verify that it connects to the rear connection plate.
The module should insert smoothly without excessive force. If you feel any resistance, the rear connection panel may be misaligned. Do not force the card into position, as this may damage the connectors.
- Insert and remove the card module a couple of times to confirm proper alignment. Once aligned correctly, tighten the two screws to secure the rear connection plate.
- Power up the rack and verify correct LED illumination. Check that the card is automatically detected and added to the control system device tree.
Detection by the control system may take a few seconds after power-up.

Supported Audio/Video Formats

Input Video Formats

The card features multi-format serial digital inputs with automatic format detection. It automatically identifies all supported input standards and configures itself to operate with the connected signal up to 12G-SDI 4:4:4 12-bit.

Output Video Formats

Output Video Formats are identical to Input Video Formats.

Settings and Control

This Series 5000 card module can be remotely configured and controlled when using the optional RCT controller card and Lynx Centraal or APPolo Control Server applications. Settings are saved in a non-volatile internal flash memory. The card module will always recall the settings used before powering down.

Auto Store

When no parameters are changed for 10 seconds, the current settings are automatically written into the flash memory. This can be seen by the channel status LEDs flashing yellow three times.

Reset Button

Press and hold down this button for 5 seconds to reset all parameters to their factory default settings. The card LEDs will blink all at once (OFF–ON–OFF) to confirm the reset.

LED Status Indicators

LED	Color	Meaning
Input 1-8	Green ●	SDI input present
	Red ●	SDI input missing
Master	Green ●	Card health is OK
	Yellow ●	One or more input missing
	Yellow (Blinking) ●	Locate device
	Red ●	- Fan Failure - Over Temperature - Wrong backplane
Power 1	Green ●	Power from Main PSU OK
	Off ●	No power from Main Power Supply
Power 2	Green ●	Power from Redundant PSU OK
	Off ●	No power from Redundant PSU

NOTE: If a Power LED is OFF while its corresponding PSU is working, contact support to get the board's power input fuse checked.

Lynx Centraal User Interface

Overview

All LYNX Card Modules support LynxCentraal control system for setup, configuration, and monitoring. It provides access to all standard and advanced parameters.

Settings are stored in an internal flash RAM and are retained during power cycles and long-term storage.

Any settings changed via LynxCentraal override the dip switch settings from the board.

The UI shown below represents the complete control interface for the card module. The **Device Info** section at the top of the window displays general information, including the card module name and firmware revision. The **Position** section indicates the module's slot position and physical location within the installation. The **Locate** button provides a quick way to identify a specific card module within a rack frame. When activated, the card's alarm LED flashes yellow to help locate the module. This function does not affect the card operation and automatically deactivates after a timeout period.

The "Event Log" at the bottom of the screen displays timestamped errors and warnings. The same information can be found in the APPolo Control System's log files.



Main

The “Main” tab provides a graphical overview of the module’s functionality with audio and video signal paths displayed from left to right. Module settings can be adjusted using on-screen controls.

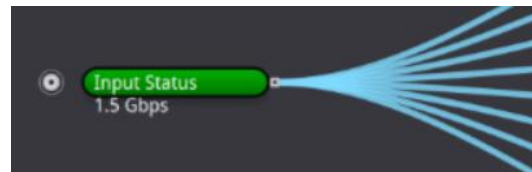
The display can be zoomed in or out using the mouse wheel or the navigation controls located in the upper corner of the MAIN tab. As the view is enlarged, additional details within the individual function blocks become visible.

Signal Path

The input interfaces are shown on the left-hand side of the flexGUI, while the output interfaces are displayed on the right-hand side. Hovering the mouse pointer over a signal line will show a handle. Grab the handle (click-and-hold) with the left mouse button and drag and drop it to another node.

