Date: August 21st, 2019

To: Regulatory Certification Body
    DEKRA Testing and Certification, S.A.U.
    Parque Tecnológico de Andalucía
    C/ Severo Ochoa 2 & 6
    29590 Campanillas
    Málaga, España

Related to product:

- Type of equipment: Wireless Module

- Trade name: Cinterion ALAS5-AM and Cinterion ALAS5-US

- Model name: ALAS5-AM and ALAS5-US

To whom it may concern,

Following to this letter, please find below the release notes corresponding to the final HW and SW versions, which correspond to these 2 products (model ALAS5V-US is based on ALAS5-AM)

Even when we originally provided to the testing lab the HW and SW version as Rev 1.1.4b and Rev. 00.052, which are the ones shown in the test reports provided, we've later updated them both.

    <u>Final ones (for both modules):</u>
    HW version: Rev 1.2
    SW version: Rev 01.001

<u>Our request is that the EU-TEC reflects both the new HW and SW versions.</u>

<u>HW change</u>
There are no hardware differences between ALAS5-AM Revision 1.1.4b and Revision 1.2.
Rev. 1.1 was succeeded by Rev. 1.1.1, Rev. 1.1.2, Rev. 1.1.3, and Rev. 1.1.4b.
Now, in order to release a formally correct set of production data, Revision 1.1.4b was simply cloned to Revision 1.2

<u>SW change</u>
SW to a new minor version.
This change has no impact on the operation, testing or certification of the product as shown in the release notes attached.

Model's ALAS5V-US hardware is based on ALAS5-AM thus the HW and SW version are the same.

Sincerely,

PA

_____

By: Leandro Wan-Dall
Title: Global Certification Manager
Company: GEMALTO M2M GMBH
Telephone: +49 30 311028179
e-mail: leandro.wan-dall@gemalto.com

Software Change Description ALAS5-W and ALAS5-AM

General Information:

This document provides the software change description of ALAS5-W and ALAS5-AM for the following SW releases:

- **SW Rev. 00.026 to SW Rev. 00.030**
- **SW Rev. 00.030 to SW Rev. 00.036**
- **SW Rev. 00.036 to SW Rev. 00.042**
- **SW Rev. 00.042 to SW Rev. 00.052**
- **SW Rev. 00.052 to SW Rev. 00.054**
- **SW Rev. 00.054 to SW Rev. 00.056**
- **SW Rev. 00.056 to SW Rev. 00.060**
- **SW Rev. 00.060 to SW Rev. 00.062**
- **SW Rev. 00.062 to SW Rev. 01.001**

Approval Relevant SW Changes:

SW Rev. 00.026 to SW Rev. 00.030

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	SAT 27.22.4.1/2/3/8/9.x fail due to wrong Terminal Response (Error at Byte[1])	TC SAT 27.22.4.1/2/3/8/9.x
2	Feature	SAT, CFUN - SIM not inserted issue after restarting UE in CFUN=0 mode	N/A
3	Feature	AT*99#: no re-connect to transparent mode	N/A
4	Feature	Implementation of IPservices	N/A
5	Feature	Implementation of additional AT commands (AT^SCMS / AT^SCMW)	N/A
6	Feature	Command at+cgatt=0 is not effective	N/A
7	Feature	AT+CFUN=1 stucks even if CFUN is already on "1"	N/A

SW Rev. 00.030 to SW Rev. 00.036

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	SAT/USAT icon related TCs fail: AT+CRSM for reading icon data fails	SAT / USAT
2	GCF	GCF: USAT REFRESH 27.22.4.7.1_2/3 fail: wrong ^SSTGI output	SAT / USAT (TC 27.22.4.7.1_2/3)

Gemalto M2M GmbH ▪ Siemensdamm 50 ▪ 13629 Berlin ▪ Germany

3	GCF	GCF: USAT Provide Local Information 27.22.4.15.1_4/5 fail: no Terminal Response issued	SAT / USAT (TC 27.22.4.15.1_4/5)
4	GCF	GCF: SAT/USAT icon related TCs fail: AT+CRSM for reading icon data fails	SAT / USAT
5	GCF	pre-GCF DEKRA: SAT 27.22.7.5.x fail: no ^SSTN: 5 indication and no TR to SET UP EVENT LIST	SAT / USAT (27.22.7.5.x)
6	GCF	[GCF/PTCRB][DEKRA] 9.2.3.2 FDD - FDD18 - Normal (3GPP TS 36.521-3)	9.2.3.2 FDD
7	GCF	[Pre- GCF/PTCRB][DEKRA] TC 7.1.3.13	TC 7.1.3.13
8	Feature	PLMN list (TS.25) is not in sync with the latest on from Feb 2019	N/A

SW Rev. 00.036 to SW Rev. 00.042

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	Feature	AT commands: AT^SNCSGSC - Closed Subscriber Group Network Scan	N/A
2	Feature	AT^SINFO="ProductCfg/Ident"	N/A
3	Feature	SAT PLAY Tone not working – fixed	N/A

SW Rev. 00.042 to SW Rev. 00.052

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	GCF: SAT/USAT PLAY TONE 27.22.4.5 fails: no audio hearable and other problems	SAT/USAT 27.22.4.5
2	GCF	GCF: at^sind=simdata,1 shows no output at all	N/A
3	GCF	GCF: SAT/USAT 27.22.4.1.5_x/ 27.22.4.7.1_3/27.22.4.7.2_1/27.22.4.10.8 fail: wrong ^SSTGI output	SAT/USAT 27.22.4.1.5
4	GCF	[GCF/PTCRB][DEKRA] Clarification on EVS feature	
5	GCF	GCF test case 9.2.1.1.1a	TC 9.2.1.1.1a
6	GCF	GCF test case 18.1.1	TC 18.1.1
7	GCF	[pre-GCF/PTCRB][DEKRA] TC 8.3.1.9 on the CMW500	TC 8.3.1.9

SW Rev. 00.052 to SW Rev. 00.054

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	GCF: USAT 27..22.4.x fail: missing ^SSTR: <PAC>,0,"" URC after entering the Terminal Response	USAT 27..22.4.x

2	GCF	[GCF/PTCRB][DEKRA] 91.2.3.1.1 Emergency Call over VxLTE - SoS APN	TC GCF FT 91.2.3.1.1
3	GCF	[GCF/PTCRB][DEKRA] TC 42.1.1a & 42.1.4a Call Forwarding Service (Code) Command executed without changes	TC GCF FT 42.1.1a
4	GCF	[GCF/PTCRB][DEKRA] DUT changes the MSISDN two first digits by +34	TC GCF FT

