How-To ConSEL PLUS

Topic: Repeater diagnostics

System version: 7.x Document version: 1.2

Content



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1. Enabling the functionality

The feature is activated using the **Repeater diagnostics** option of the radio server module configurator.

Radioserver configuration - registry										
Status	General	Modules	Advanc	ed Ren	note	License]			
Featur	es Maps	Configu	iration	Events	Log	SNN	/IP	Authorisation		
Database V Configuration storage method										
*						Allowed	l cor	figuration identif	fiers	
local		R	eporting) configu	iration	identifi	er			
🖌 Ra	idio system	(forces cor	nfigurati	on radio	conse	oles for t	he c	lients)		
Re Re	peaters di	agnostics (r	adio sys	tem)						
	overage ma	р								
- Fo	rce an upo	late of con	nected c	lients						
Configuration database									_	
									_	
Enable configuration synchronization										
+										
En En	able radio	servers net	work ad	dresses t	ransla	tion				
									+	

Fig. 1 Diagnostics configuration

If the console configuration server is not the radio server on which this option is being enabled, you must also configure the options of this configuration server by enabling **Repeater diagnostics** (radio system) in the General/Configuration tab.





Radioserver configuration - registry							
Status General Modules Advanced Remote License							
List of modules:							
podstawowy (00) v Remove module Add new Disable module							
Module type:							
MotoTRBO NAI Module V							
Module options:							
Basic Features Advanced Privacy Rep.pos. GOB hist. Rec. outside							
 Radio console Data services (ARS, GPS, etc.) Record sound and message Repeaters diagnostics Do not write to the database Data server Generics Option Board suppor Dynamic programming of reporting AMG 							
Inter-module settings:							
Shared resource settings for NAI modules (MNIS tunnel type)							
Text port 4007 AMBE ports demo							
Save configuration							

Fig. 2 Diagnostics configuration

The result of this configuration should be an additional **Repeater Diagnostics** tile visible in the main window of the console.





$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	ConSE	L Client															
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$	Defin	ed users tabs:															
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Data based		Four consoles		Test		Two consoles an common	d	Two map window	rs						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			봐		봐		봐		a a								
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$	Basic	tabs:															
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Online data		Historical data	•	Numerical repo	orts	Events		Properties		Help		Rad	io control	Repeat	er diagnostics
Radio window: Radio window IPSC												F1 Shift+			Shift+F7		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Radio	s window:															
NAI UPSC NAI CP (M) NAI CP (M) NAI CP (M) Nat CRBO NatorRBO NatorRBO NatorRBO Objects Objects Organization Reverse of the central cent		Radio windo	w IPSC	Radio window	СР	Radio window	CP-M	Radio window B RADIO	ASE	Radio window BA RADIO 2	\SE	Radio RADIO	o window BASE O 3				
Objects editor Property editor Routes editor Layer editor GPS users editor editor Application users editor GPS points editor Beaconse editor Range map Recorder Schedule editor Camera editor editor r7 r8 r9 r10 r11 Shift+F1 Shift+F2 Shift+F3		NAI IPSC		NAI CP (M)		NAI CP (M)		MotoTRBO		MotoTRBO		MotoTF	RBO				
Objects editor Property editor Routes editor Layers editor Event definition editor GPS users editor Application users editor GPS points editor Range map Recorder Schedule editor Camera editor Job ticketing F7 F8 F9 F10 F11 Shift+F1 Shift+F2 Shift+F3 Shift+F9 Shift+F10	Other																
F7 F8 F9 F10 F11 Shift+F1 Shift+F3 Shift+F8 Shift+F9 Shift+F10		Objects editor	Property definition editor	Routes editor	Layers editor	Event definition editor	GPS users editor	Application users editor	GPS point editor	ts Beacons editor	Range	map	Recorder	Schedule editor	Camera editor	Job ticketing	
							Shift+F1	Shift+F2	Shift+F3	Shift+F8	Shift+F9		Shift+F10				

Fig. 3 Main window with Diagnostics tile

2. Tracking of current operation

This feature is available by clicking on the **Repeater diagnostics** tile.







3. Viewing recorded data

This feature is available by clicking on the **Archived data** tile. The requirement for data availability is a properly configured radioserver, or more precisely, unchecking the **Do not save to database** (see section 1)







4. Repeater network load

This feature is available by clicking on the **Numerical reports** tile located in one of the internal tabs.

