

MINI-LINK RADIO SW

Release Note

Product area/family: MINI-LINK, FGC 101 3676

Product name/number: MINI-LINK 6365 SW-FW
CXP 903 6388/1

Type of product: SW



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Furthermore, the contents of this document are subject to revision without notice due to continued progress in methodology, design, and manufacturing.



1 Introduction

This document contains notes on the MINI-LINK 6365 SW-FW; CXP 903 6388/1.

2 New feature support

2.1 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1G81

New product supporting features in MINI-LINK 6365.

Note: For compatibility information
1/221 02-COH 901 536/1 "MINI-LINK Radio Unit Compatibility"

2.2 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1J23

Added support for MINI-LINK 6365 18GHz and 7/8GHz .

Note: For compatibility information
1/221 02-COH 901 536/1 "MINI-LINK Radio Unit Compatibility"

2.3 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1K69

No added features in this release.

2.4 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1L64

Added support for MINI-LINK 6365 23GHz.

2.5 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1M01

No added features in this release.



2.6 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2B14

Added support for Carrier Aggregation feature¹.
Added support for MINI-LINK 6365 10/11GHz.
Added support for TRX3 B 11GHz.

2.7 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2C55

Added support for MINI-LINK 6364 13GHz.
Added support for MINI-LINK 6364 15GHz.
Added support for MINI-LINK 6364 18GHz.
Added support for MINI-LINK 6365 32GHz.
Added support for Carrier Aggregation 2x112 MHz.

2.8 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2D03

Added Carrier Aggregation feature support for MINI-LINK 6365 18GHz.
Added Carrier Aggregation feature support for MINI-LINK 6365 23GHz.

2.9 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2E07

Support for MINI-LINK 6365 6GHz, including Carrier Aggregation.
Carrier Aggregation feature support for MINI-LINK 6365 13GHz.
Support longer radio cable.
Support for TRX2 6GHz.
Support for TRX3 B 6GHz.
Support RF-loop on TRX3 B and TRX2.

2.10 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2F05

Carrier Aggregation feature support for MINI-LINK 6365 7/8GHz and 10/11GHz.

2.11 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2G02

No added features in this release.

2.12 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2H02

Support for MINI-LINK 6365 28GHz, including Carrier Aggregation.

¹ See MINI-LINK 6365 release note, 1/109 47-FGC 101 3676 or MINI-LINK 6364 Release Note, 1/109 47-FGC 101 3980 for frequency specific information.



2.13 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2J03

Compatibility between MINI-LINK 6363/RAU2 X and MINI-LINK 6364/6365; TRX3 and TRX3B; TRX and TRX2²

~~Support for MINI-LINK 6365 38GHz, including Carrier Aggregation.~~

2.14 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2K02

Adding support for 24/26 GHz single carrier.

2.15 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2L02

Adding support for 24/26 GHz Carrier Aggregation.

2.16 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2M02

Support for MINI-LINK 6365 38GHz, including Carrier Aggregation.

2.17 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2N16

Support for MINI-LINK 6365 42GHz, including Carrier Aggregation.

2.18 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R3A17

Support for new HW R-states of radio and TRX (component platform update):

- MINI-LINK 6364 UKL 402 52/* – UKL 402 54/* R3A
- MINI-LINK 6365 UKL 402 36/* – UKL 402 51/* R5A
- TRX2 UKL 701 40/* R3A
- TRX3 B UKL 402 28/B* R4A

Maximum channel separation enhanced for carrier aggregation in 23 GHz.

² See MINI-LINK Radio Unit Compatibility, 1/221 02-COH 901 536/1 and MINI-LINK 6600 1.21 Release Note, 36/109 47-FGC 101 2880 for product specific information.



3 Corrections

3.1 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1G81

New product, no corrections.

3.2 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1J23

Alarm handling at SW reset/start-up changed to improve RLP and XPIC configuration performance.

3.3 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1K69

Fixed a bug in RF-loop handling.

Updated support for 7/8GHz.

3.4 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1L64

Fixed a software upgrade bug for never configured Radios.

3.5 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R1M01

The R1M01 SW can be used to upgrade from revisions R1 to R2. Sometimes depending on used SBL the RAU SW activation can fail upgrading R1 to R2.

Do the following to avoid getting stuck on activation when going to R2 from R1:

1. Upgrade from R1 to R1M01
2. Upgrade from R1M01 to R2

The R1M01 SW shall not be used other than an intermediate step to upgrade from R1 to R2, meaning that the used SW after upgrading the SW shall be R2. **The R1M01 SW is not supported as a permanent SW.**

3.6 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2B14

Fixed a compatibility issue with hitless software upgrade, see chapter 7.1.

