



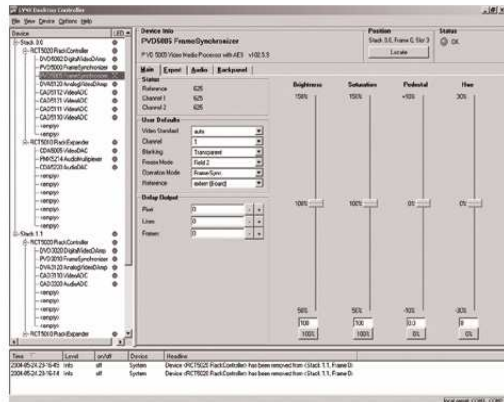
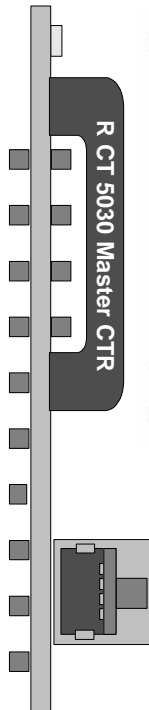
Version 1.5

Reference Manual

R CT 5030

Master Controller

Series 5000
CardModule



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In order to obtain service under this warranty, customer must notify LYNX Technik of the defect before expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service center designated by LYNX Technik, with shipping charges prepaid. LYNX Technik shall pay for the return of the product to the customer if the shipment is within the country which the LYNX Technik service center is located. Customer shall be responsible for payment of all shipping charges, duties, taxes and any other charges for products returned to any other locations.


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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: R CT 5030	
<i>To which this declaration relates is in conformity with the following standards (environments E1-E3):</i>	
EN 55103-1 /1996	
EN 55103-2 /1996	
EN 60950 /2001	
<i>Following the provisions of 89/336/EEC and 73/23/EEC directives.</i>	
	Winfried Deckelmann
	
Weiterstadt, November 2004	
<i>Place and date of issue</i>	<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 his own expense

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Getting Started

Packaging

The shipping carton and packaging materials provide protection for the module during transit. Please retain the shipping cartons in case subsequent shipping of the product becomes necessary.

Product Description

The R CT 5030 is the Master Controller option for the R FR 3010 and R FR 5010 Rack Frame assemblies and provides central remote control, status monitoring and error reporting for all installed LYNX modules.

The module has an onboard PC running LINUX and is a complete stand-alone control solution. An external PC is connected over LAN which runs the supplied LYNX control software. This provides the graphical user interface to the control system. Controller configuration and administration is performed using a standard browser interface (IE, Netscape etc).

The option consists of the controller hardware and the required LYNX control software that is designed to operate on a standard Windows compatible PC.

The R CT 5030 is one component in a scalable and modular control system topology that can expand from a single rack to hundreds of racks located in different locations. Controller options available are:

R CT 5020 – Rack Controller. This is normally the first controller added to a system and will provide remote control, status monitoring and error reporting for all modules installed in a single rack.

R CT 5010 - Bus Expander. This is designed for use with a host R CT 5020 or R CT 5030 controller and facilitates the expansion of the system into 7 more adjacent racks. A very cost effective expansion option for systems where all racks are in very close proximity.

R CT 5030 - Master Controller. For larger systems, or for systems requiring network connectivity we provide the Master Controller. This provides network connectivity, a browser style interface for controller configuration. This option is also required for the support of SNMP error reporting.

NOTE

Each control system is configured based on the application, connectivity requirements and the physical location of the racks. Care should be taken when specifying the controller options for larger systems. We can provide assistance in system design if you have some concerns. Please Contact your local dealer or a LYNX office for assistance.

Functional Diagram

Figure 1 below is the basic functional diagram for the R CT 5030 CardModule.

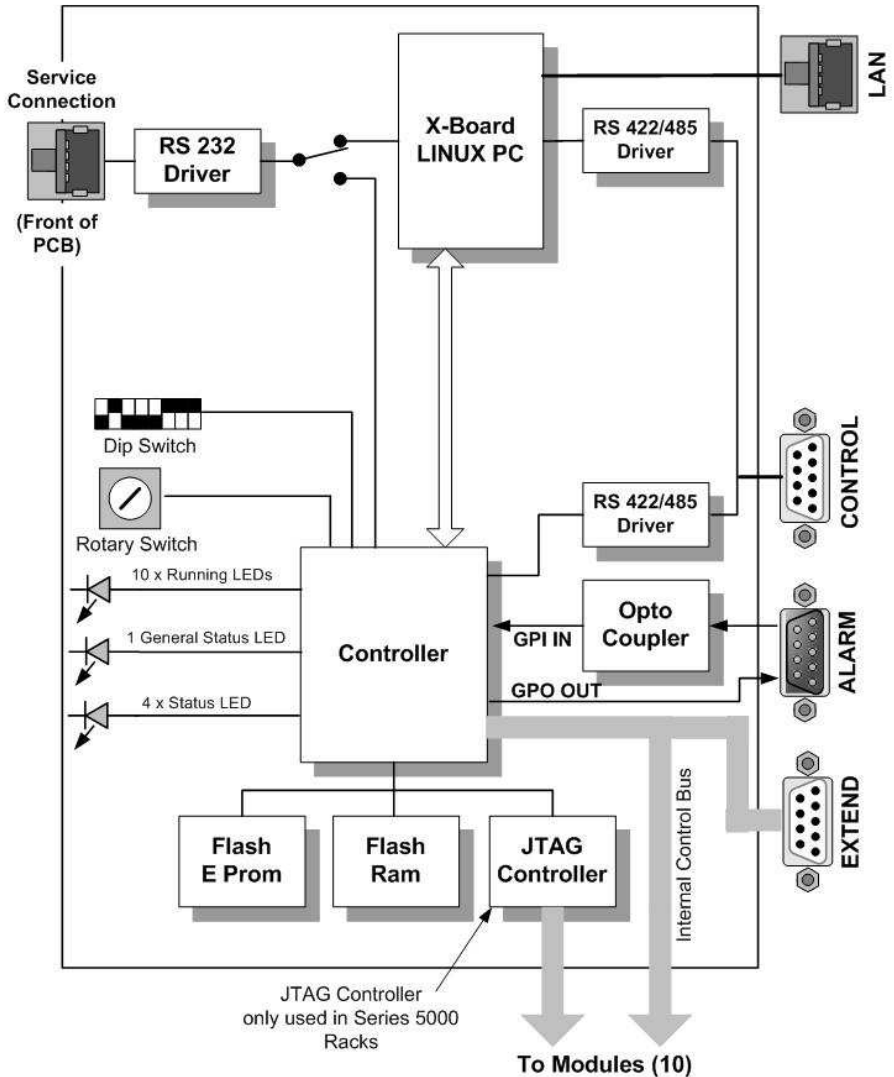


Figure 1- R CT 5030 Functional Diagram

Module Layout

Figure 2 (below) shows the physical layout of the RCT 5030 CardModule and the locations of the various controls, connections and indicators.