Concerne												
Numerical repo	orts × +											
lumerical reports												
Simple Advanced Repeaters network usage Schedules												
Reporting object:				Repo	Report period: Report parameters							
System:	172.30.5.74/5	sckmod:1 (CP-M)	_	Day 🔿							
Repeaters:	☑ Repeater ☑ Repeater	3 4		25 - O T 20. 20. 20. Repo © Ir	- środa Time range 22-05-25 22-05-25 rt type: nfrastructure loa		Generate rep					
Report: 172.30.5.74/sckmod:1	Slot1 - count	Slot1 count[%]	Slot1 - time	Slot1 time[%]	Slot2 - count	Slot2 - count[%]	Slot2 - time	Slot2 time[%]	Total - count	Total - time	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1	Slot1 - count	Slot1 count[%]	Slot1 - time	Slot1 time[%]	Slot2 - count	Slot2 - count[%]	Slot2 - time	Slot2 time[%]	Total - count	Total - time	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call	Slot1 - count	Slot1 count[%]	Slot1 - time	Slot1 time[%]	Slot2 - count	Slot2 - count[%]	Slot2 - time	Slot2 time[%]	Total - count	Total - time	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call	Slot1 - count	Slot1 count[%]	Slot1 - time	Slot1 time[%]	Slot2 - count	Slot2 - count[%]	Slot2 - time 4 s 5 s	Slot2 time[%]	Total - count	Total - time	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data	Slot1 - count 	Slot1 count[%]	Slot1 - time 8 s 5 s 0 s	Slot1 time[%] 0.0 0.0 0.0	Slot2 - count 	Slot2 - count(%) 50.0 50.0 0.0	Slot2 - time 	Slot2 time[%]	Total - count 3 2 0	Total - time	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others	Slot1 - count 	Slot1 count[%] 66.7 33.3 0.0 0.0	Slot1 - time 8 s 5 s 0 s 0 s	Slot1 time[%] 0.0 0.0 0.0 0.0	Slot2 - count 1 1 0 0	Slot2 - count[%] 50.0 50.0 0.0 0.0	Slot2 - time 4 s 5 s 0 s 0 s	Slot2 time[%] 0.0 0.0 0.0 0.0	Total - count 3 2 0 0	Total - time 12 s 10 s 0 s 0 s	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others Summary	Slot1 - count 2 1 0 0	Slot1 count[%] 66.7 33.3 0.0 0.0	Slot1 - time 8 s 5 s 0 s 0 s	Slot1 time[%] 0.0 0.0 0.0 0.0	Slot2 - count 1 1 0 0 	Slot2 - count[%] 50.0 50.0 0.0 0.0	Slot2 - time 4 s 5 s 0 s 0 s	Slot2 time[%] 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Total - count 3 2 0 0 5	Total - time 12 s 10 s 0 s 0 s 22 s	0ccupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others Summary Site 2	Slot1 - count 2 1 0 0 	Slot1 count[%] 66.7 33.3 0.0 0.0	Slot1 - time 8 s 5 s 0 s 0 s	Slot1 time[%] 0.0 0.0 0.0 0.0	Slot2 - count 1 1 0 0	Slot2 - count[%] 50.0 50.0 0.0 0.0	Slot2 - time 4 s 5 s 0 s 0 s	Slot2 time[%] 0.0 0.0 0.0 0.0	Total - count 3 2 0 5	Total - time 12 s 10 s 0 s 22 s	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others Summary Site 2 Repeater 4	Slot1 - count 2 1 0 0 	Slot1 count[%] 66.7 33.3 0.0 0.0	Slot1 - time 8 5 5 5 0 5 0 5	Slot1 time[%] 0.0 0.0 0.0 0.0	Slot2 - count 1 1 0 0	Slot2 - count[%] 50.0 50.0 0.0 0.0	Slot2 - time 4 s 5 s 0 s 0 s	Slot2 time[%] 0.0 0.0 0.0 0.0	Total - count 3 2 0 5	Total - time 12 s 10 s 0 s 22 s	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others Summary Site 2 Repeater 4 Group call	Slot1 - count 2 1 0 0 0	Slot1 count[%] 66.7 33.3 0.0 0.0 100.0	Slot1 - time 8 s 5 s 0 s 0 s 7 s	Slot1 time[%] 0.0 0.0 0.0 0.0 0.0	Slot2 - count 1 1 0 0 	Slot2 - count[%] 50.0 50.0 0.0 0.0 100.0	Slot2 - time 4 s 5 s 0 s 0 s 	Slot2 time[%] 0.0 0.0 0.0 0.0 0.0	Total - count 3 2 0 5 5 3 3	Total - time 12 s 10 s 0 s 22 s 11 s	Occupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others Summary Site 2 Repeater 4 Group call Private call	Slot1 - count 2 1 0 0 0 1 0 0 1 1 1 1 1 1 1 1 1 1	Slot1 count[%] 66.7 33.3 0.0 0.0 100.0 0.0	Slot1 - time 8 s 5 s 0 s 0 s 7 s 0 s	Slot1 time[%] 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Slot2 - count 1 1 0 0 1 1 0 1 0	Slot2 - count[%] 50.0 50.0 0.0 0.0 0.0 100.0 0.0	Slot2 - time 4 s 5 s 0 s 0 s 	Slot2 time[%] 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Total - count 3 2 0 0 5 5 3 0 0	Total - time 12 s 10 s 0 s 22 s 11 s 0 s	0ccupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others Summary Site 2 Repeater 4 Group call Private call Data	Slot1 - count 2 1 0 0 0 2 2 0 2 0 0 0	Slot1 count[%] 66.7 33.3 0.0 0.0 100.0 0.0 0.0 0.0	Slot1 - time 8 s 5 s 0 s 0 s 7 s 0 s 0 s 0 s	Slot1 time[%] 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Slot2 - count 1 1 0 0 1 0 1 1 0 0	Slot2 - count[%] 50.0 50.0 0.0 0.0 100.0 0.0 0.0 0.0 0.0	Slot2 - time 4 s 5 s 0 s 0 s 	Slot2 time[%] 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Total - count 3 2 0 5 5 3 0 0 0 0	Total - time 12 s 10 s 0 s 22 s 11 s 0 s 0 s 0 s 0 s 0 s 0 s 0 s 0 s 0 s 0	0ccupancy	
Report: 172.30.5.74/sckmod:1 Site 1 Repeater 3 Group call Private call Data Others Summary Site 2 Repeater 4 Group call Private call Data Others	Slot1 - count 2 1 0 0 0 2 2 0 0 0 0 0 0 0 0 0	Slot1 count[%] 66.7 33.3 0.0 0.0 100.0 0.0 0.0 0.0 0.0 0.0	Slot1 - time 8 s 5 s 0 s 0 s 7 s 0 s 0 s 0 s 0 s 0 s 0 s	Slot1 time[%] 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Slot2 - count 1 1 0 0 0 1 1 0 0 0 0 0	Slot2 - count[%] 50.0 50.0 0.0 0.0 0.0 100.0 0.0 0.0 0.0 0.0 0.	Slot2 - time 4 s 5 s 0 s 0 s 	Slot2 time[%] 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Total - count 3 2 0 0 5 5 3 0 0 0 0 0	Total - time 12 s 10 s 0 s 22 s 11 s 0 s 0 s 0 s 0 s 0 s 0 s 0 s 0	0ccupancy	