SW Rev. 00.054 to SW Rev. 00.056

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	[GCF] TestCase 31.10 on the CMW500	TC 31.10
2	GCF	SAT 27.22.4.22.2_4 (SETUP IDLE MODE TEXT, icon not self-explanatoy, empty text string) fails: PAC not handled automatically	SAT 27.22.4.22.2_4
3	GCF	[GCF/PTCRB][DEKRA] TC 41.2.7.7 DuT shows the arriving of the SMS Type 0	TC 41.2.7.7
4	GCF	[GCF/PTCRB] SAT 27.22.4.13.4 (SETUP CALL) fails: wrong Terminal Responses	SAT 27.22.4.13.4
5	GCF	[GCF/PTCRB][DEKRA] 3GPP TS 51.010-1 TC 26.6.11.3 PICS mismach	TC 26.6.11.3
6	GCF	[GCF/PTCRB][DEKRA] 27.22.4.9.8/1 - Network Independent - Normal (3GPP TS 31.124)	27.22.4.9.8/1
7	GCF	[GCF/PTCRB][DEKRA] TS51.010-4 TC27.22.4.22.2/4 - fail at Terminal Response	TC27.22.4.22.2/4

SW Rev. 00.056 to SW Rev. 00.060

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	[GCF/PTCRB][DEKRA] 27.22.2 - Network Independent - Normal (3GPP TS 51.010-4)	USAT 27..22.2
2	GCF	[GCF/PTCRB][DEKRA] TC 42.1.1a & 42.1.4a Call Forwarding Service (Code) Command executed without changes	TC GCF FT TC 42.1.1a & 42.1.4a

SW Rev. 00.060 to SW Rev. 00.062

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	[GCF/PTCRB][DEKRA] DUT changes the MSISDN two first digits by +34	TC GCF FT

SW Rev. 00.062 to SW Rev. 01.001

No.	Topic	Changes / Fixes / Improvements for:	Test Case / Test Area
1	GCF	[GCF/PTCRB][DEKRA] SAT/USAT BIP (Open/Close Channel,Send/Receive Data): PAC not handled automatically	SAT/USAT
2	GCF	[GCF/PTCRB] UE capability check	TC 8.5.4.1

HW Differences between Cinterion® ALAS5-AM Revisions 1.1.3, 1.1.4b, and 1.2

Delta Report

Version: 02
DocID: ALAS5-AM_rev113_rev114b_rev12_hw_delta_v02

Document Name:	**HW Differences between Cinterion® ALAS5-AM Revisions 1.1.3, 1.1.4b, and 1.2**
Version:	**02**
Date:	**July 25, 2019**
DocId:	**ALAS5-AM_rev113_rev114b_rev12_hw_delta_v02**
Status:	**Confidential / Released**

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Contents

1   Introduction

This Delta Report applies to the Gemalto M2M module

Cinterion® ALAS5-AM

2   Differences between Revisions 1.1.3 and 1.1.4b

ALAS5-AM Revision 1.1.4b uses some components from other vendors than used for Revision 1.1.3 as listed in the table below:

Component Reference	Component	Vendor Rev. 1.1.3	Vendor Rev. 1.1.4b
Z1015	RX Filter Bd 2	RF360	Taiyo Yuden
Z1200	GNSS RX Filter	RF360	Taiyo Yuden
D301	NAND memory	Nanya	Micron
Z910	RX Filter Bd 8	RF360	Taiyo Yuden
Z811, Z830	Diplexer F1 F2	TDK	Walsin
Z801	Directional Coupler	TDK	Walsin
Z802	TX lowpass filter GSM1800/1900	TDK	Walsin

The intention behind using components from other vendors is to remove the dependency on a single vendor.

A lot of care is taken to select components that are equivalent in form, fit, and function.

Testing and qualification measurements show that there is no impact on GCF, PTCRB, FCC, RED.

3   Differences between Revisions 1.1.4b and 1.2

There are no hardware differences between ALAS5-AM Revision 1.1.4b and Revision 1.2.

Background:
Rev. 1.1 was succeeded by Rev. 1.1.1, Rev. 1.1.2, Rev. 1.1.3, and Rev. 1.1.4b.

Now, in order to release a formally correct set of production data, Revision 1.1.4b was simply cloned to Revision 1.2.

About Gemalto

Since 1996, Gemalto has been pioneering groundbreaking M2M and IoT products that keep our customers on the leading edge of innovation.

We work closely with global mobile network operators to ensure that Cinterion® modules evolve in sync with wireless networks, providing a seamless migration path to protect your IoT technology investment.

Cinterion products integrate seamlessly with Gemalto identity modules, security solutions and licensing and monetization solutions, to streamline development timelines and provide cost efficiencies that improve the bottom line. As an experienced software provider, we help customers manage connectivity, security and quality of service for the long lifecycle of IoT solutions.
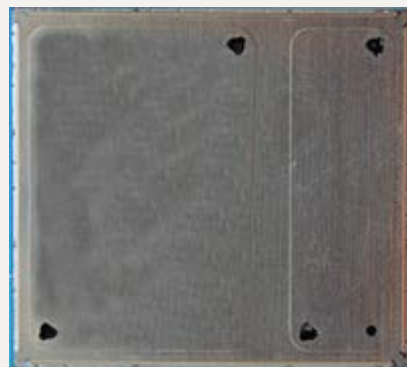
For more information please visit
www.gemalto.com/m2m, www.facebook.com/gemalto, or Follow@gemaltoIoT on twitter.

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81541 Munich
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HW Differences between Cinterion® ALAS5-AM Rev. 1.2 and ALAS5V-US Rev. 1.2

Delta Report

Version: 01
DocID: ALAS5-AM_rev12_ALAS5V-US_rev12_hw_delta_v01

Document Name:	**HW Differences between Cinterion® ALAS5-AM Rev. 1.2 and ALAS5V-US Rev. 1.2**
Version:	**01**
Date:	**June 24, 2019**
DocId:	**ALAS5-AM_rev12_ALAS5V-US_rev12_hw_delta_v01**
Status:	**Confidential / Released**

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Contents

1 Supported RF Bands

This document is valid for the following products:

ALAS5-AM
ALAS5V-US

Both products use the same PCB.

ALAS5-AM is the "general" variant, containing all available RF band combinations, whereas ALAS5V-US uses only a subset of RF bands. The following table shows the available RF band combinations.

The respective components of the unused RF bands are not populated.