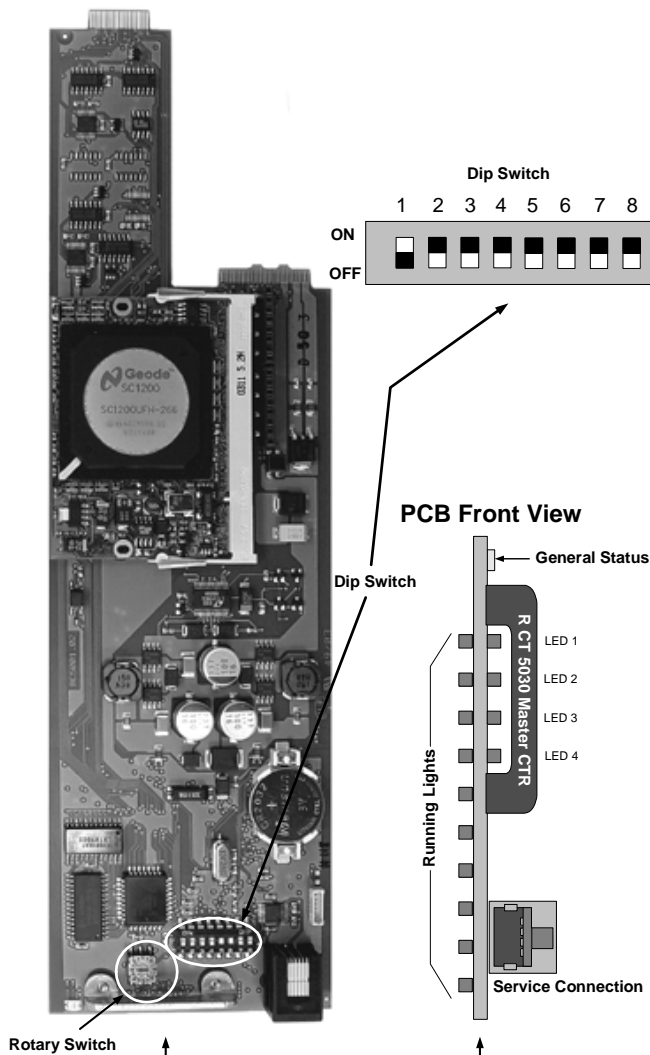


Figure 2: Physical layout R CT 5030

**Caution**

Use static precautions when handling the PCB. Static discharge could result in serious damage to the module.

Control System Topology

Before using the R CT 5030 it is worthwhile to understand the control system topology and expansion path to ensure the correct use of the available control system hardware options.

There are three basic hardware building blocks to a LYNX control system. The first step is to add the RCT 5020 or RCT 5030 Controller to your system. This will provide remote control / status monitoring and error reporting for all the installed modules in the R FR 5010 Series 5000 rack frame or the R FR 3010 Series 3000 rack frame.

Expansion will involve adding R CT 5010 Bus Expanders and then R CT 5030 Master controllers where necessary. No two systems are alike and there are some physical limitations that need to be considered when configuring a system. This is mainly in the area of interconnections that relates directly to the physical location and proximity of the racks.

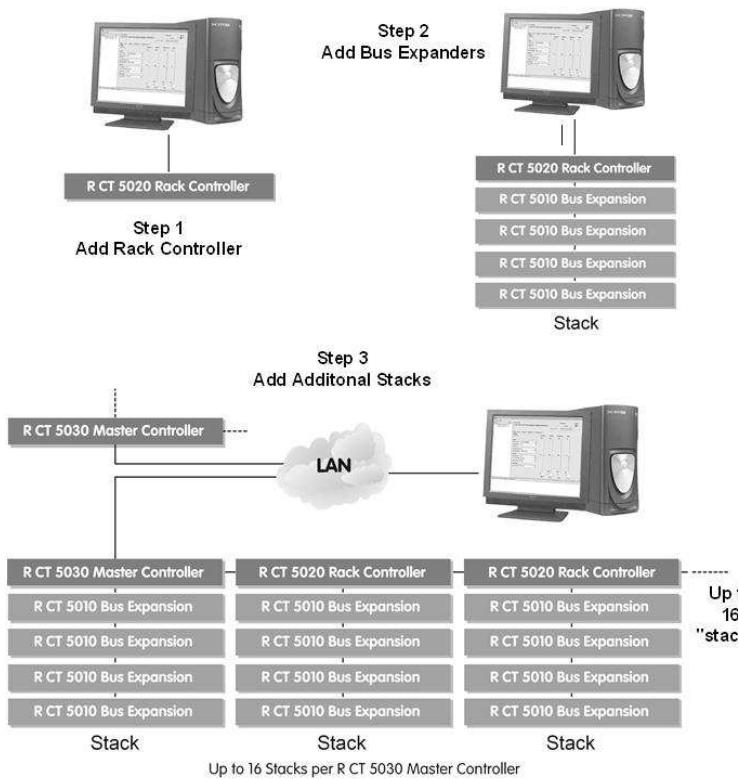
Normally, control systems start with a R CT 5020 controller which provides serial RS 232 connectivity to the host PC. If LAN or network connectivity is required between the PC and controller then it's certainly possible to start with the R CT 5030 Master controller.

When moving beyond a single rack with a R CT 5020 Rack controller there is two choices. Add an R CT 5010 Bus Expander to the second rack or add an R CT 5030 Master Controller.

If the two racks are in very close proximity (mounted on top of each other in the same rack) then the R CT 5010 is the most economical and practical solution for expansion. Up to seven additional racks can be daisy-chained onto a single RCT 5020 / RCT 5030

If the distance between the racks is greater, then the R CT 5030 Master Controller needs to be added to the system in the next step. This will allow RS 485 connectivity between the racks, A single Master controller can support up to 15 x R CT 5020 Rack controllers. Total cable length for all connections is 250m.

We arrange the system into “control stacks”. Which forms a logical expansion path. See below:



Connections

Control Connection

Below is the pin out information for the rear CONTROL port when used in RS 422/485 mode to connect to R CT 5020 controllers in a system.

Typically, a serial cable with straight through connections will be sufficient for this application.

Rear Termination Panel CONTROL Port

Connections for RS 422/485

Pin Number	Connection	Pin Number	Connection
1	GND Shield	6	GND
2	TX A	7	TX B
3	RX B	8	RX A
4	GND	9	GND Shield
5	GND		

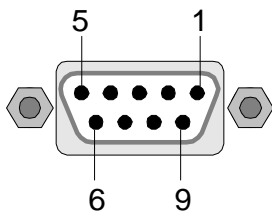


Figure 8. Control Connector

NOTE

We recommend you refer to the RFR 5010 Rack frame manual for full details on this connection as it has multiple uses and can also be configured for RS 422 operation.

Service Connection

The R CT 5030 CardModule has a RJ 12 connector on the front of the PCB. This is designed for local connection of a PC running the LYNX control system software for testing / engineering purposes.

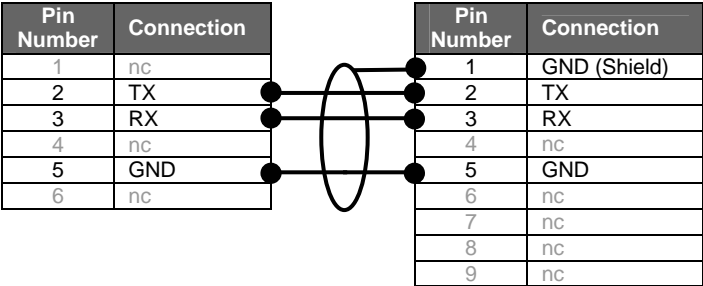
This connection can also be used as a low level terminal interface for engineering purposes, please refer to the switch settings section.

This is a serial RS 232 connection and wiring details for the cable are shown below. (max length 10m)

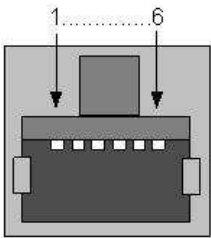
This connection can be used while the main control software is running on the CONTROL connection.

