Rail Radio Activator (RRA) Quick Start Guide



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About This Quick Start Guide

This Quick Startup Guide provides setup information for the QuEST Rail Radio Activator (RRA).

Customer Support

For additional support, please call QuEST Sr. Product Manager, Eric Fuehring, at (660) 525-5180 or email at <u>Eric@questrail.com</u>.

Overview

RRA dimensions of the product unit are as shown below in Figure 1. All dimensions are in inches.



2 Connection Diagrams - Figure 2

The RRA now supports QNET protocol. This allows the RRA to connect to the ElectroLogIXS through the QLCP-NET in the CNLCP. The CNLCP and the RRA need to be configured to enable the RRA to be a client to the CNCLP QLCP-NET server.



3 RRA Configuration – Web GUI

Connecting to the RRA

Connect a computer to RRA Config RJ45 (Top/Front) port using a standard ethernet cable.

Configure computer IP address to 172.16.0.102 or higher.

Open web browser and enter 172.16.0.101:8080 to open RRA Web GUI.

The RRA web GUI will open to the "About" tab as shown in Figure 3.



Figure 3

System Start Time – Date and Time the RRA started running. (UTC) – System start time in Coordinated Universal Time. System Uptime – Number of consecutive seconds the RRA has been running. **Current System Time** – Day/Month/Year Hour/Minutes/Seconds (UTC) – Current system time in Coordinated Universal Time. Set System Time – Press the calendar icon to manually set the RRA date and time. Press the 🔿 button to sync the RRA time with the connected computer. Then press the arrow button to save this time to the RRA. **Set System Timezone** – Use the drop-down arrow to choose timezone. Then press the arrow button to save the timezone to the RRA. RRA Software Version – Displays the installed RRA software version. Radio Interface Firmware Version – Displays the installed radio interface firmware version. Main Configuration Version – Displays the current main configuration ID. If none is loaded, "default" is displayed. To save the current configuration, press the download button. (Configuration files are uploaded to the RRA on the "Software Update" tab.) Wayside Controller Configuration Version – Displays the current wayside controller

configuration ID. If none is loaded, "default" is displayed. To save the current configuration, press the download button. (Configuration files are uploaded to the RRA on the "Software Update" tab.)

Inputs->Controls Tab – Figure 4

The "Inputs->Controls" tab is used to change the DTMF Commands, Digital Input Triggers, and System State mapping.

DTMF Commands

- Click "Add New" to create a new DTMF code mapping and set which Control Bit(s) are mapped to this new DTMF code.
- Click the "Pencil Icon" to edit the Control Bit(s) mapped to an existing DTMF code.
- Click the "Trash Can Icon" to delete a DTMF code and mapping.

Digital Input Triggers

• Click the "Pencil Icon" under the "Digital Input Triggers" section, to edit the Control Bit(s) mapped to each input.

• Add Mnemonic name for each Digital Input by clicking in the Input ID's Mnemonic Cell and typing in the user specified name.

System State

0

• Click the "Pencil Icon" under the "System State" section, to edit the Control Bit(s) mapped to the Health status of the RRA.

172.16.0.101:8080	× +		✓ - □
	A Not secure 172.16.0.101:8080		🖻 🕁 🗉 😐 🗯 🖬 🥵
	RADIO ACTIVATOR		Link Status 🧬
About Inputs -	> Controls Indications -> Outputs	Wayside Controller IO Monitoring System Properties	Software Update Log Files
	DTME Commands		+ Add New
	Command	Control Bit/s)	Actions
	4321#	1-256	
	21#	4	2.1
	22#	194,196,198,200	2 B
	51#	196	2 T
	52#	194	2 F
	1234#	193	× +
Digital Inp	out Triggers		
Input ID	Mnemonic	Control Bit(s)	Actions
NVIA_1			1
NVIA_2			1
NVIA_3			1
NVIA_4			1
NVIA_5	input #5		1
NVIA_6			1
NVIB_7			1
NVIB_8			1
NVIB_9			1
NVIB_10			2
NVIB_11			1
NVIB_12			1
	System State		
	State	Control Bit(s)	Actions
	HEALTH		1
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Figure 4

Indications->Outputs Tab – Figure 5

Audio Clips

- \circ Click the "Add New" button and the Audio Clips "Pencil Icon" to
 - Upload new Audio Source File ("Add New")
 - Edit the mapping of the digital Output Indications Bit(s). ("Pencil Icon")
 - The Conditions drop-down menu allows a selected audio file to be played if the link between the RRA and Wayside controller is down.
 - !! NOTE !! This only is applicable when the RRA is configured for Genisys protocol to the Wayside controller. When the RRA is connected via QNET protocol, this audio file will play if this QNET link is down but not if the QNET server's link to the wayside controller fails.
- Click the Audio Clips "Note" icon to force playback of the Audio file loaded.