	ALAS5-AM	ALAS5V-US
850 MHz (GSM / B5)	X	X
900 MHz (GSM / B8)	X	X
1800 MHz (GSM / B3)	X	X
1900 MHz (GSM / B2)	X	X
Bd2 (FDD-LTE, HSPA)	X	X
Bd4 (FDD-LTE, HSPA)	X	X
Bd5 (FDD-LTE, HSPA)	X	X
Bd7 (FDD-LTE)	X	
Bd12 (FDD-LTE)	X	X
Bd13 (FDD-LTE)	X	
Bd28 (FDD-LTE)	X	
Bd29 (FDD-LTE, DL only)	X	
Bd30 (FDD-LTE, DL only)	X	
Bd66 (FDD-LTE)	X	X
GNSS	X	X

2 Floorplan of ALAS5-AM Rev. 1.2
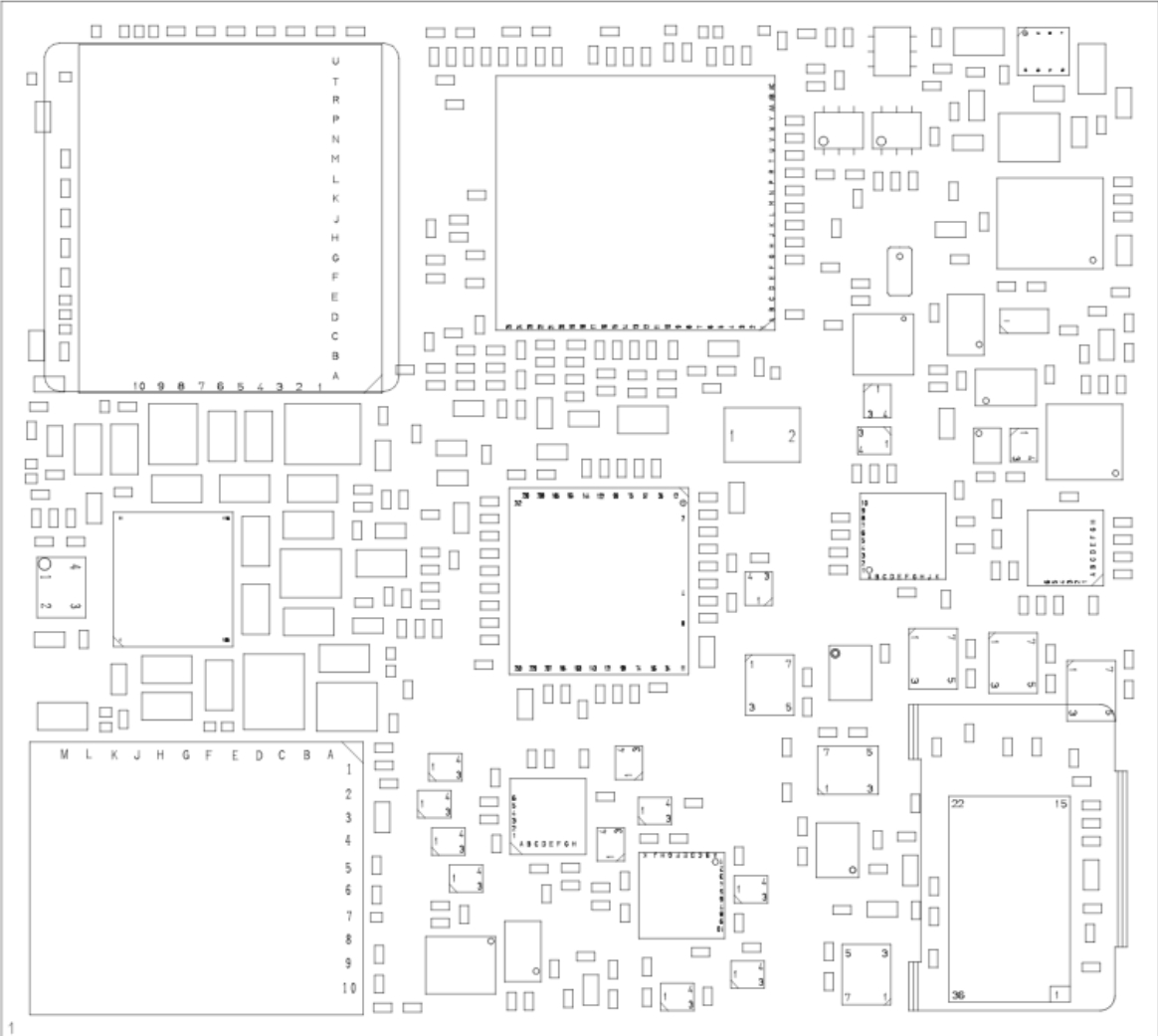
Figure 1: Floorplan ALAS5-AM