RJ 12 Connector

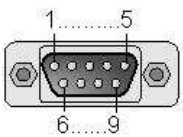
9 Pin D Male (PC)



PCB Mounted RJ12

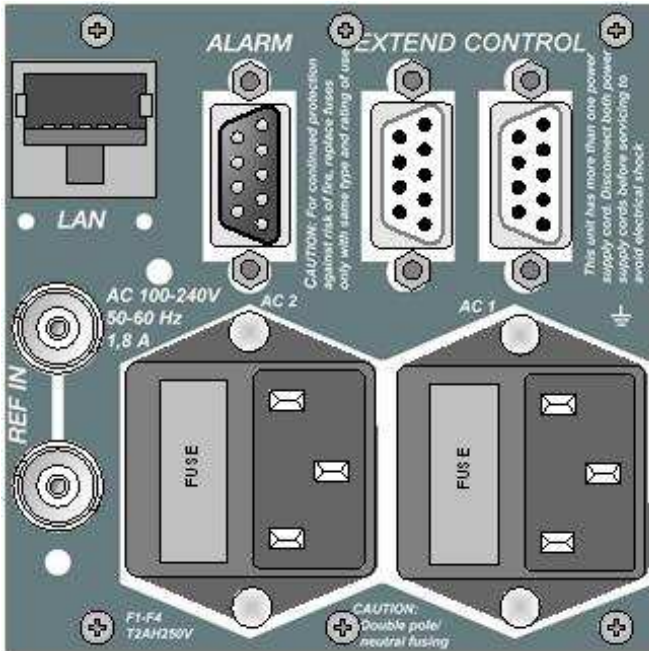


Cable Connector



System Connections

All external connections to the controller are made through the integral termination panel in the rear of the R FR 5010 and R FR 3010 Rack Frames. See below.



The R CT 5030 primarily makes use of the **“Extend”** **“Control”** and **“LAN”** connections. Depending on the system configuration and the number of racks these connections can be used in different ways.

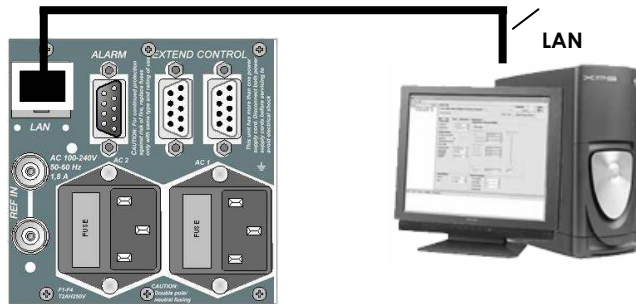
Note. More detail is available on all connections available on the termination panel on the R FR 5010 and R FR 3010 reference manuals.

Configuration Examples

Below we have shown the connections that are used for the various stages of system expansion. This is provided to show examples on how to use and configure the controller's external connectivity.

Single R CT 5030 Controller System.

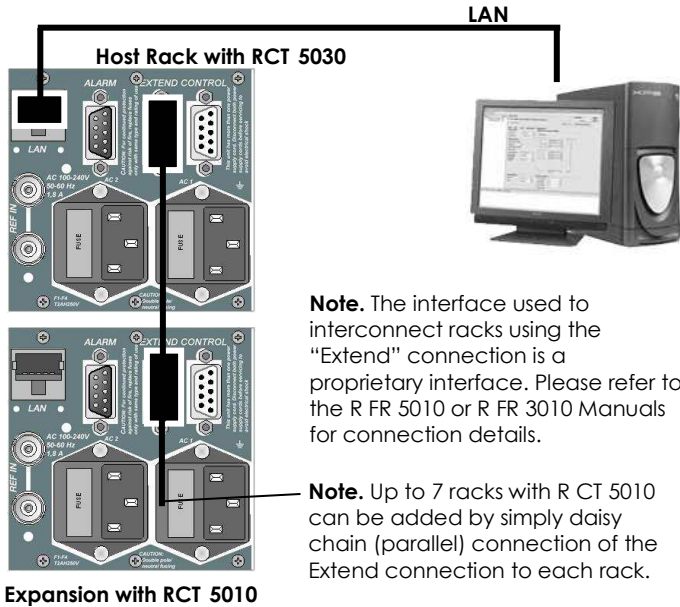
This simply involves connecting the **LAN** port to the LAN connection on the PC running the LYNX Control system software application.



Note. It may be necessary to configure the RCT 5030 for operation over the LAN, Please refer to the Controller Configuration section of the manual.

R CT 5030 used with R CT 5010

The RCT 5030 functionality can be extended into additional racks using the R CT 5010 Bus Expander. This is the most economical solution.

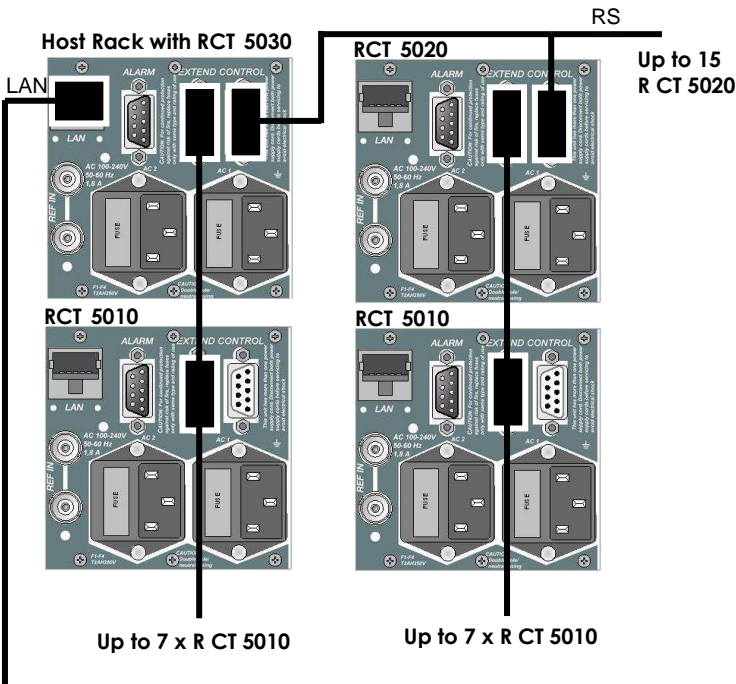


When using the R CT 5010 is it necessary to have the racks in very close proximity [preferably stacked on top of each other in the same 19" rack] as the max length of the cable to interconnect the racks is very limited. (1.5m). If larger distances are required between racks then the use of multiple R CT 5020 Rack controllers is recommended.

Note. The RCT 5030 needs to be configured to work with the R CT 5010 Bus Expander Please refer to the switch setting section of this manual for details.

R CT 5030 used with R CT 5020

To expand the system beyond the eight racks possible in one “stack” using R CT 5010 Bus Expanders it is necessary to add additional RCT 5020 Rack Controllers to the system.



Note. Maximum scale for a single R CT 5030 is 15 x R CT 5020 Rack Controllers. Further expansion is achieved by adding a second R CT 5030 Master controller with connecting into the same LAN

Note Please refer to the R FR 3010 or R FR 5010 rack frame manuals for cable wiring information.