Fig. 6 Load statistics





5. Events

Notifications of repeater statuses can be configured in the system using the event functionality. The example below shows the definition of an event of repeater power loss.

🚜 Add/Edit event	k / Jamesa ar a sa da sabi arida a	et administra administra d	·				×		
Event type: Event description: Priority:	Change of digita AC Power Alarm Highest priority	al device status			~ 				
Change of digital device :	status Event con	ditions Event optio		lotifi	cations Reporting				
Digital device:		Filter by object	Se	earcl	ned status:				
	Devices				Statuses				
Cause of generatin	ng type: digital/sta	andard			Temp Alarm Status:Unknown / disabled				
Rap. time pos. type	e: digital/time				AC Power Alarm Status:Unknown / disabled				
Hide inactive type:	Hide inactive type: digital/hide				PA Fan Alarm Status:Unknown / disabled				
Status type: digital,	/standard				PA EEPROM Corruption Type 1 Status:Unknown / disabled				
Monitoring 1 type:	digital/standard				PA EEPROM Corruption Type 2 Status:Unknown / disabled				
Monitoring 2 type:	digital/standard				PA EEPROM Corruption Type 3 Status:Unknown / disabled				
Alarm state 1 type:	: digital/standard				Exciter EEPROM Corruption Type 1 Status:Unknown / disabled				
Alarm state 2 type:	: digital/standard				Exciter EEPROM Corruption Type 2 Status:Unknown / disabled				
Connection state ty	/pe: digital/standa	ard			Exciter EEPROM Corruption Type 3 Status:Unknown / disabled				
Map state type: digital/standard					Receiver EEPROM Corruption Type 1 Status:Unknown / disabled				
Diagnosis state type: digital/standard					Receiver EEPROM Corruption Type 2 Status:Unknown / disabled				
Registration state type: digital/standard					Receiver EEPROM Corruption Type 3 Status:Unknown / disabled				
Work state type: d	igital/standard				PA Voltage Alarm (High) Status:Unknown / disabled				
					PA Voltage Minor Alarm Status:Unknown / disabled		_~		
					Ok	Cancel			

Fig. 7 Event definitions





4 Configuration of radioserver modules	- 🗆 X
Additional configuration: Sound of missed call Transmit beep Time of inform about missed call (sec) Group (grouped consols share a common window) 901 Objects for visualization	Add a radioserver module Remove the radioserver module Remove all modules Import from CSV Export to CSV Save changes Channel dictionaries editors External PTTs config
1 2 3 4 5 6	

Fig. 8 Event definition details





6. Status in the console

The status of selected repeaters can be visualised in the console window. To do this, indicate the appropriate predefined device in the console administration window in the **Hardware object identifiers** field.



Fig. 9 Configuring repeater status visualisation

As a result, you will see a visualisation of the selected device in the console.

Fig. 10 Console view of repeater status





7. Coverage map

In systems with radio GPS position reporting enabled and the **Repeater diagnostics** feature activated, the system automatically builds visualisation of received radio signal levels. This feature is available from the **Coverage map tile.**



Fig. 11 Coverage map