3   Floorplan of ALAS5V-US Rev. 1.2
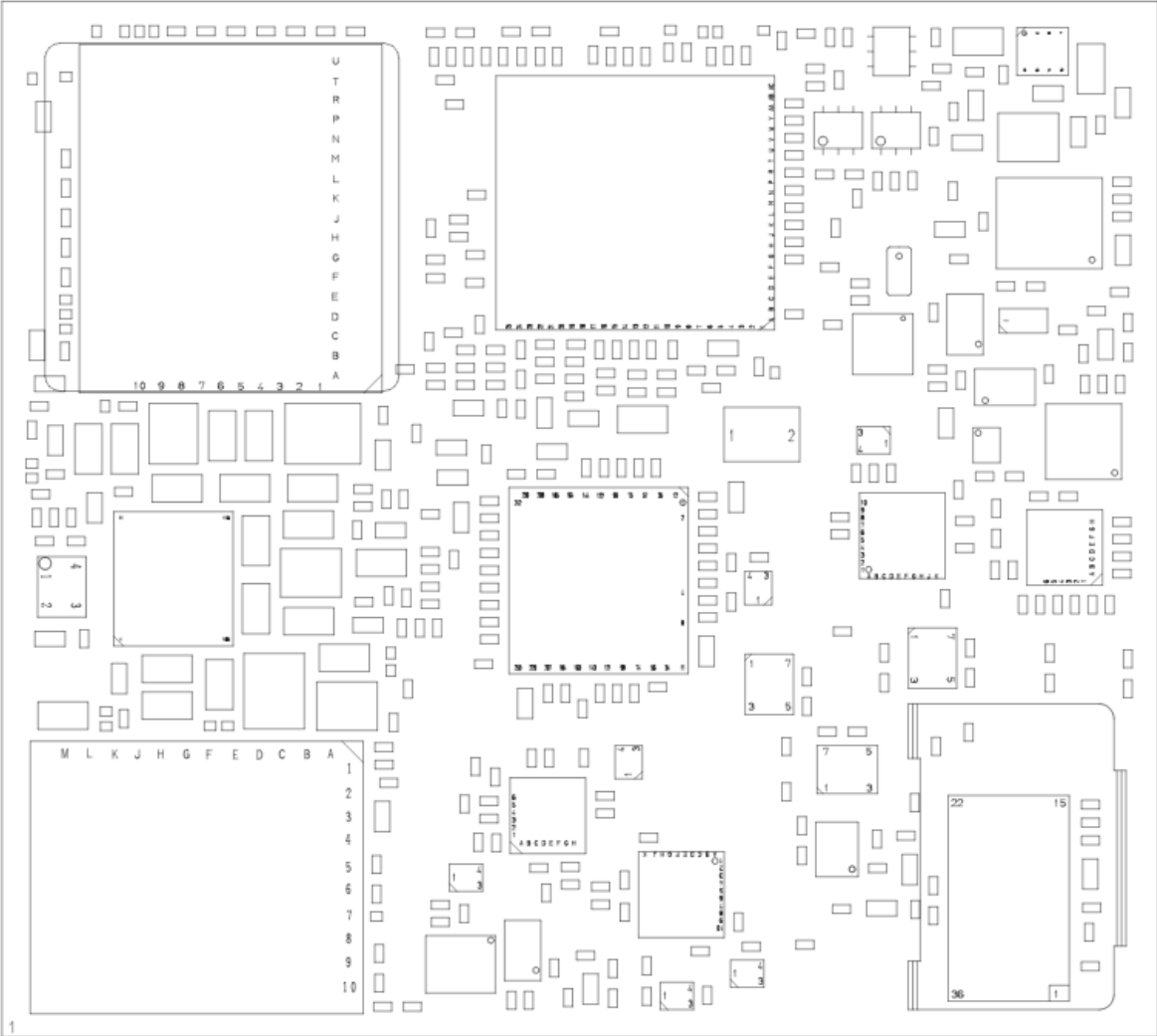
Figure 2: Floorplan ALAS5V-US

3.1 Schematic Differences to ALAS5-AM

The below sections describe the schematic differences between ALAS5V-US and ALAS5-AM.

Note: Components in black are populated, components in blue are not populated.
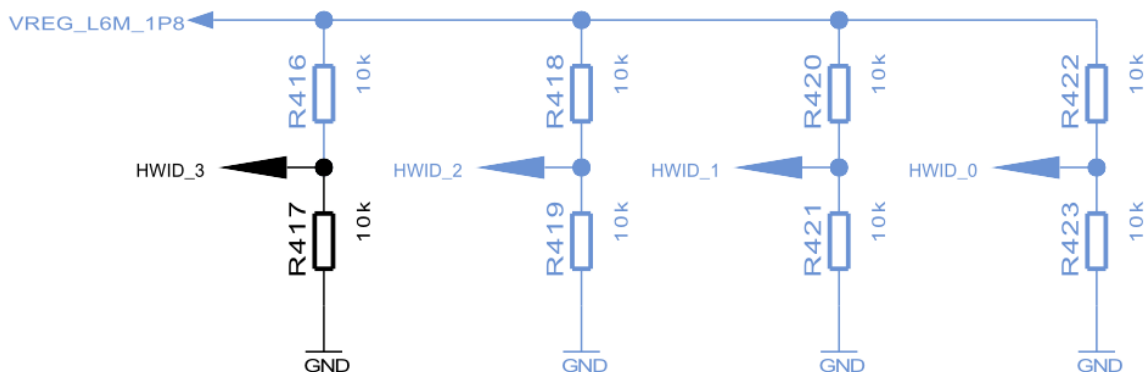
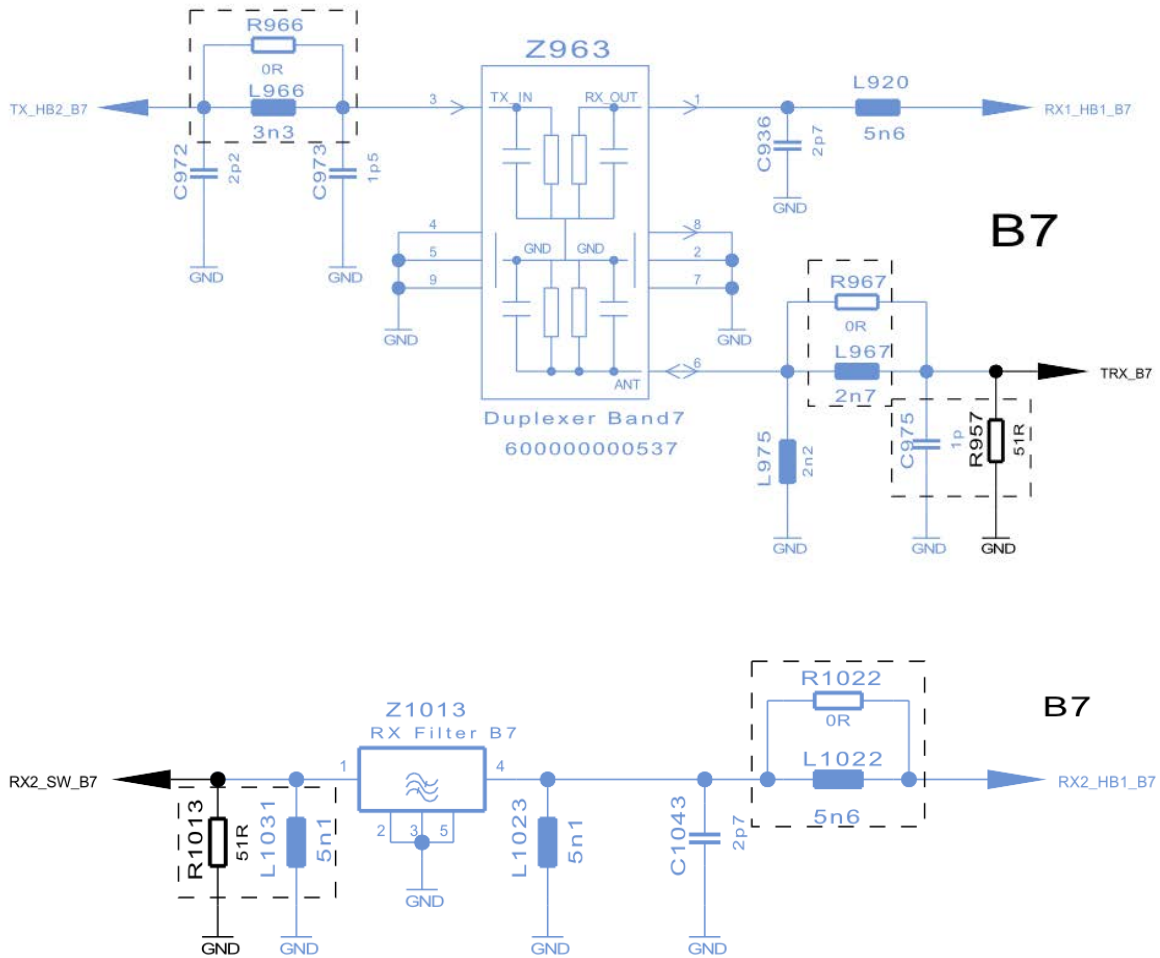### 3.1.1 Different Hardware Identification