Installation



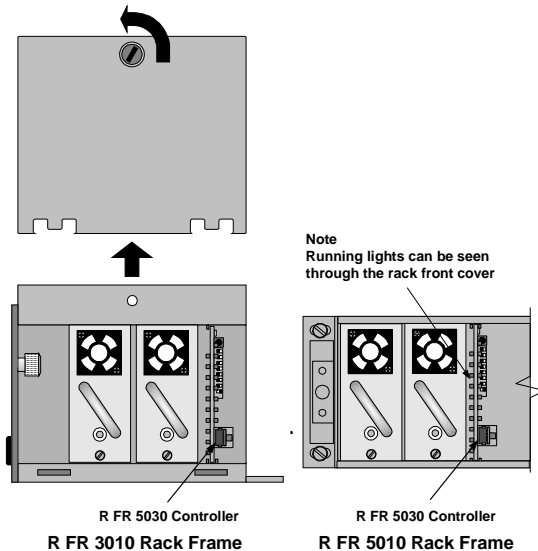
Caution

The Controller card is shipped in a protective anti-static bag. Please take suitable precautions to avoid static discharge onto any part of the PCB or components when handling module or serious damage could result.

The R FR 5010 Card frame and the R FR 3010 Card frames both have a slot configured for the R CT 5030 Controller and the card is simply plugged in where shown.

To connect the Front 9 Pin Sub D service connector on the R FR 3010 please insert the cable inside the box into the RJ12 connector on the front edge of the R CT 5020.

Note. The RCT 5020 supports hot swapping so there is no need to remove power from the system to install the card.



Settings and Control

The R CT 5030 has integral switches that are used for configuration of the controller.

Dip Switch Settings

Below the switch settings for the 8-position dip-switch are defined. (see fig 2) Switch function is described in more detail after the table.

Switch	Setting	Function
1	ON	For Future Use
	OFF	For Future Use
2	ON	For Future Use
	OFF	For Future Use
3	ON	For Future Use
	OFF	For Future Use
4	ON	For Future Use
	OFF	For Future Use
5	ON	For Future Use
	OFF	For Future Use
6	ON	For Future Use
	OFF	For Future Use
7	ON	For Future Use
	OFF	For Future Use
8	ON	Service connector: X-Board terminal
	OFF	Service connector: Control interface

Switch Function Detail

Switch 1– Reserved for future use

Switch 2 – Reserved for future use

Switch 3 – Reserved for future use

Switch 4 – Reserved for future use

Switch 5 – Reserved for future use.

Switch 6 – Reserved for future use.

Switch 7 – Reserved for future use.

Switch 8 – This switch selects the function of the front side RJ 12 service connection. Selecting **ON** will enable direct connection to the X-Board PC

using the simple terminal interface. Selecting **OFF** will make this connection active for use with a PC running LYNX control software and will enable control of the stack connected to the R CT 5030 using this port.

Rotary Switch Function

There is a small 16 position rotary switch located on the PCB (see fig 2). This is used to select the controller's physical address. When expanding the system beyond a single controller (R CT 5020 or R CT 5030) it is important for each controller to have a unique address. Switch is set with a small flat screwdriver.



IMPORTANT. The RCT 5030 and all connected R CT 5020 in a system must have a unique physical address.



IMPORTANT. The RCT 5030 must have the address 0 on the rotary (Hex) switch to ensure proper operation in combination with R CT 5020 controllers

Factory Preset Condition

The R CT 5030 is delivered with stored presets for the following functionality.

Address: **0**

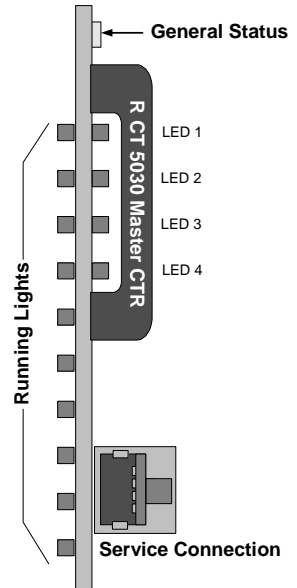
Switch 8: **OFF** Front RJ12 set for Control
(unused switches are set to OFF)

No further adjustments are needed if this is the functionality desired.

Alarm/LED Status Indicators

The R CT 5030 module has LED indicators that serve as alarm and status indication for the module. Function is described below.

The Indicators are found on the front edge of the module PCB. The running lights are visible through the rack cover.



Running Lights

There are 10 "running lights" stacked on the left hand side of the PCB. Operation of these lights can be configured in the control system but typically these will [cycle up/ all switch off / cycle up] while the controller is operating normally.

The running lights are visible through the Series 5000 Rack cover.

General Status LED

There is single tri-color general status LED on the top of the module. This is used to indicate the general status of the rack and the installed modules.

LED Color	Indication
Green	Indicates normal operation
Yellow	Reserved for future use
Red	No control connection to rack power supply

Controller Status LED`s

A stack of 4 LEDS (LED1...LED4) are used to indicate controller status. Function is described below.

LED Number	Indication
1	Hotsync ON *
2	Hotsync SAVE *
3	Green if service connection is active on front RJ12 service connection
4	Green if CONTROL port is active

**Please refer to the Hotsync section of the manual for details on this function*

Controller Removal

The R CT 5030 Controller supports hot swapping. There is no need to remove power from the rack to exchange the controller (**We recommend you observe standard precautions to prevent static discharge onto the PCB while handling the unit as this may result in damage**)

Removal and insertion of the controller will have no effect on the normal operation of the installed Modules, these will operate as previously configured before controller removal, and will resume this mode of operation when a new (and different) controller is installed in its place. All configuration settings are stored in the individual module flash ram storage.

While the rack will operate normally, naturally control of the rack will not be possible when the controller is removed. If R CT 5010 Bus Expanders or R CT 5020 Rack Controllers are connected to the R CT 5030 controller then these will also no longer be accessible to the control system.

If the system is configured with multiple R CT 5020 controllers in multiple stacks then **only** the stack with the RCT 5020 controller removed will not be accessible from the control system, all remaining stacks will appear as normal on the control system.

NOTE *If hot swapping an R CT 5030 with a new unit we suggest you duplicate all the switch settings on the new unit before installation to ensure a problem free exchange.*

When inserting the new R CT 5030 it will automatically initialize and start running. After a short boot procedure the control software will detect the presence of the new controller and all modules attached will be accessible from the control system.

Controller Configuration

The controller supports configuration using any standard Internet browser (IE, Netscape etc). The controller has a factory preset IP address of:

192.168.1.160

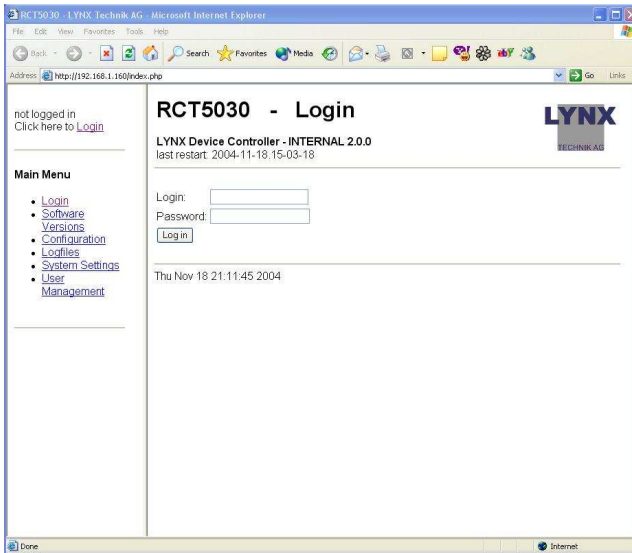
Using this IP address in your browser will access the controller configuration.

Note

While this address will be suitable for most installations there may be instances where this IP address clashes with existing addresses or violates a network rule. The IP address can be changed. Please refer the section "system settings" for changing the default IP address.

Login

When connected you will be presented with the main login screen.