Digital Outputs & Relay Outputs

- Click the Digital Outputs or Relay Output "Pencil Icon" to map Digital Outputs or Relay Output to Indication Bits.
- Add Mnemonic name for each Digital Output or Relay Output by clicking in the Output ID's Mnemonic Cell and typing in the user specified name.

	L RADIO ACTIVATOR			Link Statu
t Inputs	> Controls Indications -> Outputs Wa	yside Controller IO Monitoring	System Properties Software Up	date Log Files
Audio Cl	ips			+ Add New
ID	Source File	Indication Bit(s)	Conditions	Actions
1	2sw nor loudnessNorm13.wav	4	None	🖌 🛊 💰
2	2sw rev loudnessNorm13.wav	5	None	🖌 🖬 🖌
3	5sw nor loudnessNorm13.wav	7	None	📈 🗐 J
4	5sw rev loudnessNorm13.wav	8	None	🗡 🗰 🖌
5	Crossing activation confirmed.wav	1	None	🕜 🗰 I
6	Crossing deactivation confirmed.wav	2	None	🕜 🗰 I
7	Failed Link.wav		Link Down	1 1 1

Digital Ou	tputs		
Output ID	Mnemonic	Indication Bit(s)	Actions
NVOA_1			1
NVOA_2			× .
NVOA_3			1
NVOA_4	2SW NOR	4	1
NVOA_5	2SW REV	5	1
NVOA_6			1
NVOB_7	5SW NOR	7	1
NVOB_8	5SW REV	8	×1
NVOB_9			1
NVOB_10			1
NVOB_11			1
NVOB_12			1
Polov Outr	t		
Relay Outp	at		
Output ID	Mnemonic	Indication Bit(s)	Actions

Figure 5

Wayside Controller Properties – Figure 6

The Wayside Controller tab allows the user to modify the communication settings to the Wayside Controller.

Note: When using QNET protocol, the Wayside Controller IP address setting should be the IP address of the QLCP-NET server.

When connected to the RRA, the current settings will be populated in the Current Values column. Any mismatch between the New Values and Current Values will be highlighted in Yellow until the Apply Changes button is pressed.

Genisys and QNET protocols are supported.

	ACTIVATOR						Link Status 🦸
About Inputs -> Contro	s Indications -> Outputs	Wayside Controller	IO Monitoring	System Properties	Software Update	Log Files	
Ways	de Controller Propert	ties					
Propert	y Ne	ew Value		Current Value			
Protoco	u (GENISYS	~	QNET			
Unit Ad	dress 1			1			
IP Addr	ess 1	92.168.0.100		192.168.0.100			
Port	5	54321		54321			
Control	Words 6	54		64			
Indicati	on Words 6	54		64			
Poll Int	erval (ms)	000		1000 ms			
Recall I	nterval (ms)	2000		2000 ms			
Use Sec	ure Poll? f	false	~	false			
Use Co	ntrol Checkback?	false	~	false			
	Apply Changes						



System Properties – Figure 7

The System Properties tab allows the user to configure each ethernet port address.

Once a connection is made, the current values are shown in both the "Current Value" and "New Value" columns. Once a change is made in the "New Value" column, that change is outlined in yellow.

Click the Apply Changes button to apply new setting.

NOTE: If the configuration IP address is changed, the user must reconnect to the RRA using the new IP address.

The System Properties tab also allows the user to configure the radio frequency.

Click the Apply button to apply new setting.

IL RADIO ACTIVATOR				
ts -> Controls Indications	-> Outputs Wayside Controller IO Monitoring	System Properties	Software Update	Log Files
21				
Ethernet Interface	- Wayside Controller (MAC: IC:AE:3E:C0:0	JU:U4)		
Property	New Value	Current Value		
IP Address	192.168.0.101	192.168.0.101		
Netmask	255.255.0.0	255.255.0.0		
Gateway	192.168.0.1	192.168.0.1		
Apply changes				
Ethernet Interface	- Configuration (MAC: 00:D0:69:53:2F:3E))		
Ethernet Interface Property	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value	Current Value		
Ethernet Interface Property IP Address	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value	Current Value		
Ethernet Interface Property IP Address	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101	Current Value 172.16.0.101		
Ethernet Interface Property IP Address Netmask	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0	Current Value 172.16.0.101 255.255.255.0		
Ethernet Interface Property IP Address Netmask Gateway	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0	Current Value 172.16.0.101 255.255.255.0		
Ethernet Interface Property IP Address Netmask Gateway Apply Changes	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0	Current Value 172.16.0.101 255.255.255.0		
Ethernet Interface Property IP Address Netmask Gateway Apply Changes	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0	Current Value 172.16.0.101 255.255.255.0		
Ethernet Interface Property IP Address Netmask Gateway Apply Changes	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0	Current Value 172.16.0.101 255.255.255.0		
Ethernet Interface Property IP Address Netmask Gateway Apply Changes	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0	Current Value 172.16.0.101 255.255.255.0		
Ethernet Interface Property IP Address Netmask Gateway Apply Changes Radio Property	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0	Current Value 172.16.0.101 255.255.255.0		
Ethernet Interface Property IP Address Netmask Gateway Apply Changes Radio Property Frequency (MHz)	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0 New Value New Value	Current Value 172.16.0.101 255.255.255.0 Current Value 160.665 MHz		
Ethernet Interface Property IP Address Netmask Gateway Apply Changes Radio Property Frequency (MHz)	- Configuration (MAC: 00:D0:69:53:2F:3E) New Value 172.16.0.101 255.255.255.0 New Value 160.665	Current Value 172.16.0.101 255.255.255.0 Current Value 160.665 MHz		