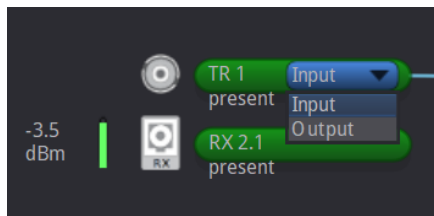
The SDI video format is displayed in green when supported, yellow when present but unsupported and red when not present.

The SDI input delivers its signal to the equalizer and reclocker. The standard of the generated SDI output follows the input standard. As soon as a valid SDI input is detected, the signals will automatically be routed to all SDI Outputs.

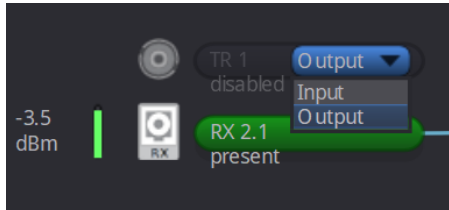


Electrical / Optical Conversion

The OTR 5444 has four independent Electrical <-> Fiber conversion channels that support video formats up to 12Gbit/s. It consists of four bi-directional high-density micro-BNCs that can be set to input or output. On the fiber end, there are four independent inputs and outputs that are grouped in transceiver slots (TR).



For “Electrical to Optical conversion,” set the electrical interface on micro-BNCs to Input from the drop-down list.



For “Optical to Electrical conversion,” set the electrical interface on micro BNCs to output from the drop-down list.

The optical loop is off by default and can be enabled in the params tab.

Events

The Events tab is used to configure alarm and error notifications for the card module. All events generated by the device can be individually disabled, allowing non-relevant events to be ignored. Disabled events are not reported to the APPolo control system, are not recorded in log files, and do not affect the device’s local LED indicators.

By default, all events are enabled. When a monitored condition becomes critical, for example loss of input signal, the corresponding event changes to an ACTIVE state. This state change generates a message in the APPolo Control System, which is stored in the APPolo Server log file.

When the condition returns to normal (the input signal is restored) a second message is generated and logged in both the APPolo Event System and the server log file.

These event messages can be displayed in the APPolo GUI Event Log, located in the lower section of the GUI and accessible through the View menu. Display of these messages in the GUI can be enabled or disabled independently for:

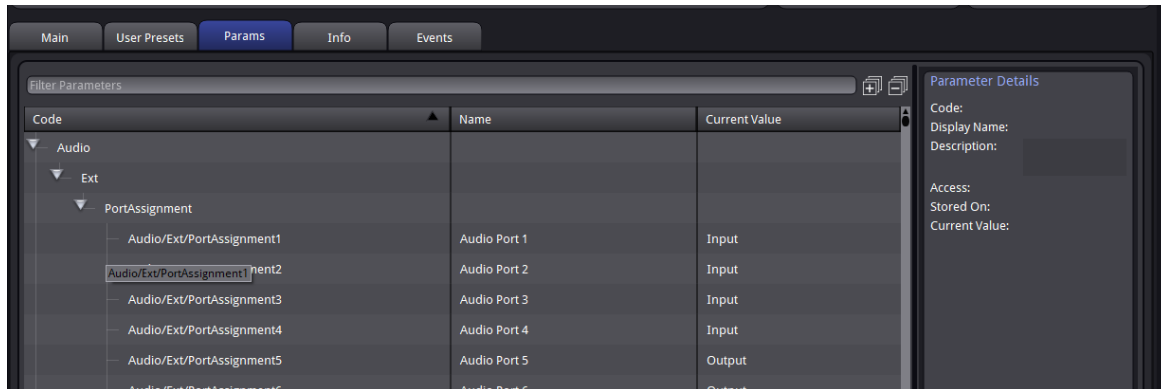
- “Event becomes Active” messages
- “Event no longer Active” messages

The APPolo Server can generate SNMP traps for any event in the APPolo Event System.

Params

The Params tab provides a complete list of available control parameters for the card module. Every switch, setting, and function available throughout the UI has a corresponding parameter in this tab.

The Parameters tab includes advanced configuration options that are accessible exclusively through the parameter list, providing refined control of the device's operation.



