How to register RTX Repeater

Introduction:

The RTX repeater registration guide is designed to give a detailed overview on how to register and manage RTX repeaters

Main topics:

- Locate automatic
- Manual registration
- Firmware update
- LED indications

Repeater registration options:

There are 2 different ways to register RTX repeater's "Local Automatic" and "Manually"

Local Automatic:

In this mode the repeater registers to the base station with best signal strength, this option is only recommended for single cell systems and Multi cell systems where the repeater is only able to sync with one specific base station.

Manually:

Manual registration is used in most cases when adding repeaters to a multi cell system. Manual registration allows to determine what base stations the repeater must connect to.

Register repeater(s) "Local Automatic":

NOTE: Do not power on the repeaters before they have been added on the base station

NOTE: When adding first repeater the base station(s) will reboot, this is because encryption is being enabled, the same goes if all repeaters is deleted, then the system will reboot to disable encryption.

Step 1: To register repeater(s), navigate to the Repeater page.

Screen shot

Repeaters

Add Repeater

Refresh

Idx	RPN	Name/ IPEI	DECT sync source	DECT sync mode	State	FW Info	FWU Progress

Step 2: Click" Add Repeater" and select "Local Automatic" from the dropdown

Screen shot

Repeater

Name:	
DECT sync mode:	Local Automatical ▼
	Manually
	Local Automatical
Save	

Step 3: Give the repeater a name and press "save"

Step 4: Power on the repeater(s) and registration will start.

When the LED is steady green the repeater is successfully registered.

Screen shot

Repeaters

Add Repeater

Refresh

	Idx	RPN	Name/ IPEI	DECT sync source	DECT sync mode	State	FW Info	FWU Progress
☐	1	RPN09	Repeater 1/ 0298D02668	RPN08 (-26dBm)	Local Automatical	Present@RPN08	39	Off

Check All / Uncheck All
With selected: Delete Repeater(s), Register Repeater(s) Deregister Repeater(s)

PARAMETERS	DESCRIPTION
IDX	System counter
RPN	SINGLE CELL SYSTEM: The base has always RPN00, first repeater will then be RPN01, second repeater RPN02 and third RPN03 (3 repeaters maximum per base) MULTI CELL SYSTEM: Bases are increment by 2^2 in hex, means first base RPN00 second base RPN04 etc., in between RPN01, 02, 03 addressed for repeaters at Primary base and 05, 06, 07 addressed for Secondary base (3 repeaters maximum per base)
NAME/IPIE	Name and IPIE number of the repeater
DECT SYNC MODE	DECT Sync mode – Manually or Automatic
STATE	State of the repeater Enabled/Disabled
FW INFO	Firmware version
FWU PROGRESS	How many percentages of the firmware is loaded / Off if no firmware is being loaded

Register repeater(s) "Manually":

NOTE: Do not power on the repeaters before they have been added on the base station

NOTE: When adding first repeater the base station(s) will reboot, this is because encryption is being enabled, the same goes if all repeaters is deleted, then the system will reboot to disable encryption.

Step 1: To register repeater(s), navigate to the Repeater page.

Screen shot

Step 2: Click" Add Repeater" and select "Manually" from the dropdown

Screen shot

Step 3: Give the repeater a name and press "save"

Step 4: select what base station the repeater needs to register to "DECT sync source" drop down

In this case there are three base stations in the multicell (RPN00, RPN04 and RPN08) and three repeaters can be connected to each base station.

Select the base station the repeater needs to register to.

E.g. RPN04

Screen shot

Step 5: Select the RPN for the repeater.

ERROR: The repeater will choose the first available slot on the selected base station.

RPN x: The repeater connects to RPN x of the chosen base station.