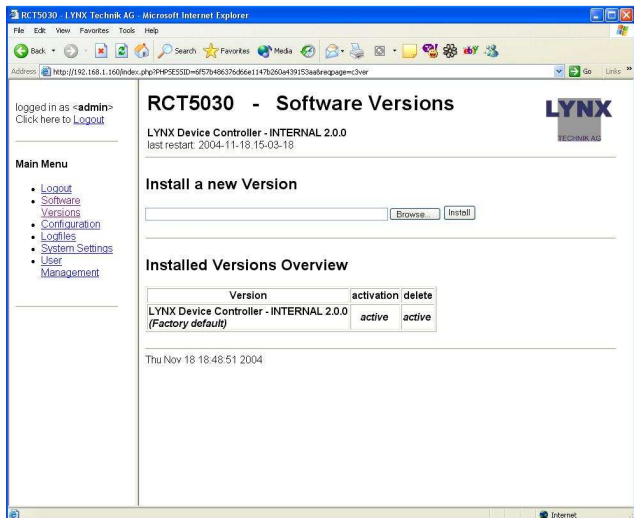
Default login name and password is below.

Login: **admin**
Password: **lynx\$admin**

Note. Login name and passwords can be managed with "User Management" please refer to this section for more details

Software Versions

Clicking on this link in the browser will display the following screen:



There will be a list of the versions installed on the controller. New software versions can be uploaded and installed on the controller from your PC.

Configuration

Clicking on this link will display the controller configuration. See example below:

key	value	explanation
COLLECT_MAINTENANCE_INFORMATION	default: FALSE	collect a large amount of internal information in the logfile.txt. This switch should only be set to TRUE on specific request by LYNX service personnel. It will generate a very large logfile.txt, which should be sent to service@lynx-technik.com for further analysis, together with a detailed description of the problem. NOTE that this switch will implicitly fall back to FALSE after running the application once. So you should (1) set this switch to TRUE, (2) run the application once and reproduce the problematic behaviour in question, (3) terminate the application, (4) collect all files named logfile.* from the installation directory and send them to service@lynx-technik.com, and finally (5) restart the application
FACTORYDEFAULT_VIDEO_REFERENCE	default: (default)	Select factory default source of reference input. This setting (if modified from the empty default) will override the module's factory default setting for the source of video reference. Applies to Series5000 CardModules with Video Reference Input only, such as PVD5000, PVD5005, CAD5111, CAD5112, CAD5131, CDA5011, ...) Supported values: intern - take reference from rack distribution extern - take reference from modules backpanel off - no reference (for selected modules only) (default) - module-specific (equal to 'intern' for most modules)
LOGFILE_MAX_BACKUP	default: 8 range: [0,100] 8	Whenever the application is started, a new logfile (filename: logfile.txt) will be created to log all messages during runtime. An existing logfile will be renamed to "logfile.1.txt". If such a file "logfile.1.txt" already exists, it will be renamed to "logfile.2.txt" and so on. This variable LOGFILE_MAX_BACKUP specifies the maximum index that will be used in this chain. Logfiles dropping off the end of this chain will be deleted.
MAX_RACK_NUMBER	default: 4 range: [0,8] 4	maximum number of RCT5020/RCT5030 devices on the RackBus. RackBus addresses from 0 to MAX_RACK_NUMBER-1 will be detected. The RackBus address is selectable with the rotary switch on the board. No two devices on the RackBus can have the same address.

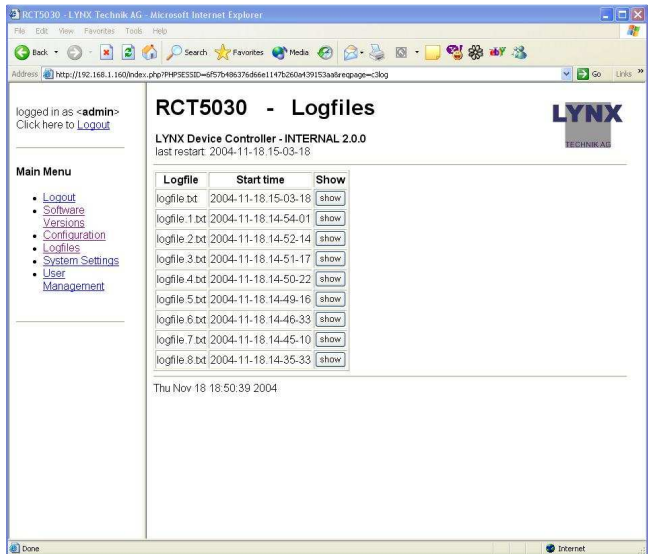
(NOTE: This will restart the server application)

An explanation of each parameter is made on screen, and making necessary changes is simple. "Apply changes" will restart the local server application.

Logfiles

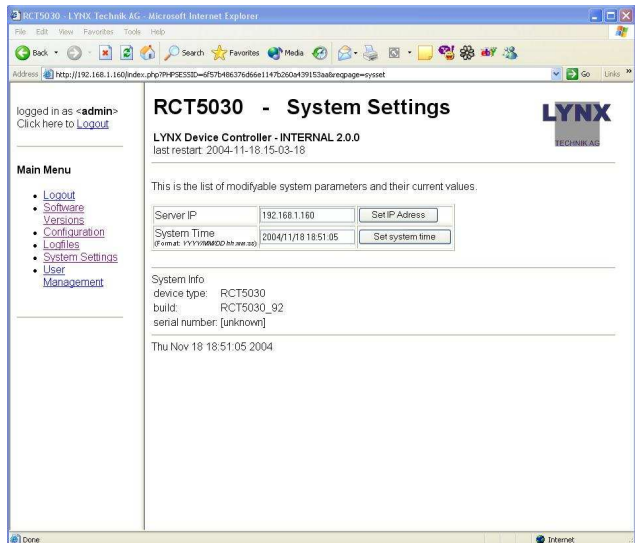
The system has powerful logging capabilities and clicking on the logfiles link will enable access to view the stored logfiles. See below:

Clicking on the "show" button will display the stored logfile



System Settings

This is where you can change the IP Address and controller PC system time. See Below:



Note.

If there is a conflict with the default IP address and your current network then you naturally cannot access this configuration screen to make IP changes. There are two possible ways to connect to the system to gain access to change the IP address:

- 1.) Connect the LAN connection directly to the PC and bypass any hubs or in house networks this will give access and you can modify the IP address under "settings" as shown above.
- 2.) Use the Terminal Interface. The RCT5030 has a terminal interface. This is a very low level serial interface for some simple configuration tasks. It works completely without the LAN connector.

Connect a cable from the PC com1 port to the front side service connection.

Start a standard terminal program on your PC (anything will suffice) port configuration:

Speed:	38400
Bits:	8
Parity:	none
Stopbits:	1
FlowControl:	Off

NOTE: As a convenience, the LYNX Desktop Controller SW installs a file named LynxSerial.ht (default location: C:\Program Files\Lynx\c3_local\LynxSerial.ht). This is a ready-to-use configuration file for the Microsoft HyperTerminal program. If the HyperTerminal program is installed on your Windows-PC, double clicking this file will open up a correctly configured connection on **COM1**.

In the terminal window on the PC you should see a on screen prompt (hit the RETURN key once if you do not see it)

Here is a list of the available commands at this prompt:

resetIP - reset IP-address to factory default.
setIP xxx.xxx.xxx.xxx - set IP-address.
resetPW - reset password of user <admin> to factory default
help - print this help page

- On that prompt, you simply type one of the listed commands and hit RETURN.