Each parameter is defined by the following attributes:

- **Code**
A unique identifier assigned to the parameter. The code may include slash characters (/) to provide a hierarchical structure within the complete parameter set. When referencing a parameter, the full code string including all slashes must always be used.
- **Name**
A user-friendly name used as the default label on the GUI and within CustomControl panels.
- **Access**
Indicates whether the parameter is read-only or read-write. For certain parameters, the access status may change dynamically depending on the state of other parameters. For example, parameter A may normally operate in an automatic mode and therefore appear as read-only. If a separate boolean parameter B is used to disable the automatic mode and switch operation to MANUAL, parameter A will automatically change to read-write access.
- **Current Value**
Displays the current value assigned to the parameter. If the parameter has read-write access, this value can be modified by the user.
- **Description**
Provides a textual explanation of the parameter's function and behavior.

A Filter is available to speed up navigation through large parameter sets. The filter performs a text-based search across all attributes, including the parameter code, name, description, and current value, allowing only matching entries to be displayed.

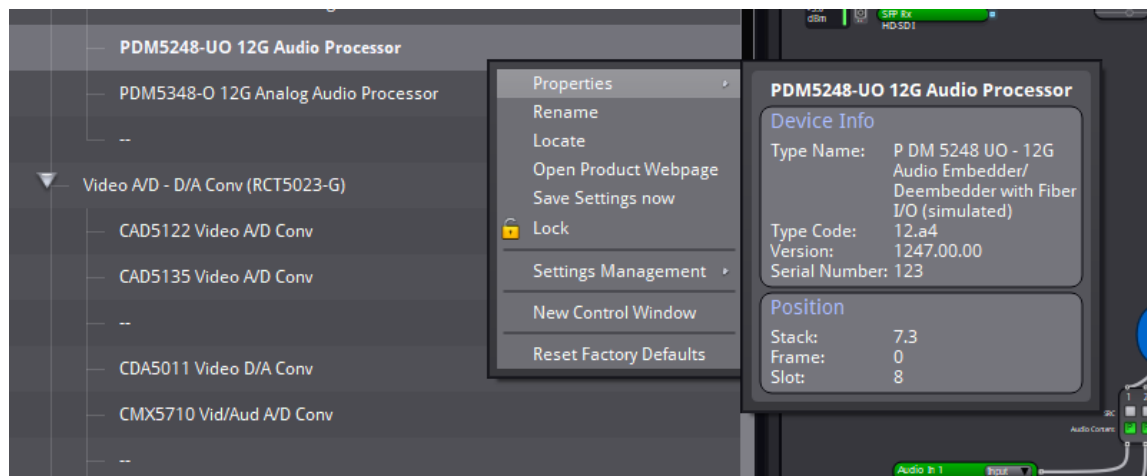
All the device functions can be controlled and monitored through the parameters listed in the **Params** tab.

- The CC Author feature connects the individual elements of a custom-made Design to real device parameters by their Code.
- The LynxCentraal Auto automation rules access the individual Parameters (for both Conditions and Actions) by their Code.
- The LYNX Remote API can list, read and write individual parameters by Code.
- SNMP Control provides one OID (numerical address in the MIB) per individual parameter. The exact mapping is provided in the MIB files.
- See the APPolo Quick Start Guide for details: <https://lynx-technik.com/software-applications/#APPoloControlServerSection>

To find a parameter's code name in the GUI, right-click its control and select "Parameter Details."

Common User Interface Controls

Several Control System functions and commands are common to all LYNX devices. Right-click on any device in the Device Tree shows a contextual menu with the following options:



Device Properties

The first entry in the Device menu opens a sub-menu page that shows the selected device-specific properties.

Locate

Quickly locate a card module by making its alarm LED flash yellow. This function does not impact normal module operation and will time out after a short period.

New Control Window

Open a separate window with the controls for the current card module.