E.g. Base station RPN04 + RPN1 repeater, then the repeater connects to "RPN5"

Screen shot

	Idx	RPN	Name/ IPEI	DECT sync source	DECT sync mode	State	FW Info	FWU Progress
☐	1	RPN02	Repeater 1/ 0298D02668	RPN00 (-26dBm)	Manually	Present@RPN00	39	Off

Check All / Uncheck All

With selected: Delete Repeater(s), Register Repeater(s) Deregister Repeater(s)

Firmware update:

The repeaters are updated over air.

Step 1: Navigate to Firmware Update page

Step 2: Enter "Firmware Update server address", "Firmware path" and DECT402x firmware version

Screen shot

Firmware Update Settings

Firmware update server address: _____

Firmware path: _____

Terminal file path: _____

Type	Required version	Required branch	Startup picture
Update Base Stations	0	0	
8200	0	0	
8633	0	0	
8632	0	0	
8630	0	0	_____
8631	0	0	
8930g	0	0	
DECT4024	0	0	

Save/Start Update

PARAMETER	DEFAULT VALUE(S)	DESCRIPTION
FIRMWARE UPDATE SERVER ADDRESS	Empty	IP address or DNS of firmware update files source **Valid Inputs:** AAA.BBB.CCC.DDD or \<URL\> **Example:** firmware.rtx.net or 10.10.104.41
FIRMWARE PATH	Empty	Location of firmware on server (or firmware update server path where firmware update files are located). Example: RTXFWU
TERMINAL FILE PATH	Empty	Location of image (folder where background and start up image are located). Example: Images
REQUIRED VERSION	Empty	Version of firmware to be upgraded (or downgraded) on handset, repeater, or base station. **Valid Input(s):** 8-bit string length. E.g. 400 **Note: Value version 0** will disable firmware upgrade **Note:** Two handset types will be serial firmware upgraded. First type 8630 then type 8430.
REQUIRED BRANCH	Empty	Branch of firmware to be upgraded (or downgraded) handset, repeater or base station. **Valid Input(s):** 8-bit string length. E.g. 01

NOTE: Repeater firmware do not follow the normal version numbers.

LED and button:

Power cycle

The repeater basically has two modes: Subscribed or not subscribed.
When powered up without a registration, the following applies.

Power	Press	Action
OFF	00s < x < XXs	Nothing
ON	00s < x < 05s	Nothing
ON	05s < x < 300s	Search for suitable base and start registration procedure if a suitable is found

When powered up with a registration, the following applies:

Power	Press	Action
OFF	00s < x < XXs	Nothing
ON	00s < x < 60s	Search for source base/repeater
ON	60s < x < XXs	Search for any base/repeater in the system

Button

In the below table the action of the button press is presented.

Button	Press	Action
1	00s < x < 02s	Nothing
1	02s < x < 06s	Delete registration Old registration is deleted, and a new registration procedure is started.
1	18s < x < 60s	Enable or disable repeater monitor beep tone in handset during call.
1	60s < x < XXs	Nothing

LED

LED	Indication	Action
GREEN	Off	Power Off
GREEN	Slow flash	Unlocked, Searching for base station
GREEN	Double flash	Registration/subscription mode and searching for open base station – registering procedure.
GREEN	Steady on	Locked to base station and ready for use - idle
GREEN	Short flash	Handset connection setup. (only used on RTX4022)
RED	Off	No handset relayed by repeater
RED	n flash	n handset relayed by repeater
RED	Steady on	1. Registration procedure timed out after 5 min. 2: When key is held pressed the LED will light up in 2 sec. to indicate that releasing the key will delete registration, LED turns off after 4 more sec.
RED/GREEN	Flashing Red/Green	Recovery mode – repeater is locked to base station/repeater without repeater mode activated. 1: Sync. Source base station/Repeater not found (Manual mode). 2: Timeout during RPN allocation due to busy base station/Repeater.

Daisy chain:

RTX4022P and RTX4024 support Daisy Chain setup. (Repeater to Repeater)

To do Daisy chain setup RTX95100443 (USB – Programming kit) and RTX96101358 (Repeater Debug Cable) is needed.