ALAS5V-US:
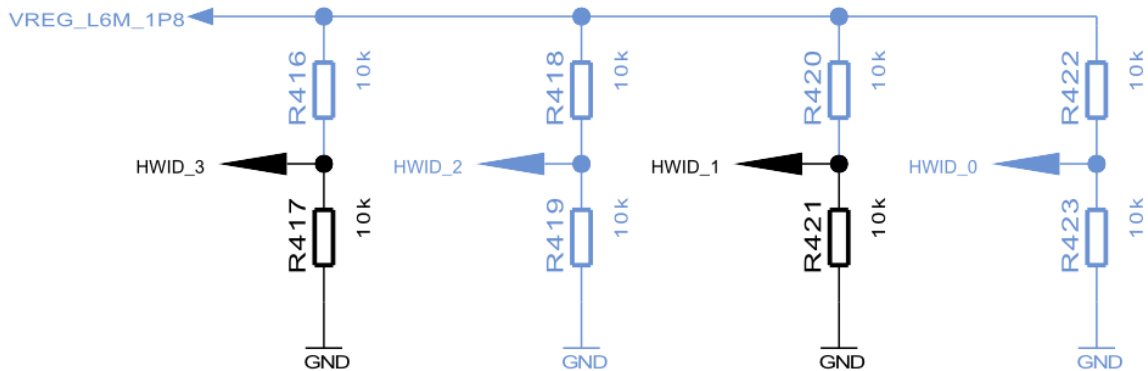
ALAS5-AM:

Affected test scope: No impact on GCF, PTCRB, FCC, R&TTE.
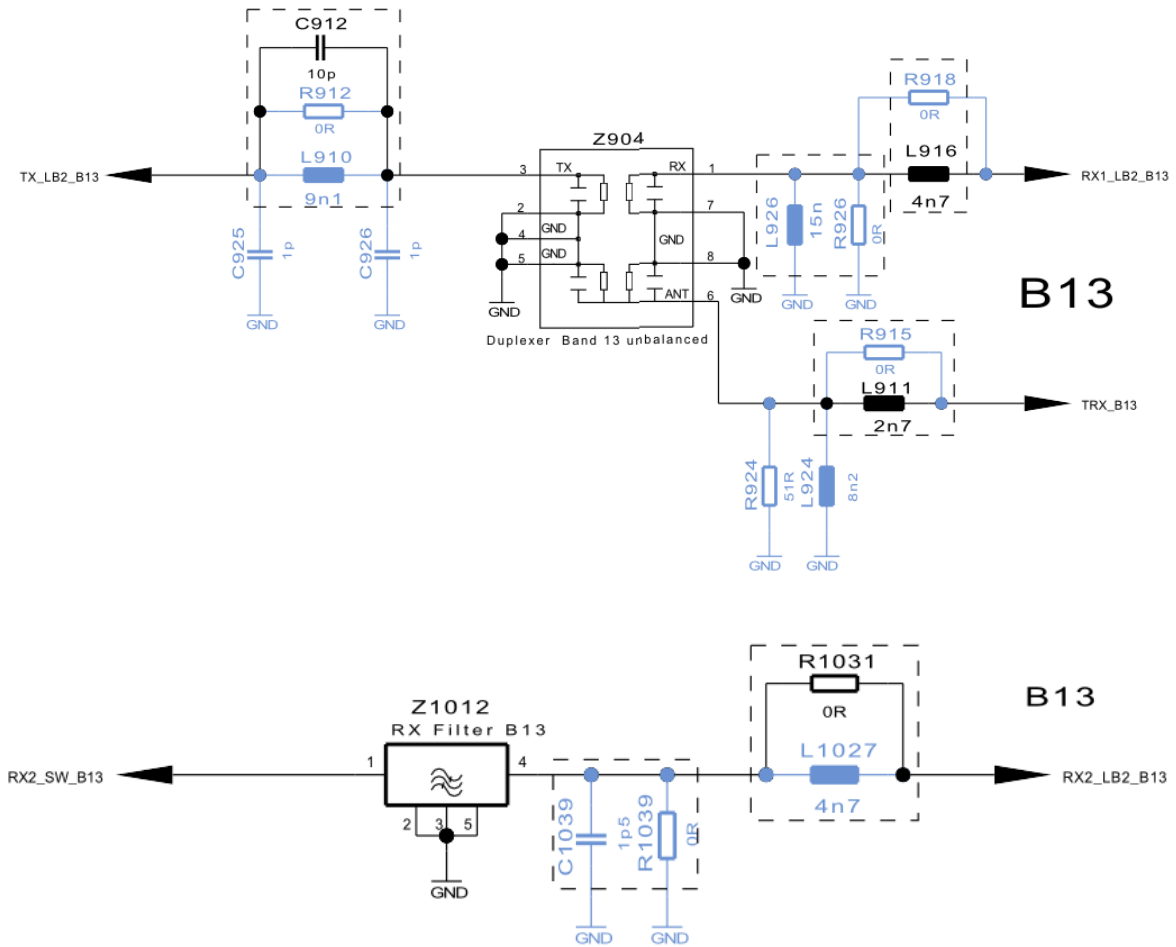
3.1.2 Band 7 Removed