Rename

It is possible to rename individual items such as Rack Frames and card modules in the Device Tree. The original name can be restored by removing the custom name from the rename field (save it as an empty name). **NOTE:** The names are stored inside the flash memory of a LYNX server add-on board (if installed) or the hard disk of the connected Computer Lynx Centraal runs on.

Save Settings Now

To reduce write operations, settings are written 10 seconds after the last modification. During this process, all local LEDs flash yellow three times.

If a card is removed or powered down before the save process is completed, the most recent changes are lost.

Use the “Save Settings Now” command to store the current configuration **immediately** to the card module memory. This is recommended before removing a device or shutting down the rack power.

Lock

Selecting this option locks the device to prevent accidental changes to its settings. The device status remains visible, but all controls are disabled and grayed out. To unlock the device, deselect the lock option from the menu.

Reset Factory Defaults

This function resets all device parameters to the manufacturer default state. All custom settings are removed. The operation cannot be undone.

Settings Management

The full configuration of a device can be copied to an internal clipboard and applied to another device of the same type. It can also be saved as a local file for basic single-device backup.

Warranty

LYNX Technik AG guarantees that the product will be free from defects in materials and workmanship for a period of three (3) years from the date of shipment. If a defect occurs during this warranty period, LYNX Technik AG, at its discretion, will either repair the product at no charge for parts and labor, or provide a replacement in exchange for the defective product.

To receive service under this warranty, customers must notify LYNX Technik of the defect before the warranty period expires and coordinate appropriate service arrangements. Customers are responsible for properly packaging and shipping the defective product to the service center specified by LYNX Technik, with all shipping costs prepaid. If the return shipment is within the same country as the LYNX Technik service center, LYNX Technik will cover the cost of returning the repaired or replacement product to the customer. For returns to any other location, the customer is responsible for all shipping costs, duties, taxes, and any additional fees.

This warranty does not cover defects, failures, or damage resulting from improper use, or inadequate maintenance or care. LYNX Technik is not obligated to provide service under this warranty in the following cases: (a) damage caused by installation, repair, or servicing attempts by anyone other than authorized LYNX Technik personnel; (b) damage resulting from misuse or connection to incompatible equipment; (c) malfunctions or damage caused by the use of non-LYNX Technik supplies; or (d) products that have been modified or integrated with other equipment, where such modification or integration complicates or extends the time required for servicing.

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Regulatory information

Europe: Declaration of Conformity

We	LYNX Technik AG Brunnenweg 3 D-64331 Weiterstadt Germany
<i>Declare under our sole responsibility that the product</i>	
TYPE: OTR 5444	
<i>To which this declaration relates is in conformity with the following standards:</i>	
EN 55103-1:2013 EN 61000-4-2:2009 EN 61000-4-3:2011 EN 61000-4-4:2013 EN 61000-4-6:2014 EN 55103-2:2010	
<i>Following the provisions of 2014/30/EU.</i>	
	
Weiterstadt, November 2020 <i>Place and date of issue</i>	Stefan Gnann/CEO <i>Legal Signature</i>

USA: FCC 47 Part 15

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Technical Support

Spare Parts

Due to the very dense design and high level of integration this card module is not user serviceable. Please contact Technical Support for repairs or to request an exchange unit.

Support and Returns

If you experience any issues or have questions, please contact your local distributor or reseller. Technical support, including a comprehensive online knowledge base, is available on the [LYNX Technik Support](#) website.

Please do not return products without first obtaining an RMA (Return Merchandise Authorization) number. Contact your authorized dealer or reseller for RMA instructions.

Additional product information is available at www.lynxtechnik.com.

Free firmware updates are available through [Lynx Centraal](#).

Contact Information

Please contact your local distributor; this is the fastest method for obtaining support and sales information.

LYNX Technik can be contacted directly using the information below.

Address	LYNX Technik AG Brunnenweg 3 64331 Weiterstadt Germany
Website	www.lynx-technik.com
E-Mail	info@lynx-technik.com