User Management

This link enables the management of user names and passwords for the system. See below:

logged in as **admin**
Click here to [Logout](#)

Main Menu

- Logout
- Software
- Versions
- Configuration
- Profiles
- System Settings
- User Management

RCT5030 - User Management

LYNX Device Controller - INTERNAL 2.0.0
last restart: 2004-11-18 15:03:18

Register new user

username
password
retype password

Registered users

Username	Change Password	Delete
admin	new password <input type="text"/> retype password <input type="password"/> <input type="button" value="Change password"/>	<input type="button" value="Delete user"/>
ctrl	new password <input type="text"/> retype password <input type="password"/> <input type="button" value="Change password"/>	<input type="button" value="Delete user"/>

Thu Nov 18 18:51:28 2004

There are two levels of user for the system:

Admin – this user is the system administrator who has access to all functions and can reconfigure the controller using this interface.

Ctrl – these are normal users who will use the PC graphical user interface to monitor and control the system. Up to three users have access to the control system at the same time.

Note: Access of more than three users will be provided with the optional LYNX Master SW Package

LYNX Control Software

The basic LYNX Control software is supplied as part of the R CT 5030 controller option. This is supplied on CD Rom or can be downloaded from the LYNX homepage (please contact your local distributor).

The Control Software is a comprehensive centralized application which provides for the remote control / status monitoring and error reporting for all modules installed in a system.

System Requirements

The control software is designed to run on a Windows compatible PC. Minimum requirements specified below

PC

IBM compatible PC, Pentium 4 class, 256MB ram
VGA Monitor, CD Rom drive with an available serial port or USB port (*USB to serial adapter required – not supplied*).

Operating System:

Microsoft Windows XP Home/Professional, Windows 2000.

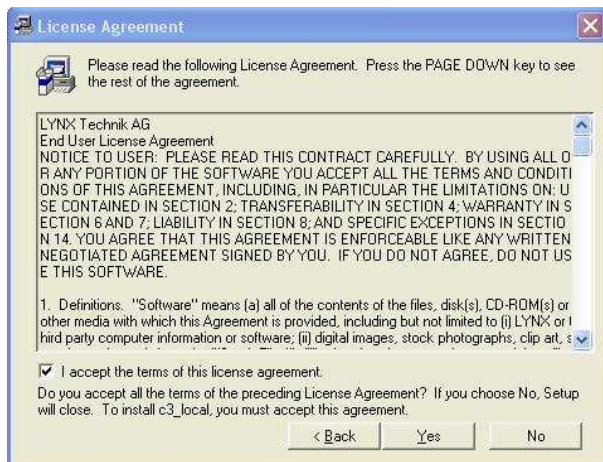
Software Installation

1. Close all other applications on the PC.
2. Insert the software CD into the CD-Rom drive. If the CD-Rom does not start automatically, start the application by clicking **Start, Run** and then type `x:\setup` (where x:\ is the drive letter of your CD-Rom drive)

- The following screen will display, when ready click **Next >** to continue



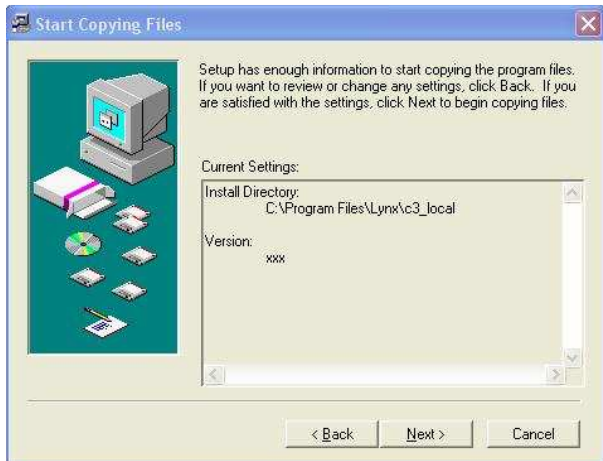
- Read the license agreement and check the box if acceptable. Click **Yes** to continue.



5. Click **Next >** to accept the default installation folder, (*c:\Program Files\Lynx\c3_local*) or use **Browse** to select another destination.



6. Review the information for installation and press **Next >** to install the application. Installer will then start copying files to your hard drive.



7. When complete, you can choose if you would like an icon placed on your desktop and also if you would like the controller application to start now. Click **Finish** to complete the installation.



Starting the Controller Application

If you chose to install the desktop icon during installation, simply click this to start the controller application.



LYNX Controller Icon.

OR navigate to the lynx folder in "program files" and select **c3_local.exe**

The GUI will start and the application will firstly look for the attached controllers, when found the controllers it will report all the attached modules into the GUI and these will be displayed in the folder tree Module (detection is automatic).

If you were not connected to the server already in a previous session then you will see the following window:

The image shows a Windows-style application window titled "LYNX Desktop Controller". The window has a "Configuration" section at the top. Below this, there are three tabs: "Server", "Local COM ports", and "System Events". The "Server" tab is currently selected. Under the "Server" tab, there are two radio buttons: "Local COM ports" (which is unselected) and "Remote Server" (which is selected). Below the "Remote Server" radio button, there are three input fields: "Host" with the value "192.168.1.160", "Username" with the value "ctrl", and "Password" with a masked value "*****". To the right of the password field is a checkbox labeled "remember user info" which is checked. Below these fields, there is a label "Current Server" followed by a yellow button labeled "<not connected>" and a "Login" button. At the bottom right of the window is a "Close" button.

Enter the correct dial in data and click on the Login button. The C3 application will connect to the remote server (R CT 5030).

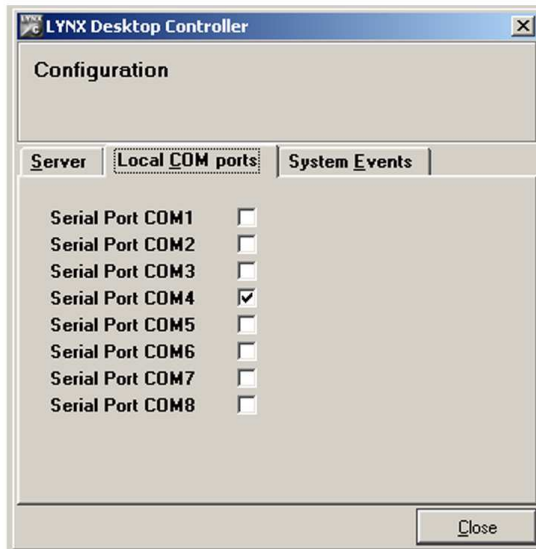
NOTE. If the GUI will display the message:

“Connected to local Serial Ports”

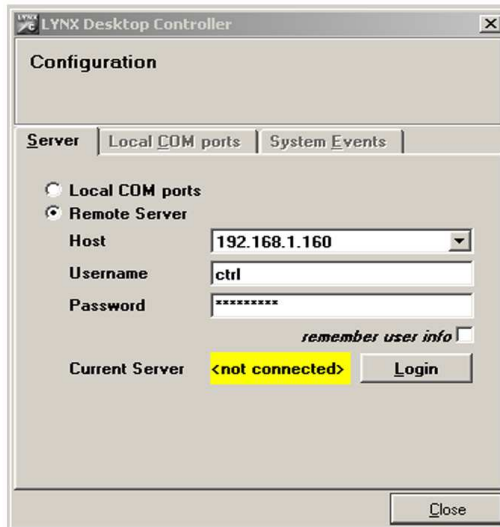
you have to connect to the Remote Server (R CT 5030).

Select the “options” drop down menu and then “configuration”.

The following window will be shown:



Select the “Server” menu:



Select Remote Server and enter the correct dial in data. Click on the Login button and the C3 Application will connect to the Remote Server (R CT 5030).