3.7 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2C55

Fixed an issue with alarms might falsely be triggered when doing a software upgrade. Upgrading to R2C55 will not cause alarms to be triggered falsely.

Fixed an issue with software upgrade sometimes not being hitless in CA mode.



Fixed issue that when the radio is to transmit a CW-signal, it was never issued a TX-ON after the configuration.

3.8 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2D03

No corrections

3.9 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2E07

No corrections

3.10 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2F05

No corrections

3.11 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2G02

Fixed an issue where sometimes the radio configuration of frequencies is lost after power reset when Carrier Aggregation mode is used.

A soft reset of the radio will restore the radio to the proper configuration.

The bug was introduced in R2E07 and is also present in R2F05.

3.12 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2H02

In very rare cases in combination with MINI-LINK 6600/6200/6300 node SW version 1.18 or later, the radio is not turned on properly when set in out-of-service and back in-service. This radio SW version has a fix for these rare events.

3.13 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2J03

Fixed a problem where RF-loop did not get link back in the following use case: 2+0-radio Link bonding with CA with RF loop enabled and then perform node warm restart.

Fixed a problem where XPIC auto-restore doesn't work in 2x(2+0) CA CCDP.

3.14 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2K02

No corrections.

3.15 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2L02

No corrections.



3.16 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2M02

For MINI-LINK 6365 18/13H it was not possible to get traffic up in a Carrier Aggregation configuration for the specific frequency setting and CS listed below.

Tx1: 19370 MHz, Tx2: 19480 MHz, Rx1: 18360 MHz and Rx2: 18470 MHz and CS=56 MHz.

This is now corrected.

3.17 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R2N16

No corrections.

3.18 MINI-LINK 6365 SW-FW; CXP 903 6388/1, R3A17

No corrections.



4 New Optional Features

No new Optional Features are introduced in this release.

5 Radio SW upgrade procedure

Field recommendation:

Recommended procedure for MINI-LINK 6365 software upgrade:

1. Perform SBL upgrade.
2. Perform MINI-LINK 6365 SW upgrade.

Availability Information

Radio SW R3A17 is planned to be released on SW gateway in May 2024.

6 Compatibility

6.1 Software Upgrade

Radio SW upgrades and downgrades are verified for ± 10 consecutive releases.

6.2 General

For further information on compatibility, please refer to the documents.

"MINI-LINK 6600 R1 Compatibility", 1/221 02-HRA 901 20/11

"MINI-LINK Radio Unit Compatibility", 1/221 02-COH 901 536/1

"Product R-State history", 1/1317-HRA 901 05

"MINI-LINK 6365 release note" 1/109 47-FGC 101 3676



7 Known Limitations

7.1 Software upgrade/downgrade

Software upgrade/downgrade is not hitless in some combinations before R2B14. The matrixes below describe all case and state if SU is hitless or not. SU will work in any case even if it is not hitless for some cases.

Table 1: Hitless Software Upgrade matrix

	Revision after upgrade					
		R1G81	R1J23	R1K69	R1L64	R2B14
Revision before upgrade	R1G81	N/A	OK	OK	OK	OK
	R1J23	N/A	N/A	OK	NOK	OK
	R1K69	N/A	N/A	N/A	NOK	OK
	R1L64	N/A	N/A	N/A	N/A	OK
	R2B14	N/A	N/A	N/A	N/A	N/A

Table 2: Hitless Software Downgrade matrix

	Revision after downgrade					
		R1G81	R1J23	R1K69	R1L64	R2B14
Revision Before downgrade	R1G81	N/A	N/A	N/A	N/A	N/A
	R1J23	NOK	N/A	N/A	N/A	N/A
	R1K69	NOK	OK	N/A	N/A	N/A
	R1L64	NOK	OK	OK	N/A	N/A
	R2B14	NOK	OK	OK	OK	N/A

7.2 Power loss on radio

If the system is configured to use CA and 28MHz with MINI-LINK 6600/6200/6300 node SW version 1.18 or later, it is possible that a power loss to the radio only, for example by unplugging the power cable, can set the radio in an unconfigured state. A radio reset is mitigating this issue.

7.3 SW activation issue R1 to R2

In some rare cases the activation of the R2 SW will fail if the RAU SW was upgraded from R1L or earlier SW. This can happen for SBL 1.18 or later. When upgrading from R1 to R2, it is recommended to always upgrade via the intermediate SW R1M01, to avoid potential issues. See section 3.5. Or the SW upgrade can be done with an SBL < 1.18.