Figure 7

Software Updates – Figure 8

The Software Updates tab allows the user to upload new RRA software, Main configuration files, and Wayside Controller configuration files to the RRA.

Simply drag and drop any of the software files or configuration files into the window and they will be written to the RRA automatically. (QuEST Rail will typically provide CN with the xxx.tar.gz combined RRA software file.)

- RRA main board SW (xxx.deb)
- RI board SW (xxx.hex)
- Combined (RRA main and RI) (xxx.tar.gz)
- Main Configuration (rra-config-xxx.xml) Note: This file must begin with rra-config and end with .xml
- Wayside Controller Configuration (wayside-controller-config-xxx.xml) Note: This file must begin with wayside-controller-config and end with .xml

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\leftrightarrow \rightarrow	C 🟠 🔺 Not secure	172.16.0.101:8080				Ŀ	☆ 🗉 🛄	* 🗆 🌘) E (
	RAIL RADIO AC	TIVATOR						Link Statu	s 🖉
About	Inputs -> Controls	Indications -> Outputs	Wayside Controller	IO Monitoring	System Properties	Software Update	Log Files		
		ſ]			
				_					
			Drop Update/Conf	ig File Here or Click	to Upload				
			Fi	gure 8					

RRA Log Files – Web GUI

The QuEST RRA has logging capabilities built in. The method to access these log files has been updated.

To access the log files, select the "Log Files" tab.

5 Input/Output Monitor Tab – Figure 9

The IO Monitor tab displays the status of the non-vital I/O

WATE CEE	RADIO ACTIVATOR				Link Status 🖉
its -> Controls	Indications -> Outputs	Wayside Controller	IO Monitoring	System Properties	Software Update Lo
igital Inputs	3				
Input ID	Mnemonic	State	Input I	D Mnemonic	State
NVIA_1		HIGH	NVIB_	7	LOW
NVIA_2		LOW	NVIB_	8	LOW
NVIA_3		HIGH	NVIB_	9	LOW
NVIA_4		LOW	NVIB_	10	LOW
NVIA_5		LOW	NVIB_	11	нідн
NVIA_6		LOW	NVIB_	12	LOW
igital Outpu	its				
igital Outpu	its				
Digital Outpu Output ID	Its Mnemonic	State	Outpu	t ID Mnemonic	s State
Digital Outpu Output ID NVOA_1	Its Mnemonic	State LOW	Outpu NVOB	t ID Mnemonic	State
Digital Outpu Output ID NVOA_1 NVOA_2	Its Mnemonic	State LOW HIGH	Outpu NVOB	t ID Mnemonio _78	: State
Oigital Output Output ID NVOA_1 NVOA_2 NVOA_3	Mnemonic	State LOW HIGH LOW	Outpu NVOB NVOB	t ID Mnemonia _7	state LOW LOW
Digital Output Output ID NVOA_1 NVOA_2 NVOA_3 NVOA_4	Its Mnemonic	State LOW HIGH LOW LOW	Outpu NVOB NVOB NVOB	ID Mnemonia _7	state LOW LOW LOW LOW
Digital Output Output ID NVOA_1 NVOA_2 NVOA_3 NVOA_4 NVOA_5	Its Mnemonic	State LOW HIGH LOW LOW LOW	Output NVOB NVOB NVOB NVOB	ID Mnemonia _7	state Low Low Low Low Low
Digital Output Output ID NVOA_1 NVOA_2 NVOA_3 NVOA_3 NVOA_4 NVOA_5 NVOA_6	Its Mnemonic	StateLOWHIGHLOWLOWLOWLOWLOW	Output NVOB NVOB NVOB NVOB	ID Mnemonia _7	State LOW LOW
Digital Output Output ID NVOA_1 NVOA_2 NVOA_3 NVOA_4 NVOA_5 NVOA_6	Its Mnemonic	State LOW HIGH LOW LOW LOW LOW LOW	Output NVOB NVOB NVOB NVOB	t ID Mnemonia _7	sianti State LOW LOW LOW LOW LOW
Digital Output Output ID NVOA_1 NVOA_2 NVOA_3 NVOA_4 NVOA_5 NVOA_6	Mnemonic Mnemonic Relay Output	State LOW HIGH LOW <	Output NVOB NVOB NVOB	Mnemonia 27 8 9 10 11 12	since state Low Low Low Low Low

Figure 9