Default user name: ctrl

Default password: lynx\$ctrl

Software Updates

From time to time we update the software to add support for new modules or new features or correct bugs. Updates are supplied free of charge. You can contact us directly or check our FTP site <ftp://lynx-technik.com> for the latest software releases:

ftp://lynx-technik.com/c3_local for the c3_local GUI control SW

ftp://lynx-technik.com/c3_server for the R CT 5030
administration SW

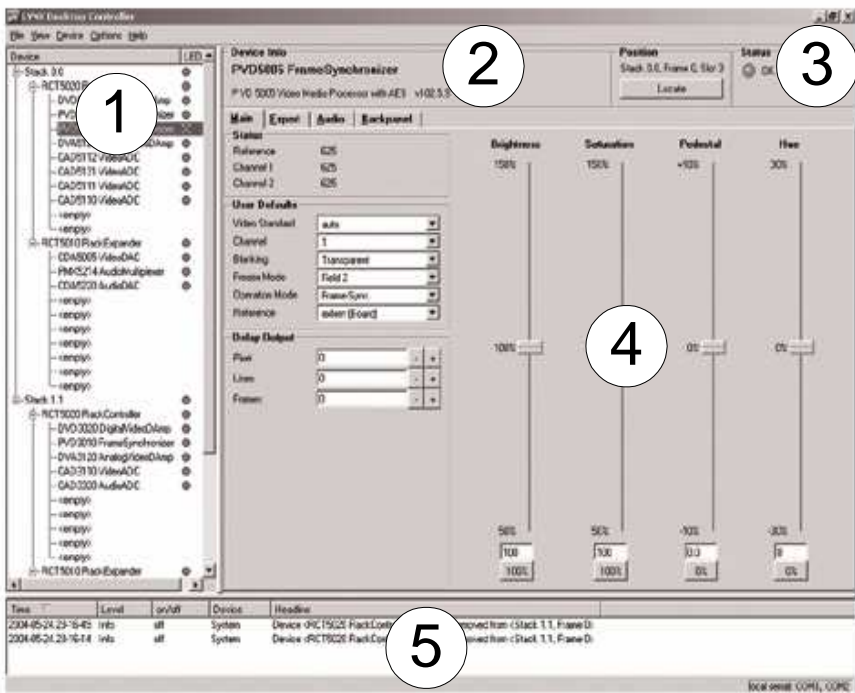
Reporting Problems

If you are experiencing problems with your installation please contact us for assistance. We will require a copy of a log file that is maintained by the system that can be found in the **C:\Program files\Lynx\C3_local** directory. The file is called **logfile.txt**. We will ask you to E-Mail this file with a brief description of the problem and also any steps we can use to duplicate the fault. Send messages to :

Support @ lynx-technik.com

Software Operation

The LYNX Control Software is intuitive and simple to use, presented in a familiar Windows style layout. It is beyond the scope of this manual to provide detail on each individual control available for all supported modules. This is intended as an introduction to the general layout and the use of the control GUI.



The above screenshot shows the normal layout of the control system GUI. The descriptions below provide more detail on each section of the GUI and its operation.

1

This area is organized like a standard windows folder tree and is where all controllers and modules detected by the system are displayed. The modules attached are arranged under each controller.

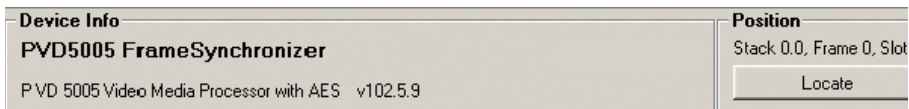
- Clicking on any device in the folder tree will display the associated GUI for control of this device. Next to each device there is a small colored dot. This is a graphic representation of the Alarm LED next to each module listed for easy identification of problems within the system.

Device	LED
Stack 0.0	
RCT5020 RackController	
DVD5002 DigitalVideoDAmp	
PVD5000 FrameSynchronizer	
PVD5005 FrameSynchronizer	
DVA5120 AnalogVideoDAmp	
CAD5112 VideoADC	
CAD5131 VideoADC	
CAD5111 VideoADC	
CAD5110 VideoADC	
<empty>	
<empty>	
RCT5010 RackExpander	
CDA5005 VideoDAC	
PMX5214 AudioMultiplexer	
CDA5220 AudioDAC	
<empty>	
<empty>	
<empty>	
<empty>	
<empty>	
<empty>	

- Levels can be collapsed and expanded so only the information required is displayed in the folder tree. This is useful for systems with a large number of racks and modules.
- If a module is removed or added to the system then this will be detected automatically and added / removed from the folder tree. This also triggers an event in the error log (5) to indicate when this change was made to the system.

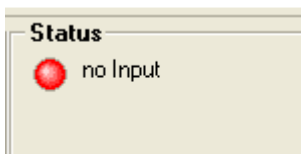
2

This is the main title area where the description of the module can be found as well as details on its physical location in the system (Rack number and Rack Slot)



3

This area displays the status of the module and describes any reported next to the colored dot (which is also a mirror of the module LED)



Locate Function

For larger systems which may have multiple cards of the same type in a single rack, or multiple racks in a larger system we have added a useful utility which will help to physically locate a suspect module in a rack quickly.

When Locate is selected the status indicator on the GUI and the alarm LED will flash yellow in the following continuous sequence.

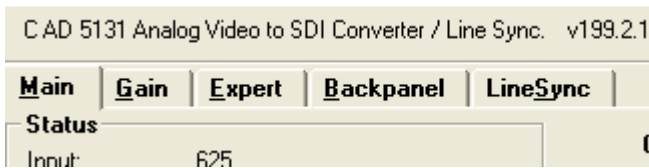
3 short flashes.... Pause.... 3 short flashes ...

The LED continues to flash in this way until the function is turned off in the GUI.

Use of the locate function will not interfere with the normal operation of the module.

4

This is the main control area for the module and changes depending on which module is selected in the folder tree. This area has several tabs that will take you into different areas of control for the Module. The number of tabs will vary depending on the type of module but in general the main tabs you will find are **Main / Expert** and **Backpanel**.

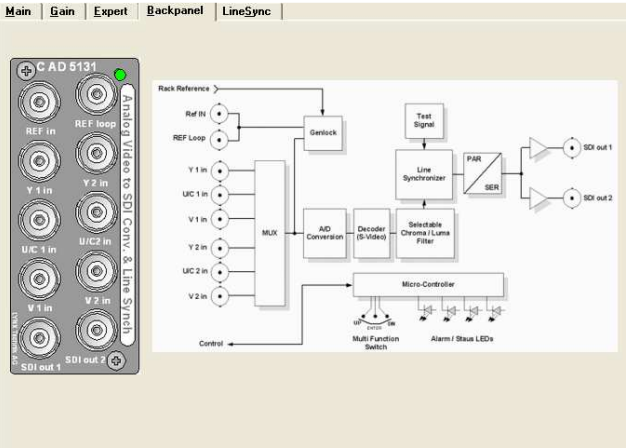


Main. This tab is the default display and brings up the primary controls for the module that are normally the most important controls or parameters changes most frequently. This will consist of a mixture of software buttons, sliders and drop down selections depending on the module selected.

Expert. By default this tab is grayed out and not accessible. To enable this function it is necessary to select the **View** drop down menu and then select **Expert**. This will make the tab accessible. This section normally contains any adjustments or controls that are complex in nature where some deeper technical understanding of the modules function and use is necessary. Only the more complex modules have an "Expert" tab

Note. It is possible to restore the modules function back to the factory defaults using the “restore factory defaults” function.

Backpanel. This tab provides basic information on the physical layout of the connection panel as well as a very basic diagram to indicate the modules basic function / connections.



5

This is the error logging area of the GUI and is the central repository of all errors encountered by the system. Each time an error condition is encountered and entry is automatically made in the log. All entries are time stamped and can be sorted in any of the columns provided by clicking on the column headers.

Time	Level	on/off	Device	Headline
2004-05-24.23:16:49	Info	off	System	Device <RCT5020 RackController> has been removed from <Stack 1.1, Frame 0>
2004-05-24.23:16:14	Info	off	System	Device <RCT5020 RackController> has been removed from <Stack 1.1, Frame 0>

Hotsync

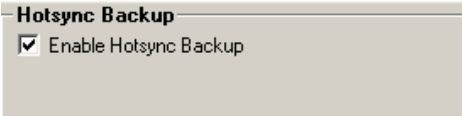
Hotsync is a feature built into the control system that is a way for all module settings and configurations to be stored in the R CT 5020 Controller. Currently all module settings are stored in flash ram within the module which survive module removal / power cycles and even long term storage. The Hotsync function supplements this with another level of convenience.

Once enabled Hotsync will remember all the settings and configurations for all modules installed in a Series 5000 Rack. This way when a defective module is “hot swapped” the settings that were previously used are written into the new module. No switches to set, nothing to calibrate, plug and play convenience.

The Hotsync function is totally automatic and runs in the background. This function requires no user intervention once enabled in the GUI.

Switching on Hotsync

The Hotsync function is off by default and needs to be enabled in the control system GUI. Highlight the R CT 5030 or R CT 5020 in the folder tree and select the “Settings” tab. Here you will see a checkbox to turn this function ON or OFF.



Note. *The Hotsync function is specific to each RCT 5020/RCT 5030 controller and will need to be enabled for each controller of this type used in your system. The RCT 5020/RCT5030 automatically supports any racks with R CT 5010 bus expanders that are connected to a host RCT 5020/RCT5030 controller.*

Hotsync Function

The Hotsync function has useful applications and below describes how the system works under various situations

Board failure “Hot Swap”

Typically when a failure occurs its important to get the system back online as quickly as possible. Some LYNX modules are complex and have a lot of user settings and configurations that have been set for the specific application. Having to manually reset all the parameters in the new card can be time consuming and prone to errors. Hotsync takes care of this automatically. When the system detects a hot swap of a particular card, Hotsync will automatically restore all the previously used settings into the new module. This process is automatic and takes a couple of seconds.

Note. *Please ensure a card of the same type is inserted when performing a hot swap exchange. If a different type card is inserted then Hotsync will detect this as a change to the system and take a backup of the settings stored in the card. It will not try to restore settings to an incompatible or different type card.*

System Changes

During normal operation the settings in the system can be changed or tweaked over time. Hotsync

detects these changes when made and will automatically sync the revised module data into its local memory. At all times the Hotsync stored data is 100% – no user intervention is required.

System Expansion

There are times when additional modules, or a new rack with an R CT 5010 expander added to a system during system expansion. Hotsync will detect any additions and automatically register the new hardware and store the settings – no user intervention is required.

Note. *After a power cycle the Hotsync function will not be functional for 15 seconds. Any modules hot swapped in this period will not be restored with the previous settings; the specific module settings will be used.*

Hotsync Indications

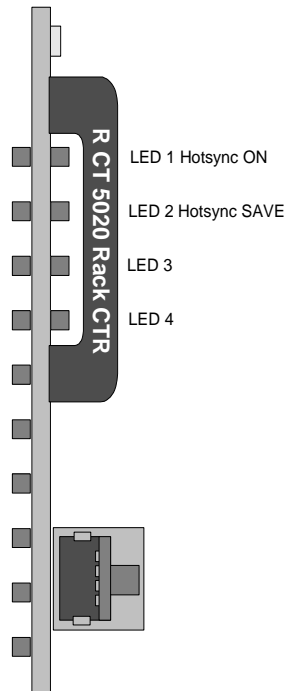
Once the Hotsync function is enabled the process is fully automatic. There are some indicators on the RCT 5020 Controller card that indicate status.

Hotsync ON – LED 1

This LED is illuminated when Hotsync is switched ON. When Hotsync is restoring data to a module this LED will turn off for one second.

Hotsync SAVE – LED 2

When Hotsync is saving new data LED2 will turn on for one second this indicates Hotsync has synchronized its stored settings



with the installed modules. This will happen if settings are changed in any module or if new hardware is added.

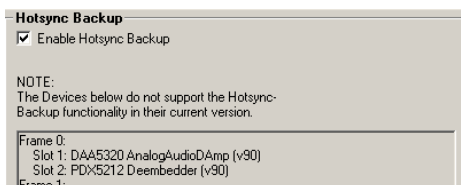
Note

Hotsync is a utility designed to automatically maintain a system which is switched on and operational and makes the assumption that any hardware which is inserted into the system will need the settings restored back into the new module. If there is ever the situation where you would like to replace a card but retain the settings stored in this card then please follow the procedure below.

1. Observe **LED 1** on the Controller, if **ON** Hotsync is enabled. Disable this function in the GUI and confirm this LED is **OFF**
2. Install the new card (hot plug – no need to power down)
3. Switch Hotsync back on using the GUI, **LED 1** will switch back **ON**
4. The setting stored within the new module will be preserved and will automatically Hotsync into the backup file.

Note.

Some older Series 5000 cards will not support the new Hotsync feature. Modules that are not supported are identified in the GUI when the Hotsync function is enabled.



Any modules identified will require re-programming with the latest revision of firmware so this feature is supported. Please contact your authorized dealer or LYNX Technik directly for further assistance.

Restore Factory Defaults

If at any time it is necessary to return the module to the factory default settings this can be done using the **Device** drop down menu. In this menu there is a "Restore Factory Default" function. You will be prompted if you are sure, as this will erase any stored information from the module flash ram.



Software Version Number

To determine the release and version number of the software installed on your system. Pressing F1 or selecting the **Help** drop down menu and then **About** will display the splash screen. Example below.



Specifications *(R CT 5030)*

Electrical Specifications

Operating Voltage	+ 12VDC
Power Consumption	Approx 4.0VA
Safety	IEC 60950/ EN 60950/VDE 0805

Mechanical

Size	283mm x 78mm
Weight	Card module 120g

Ambient

Temperature	5°C to 40°C Maintaining specifications
Humidity	Max 90% non condensing

Supplied Accessories

Documentation	R CT 5030 Reference Manual
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Parts List

Due to the very dense design and miniature surface mount technology the module is not field serviceable. The information for a replacement assembly is below.

R CT 5030 CardModule

Description	Master Controller
Model Number	R CT 5030
Part Number	6.155.003.255

Service

If you are experiencing problems, or have questions concerning your R CT 5030 CardModule please contact your local distributor for assistance.

We offer a fixed cost service exchange program for defective Series 5000 CardModules out of Warranty. Please contact your distributor or check our web site for details on this program.

More detailed information and product updates may be available on our web site:

www.lynx-technik.com

You will also find links to contact us directly for assistance.

Contact Information

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

LYNX Technik can be contacted directly using the information below.

Address LYNX Technik AG
Brunnenweg 3
D-64331 Weiterstadt
Germany.

Website www.lynx-technik.com

E-Mail info@lynx-technik.com

LYNX Technik manufactures a complete range of high quality modular products for broadcast and Professional markets, please contact your local representative or visit our web site for more product information.



Notes