A duplexer, a band filter, and matching elements were removed/replaced on ALAS5V-US. Also, LNA inputs now open received termination resistors.
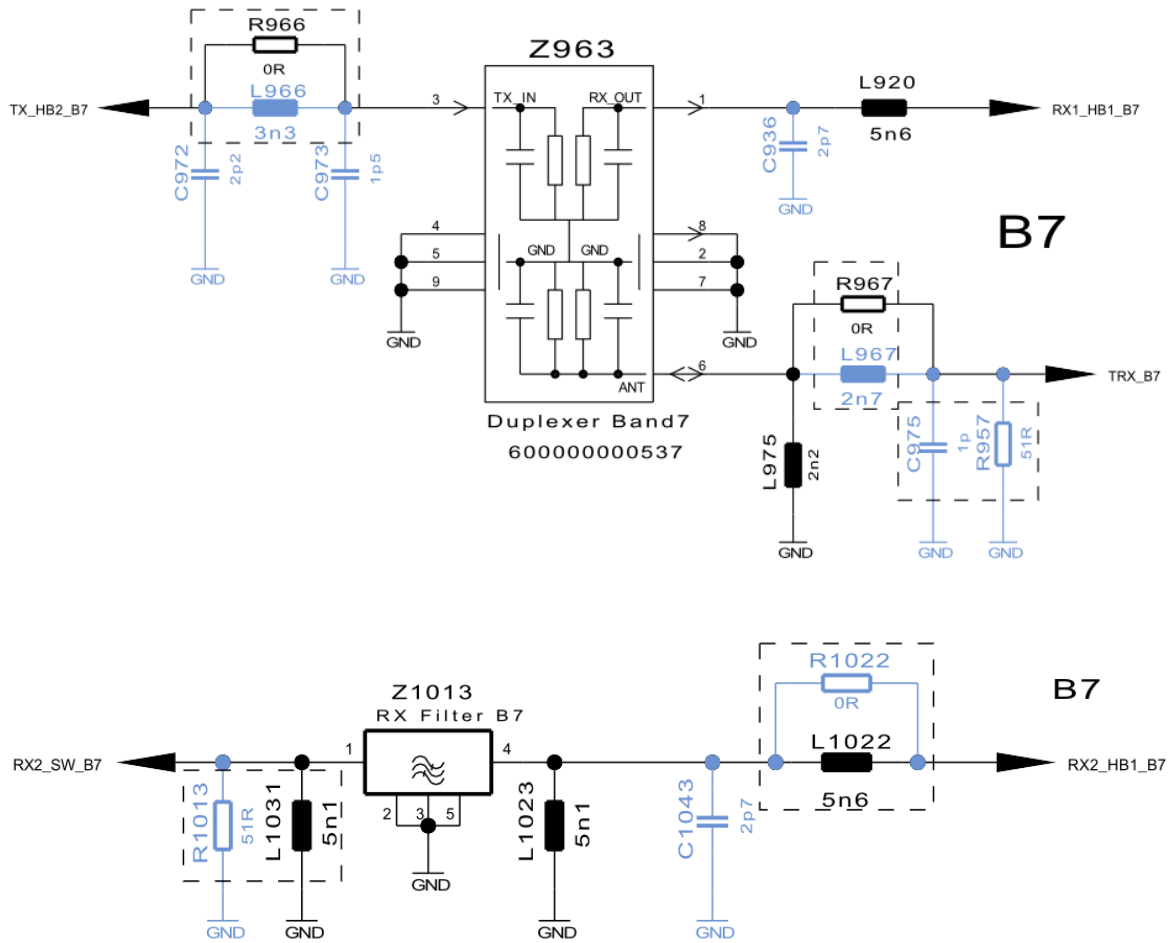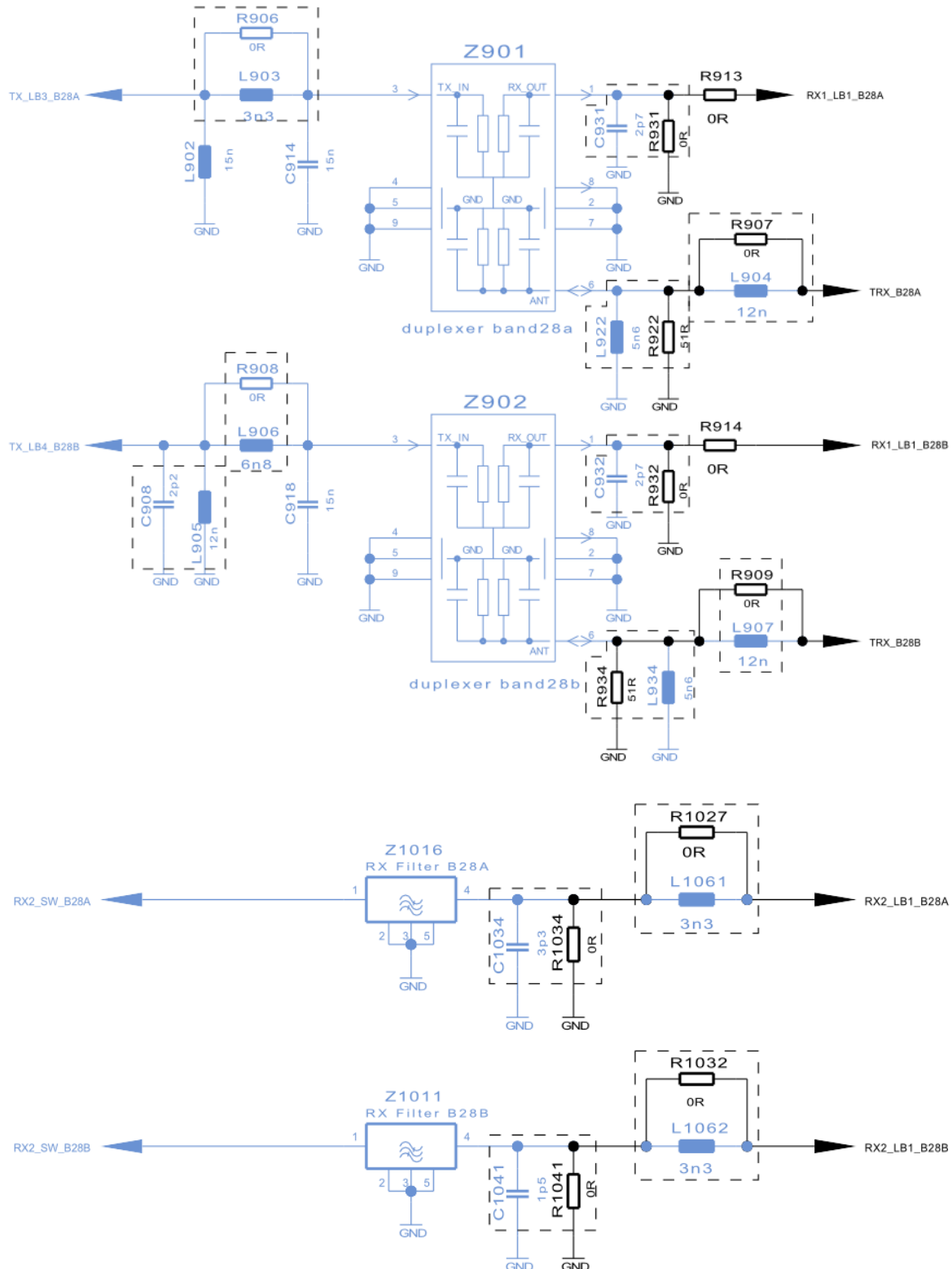
ALAS5V-US:

ALAS5-AM:

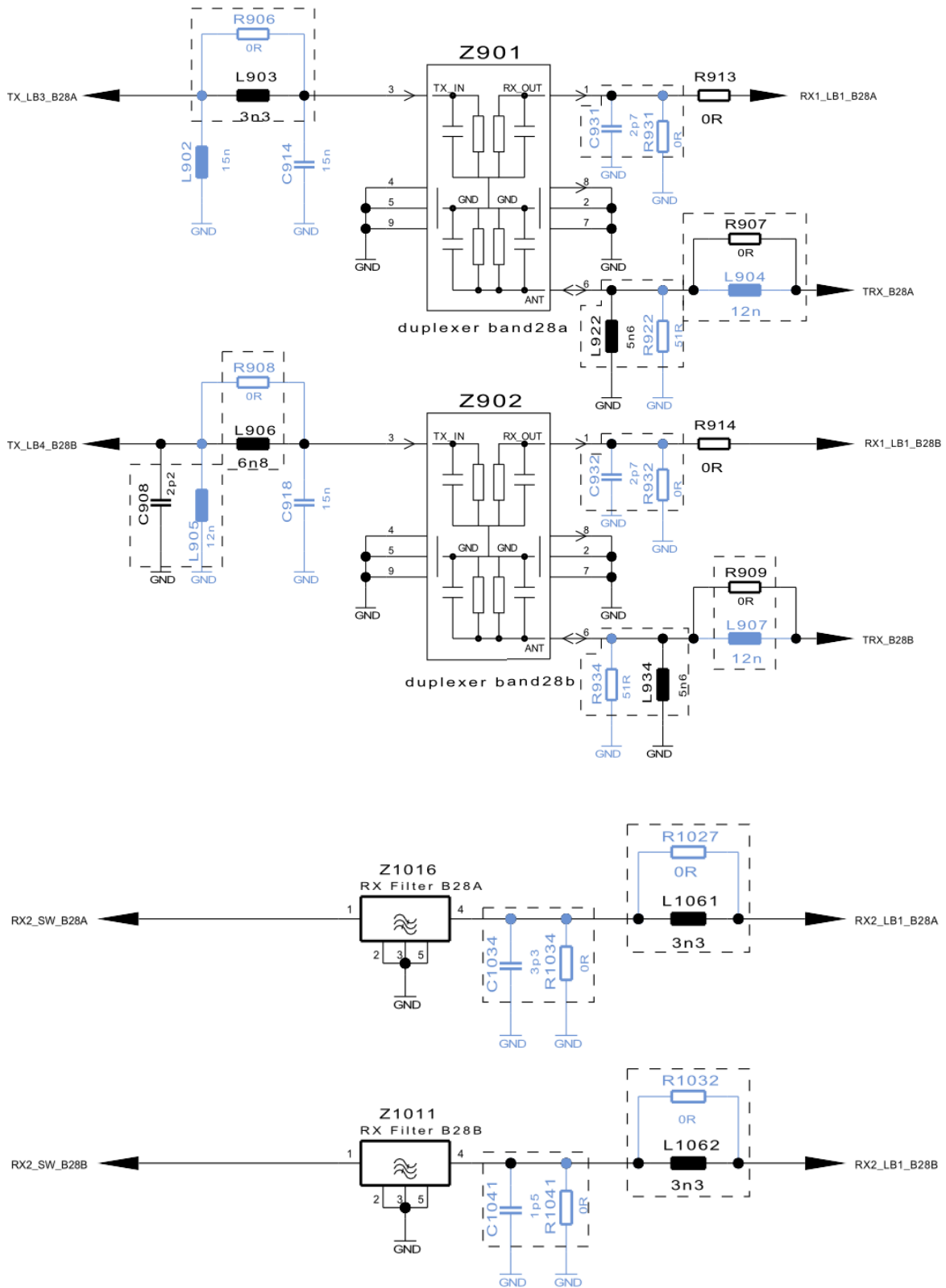**Affected test scope:**   No impact on GCF, PTCRB, FCC, R&TTE.

3.1.3 Band 13 Removed

A duplexer, a band filter, and matching elements were removed/replaced on ALAS5V-US. Also, LNA inputs now open received termination resistors.
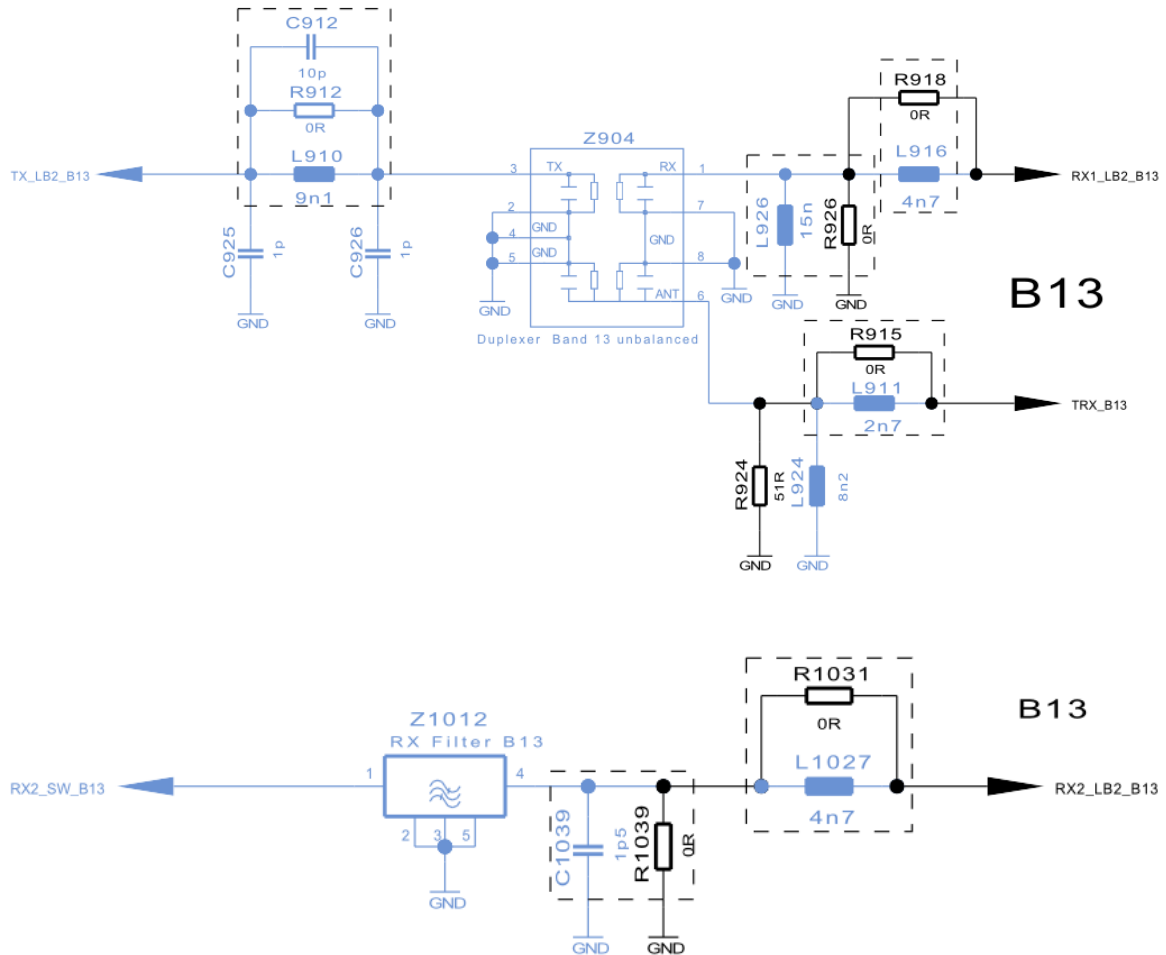
ALAS5V-US:

ALAS5-AM:

Affected test scope: No impact on GCF, PTCRB, FCC, R&TTE.

3.1.4 Band 28 Removed

Duplexers, band filters, and matching elements were removed/replaced on ALAS5V-US. Also, LNA inputs now open received termination resistors.
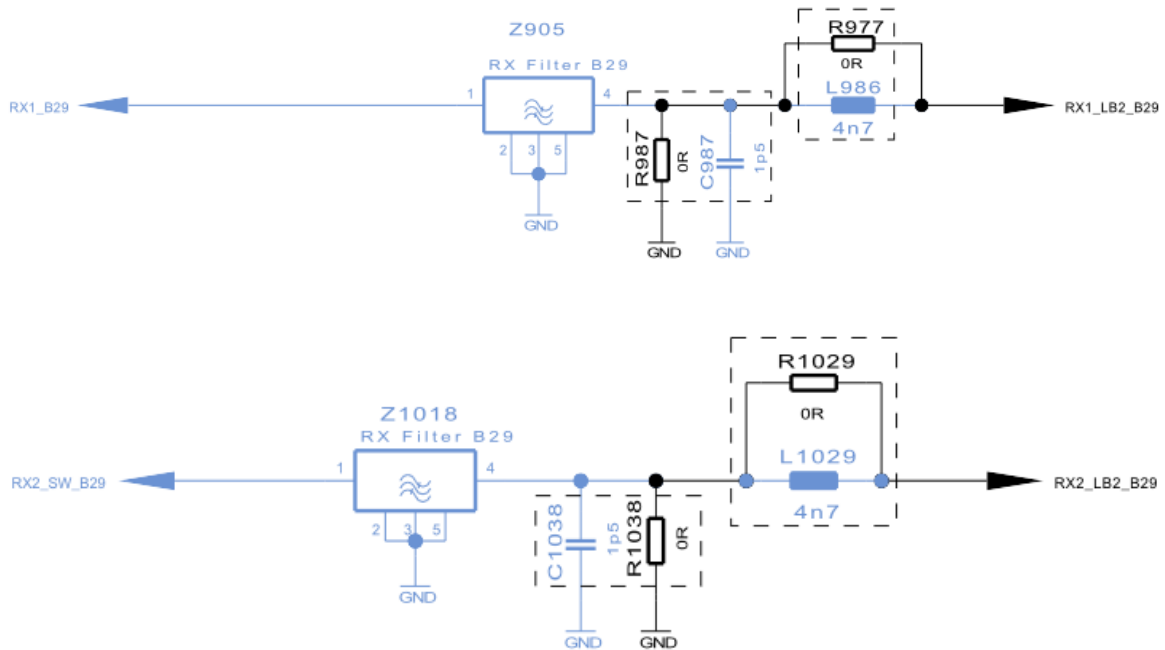
ALAS5V-US:

ALAS5-AM:

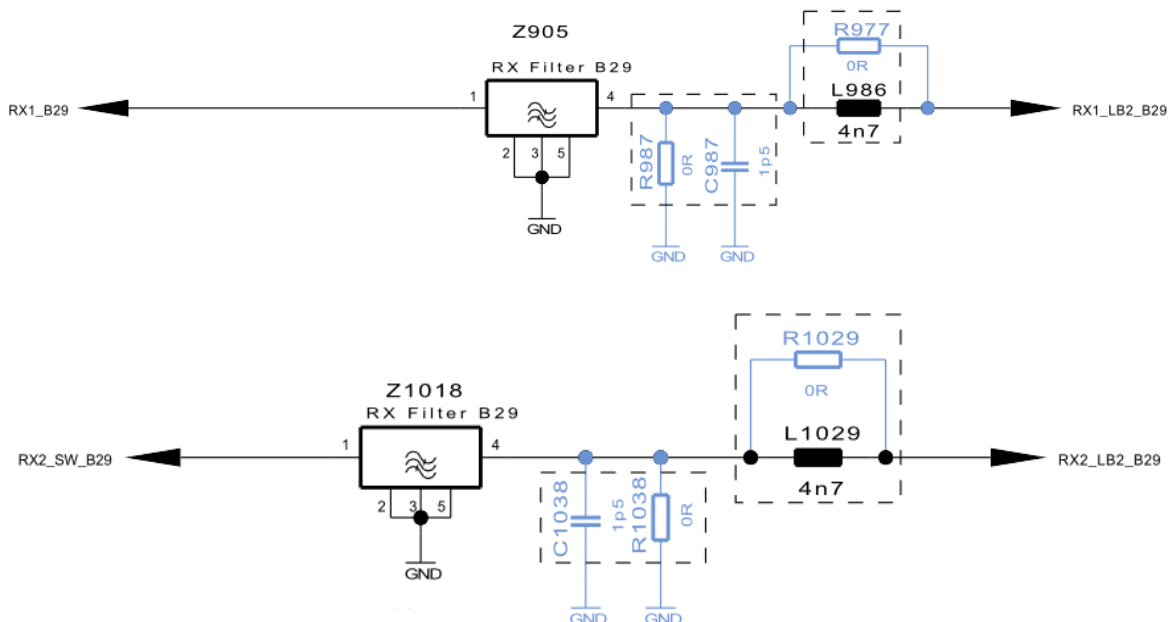**Affected test scope:**   No impact on GCF, PTCRB, FCC, R&TTE.

3.1.5 Band 29 Removed

Band filters and matching elements were removed/replaced on ALAS5V-US. Also, LNA inputs now open received termination resistors.
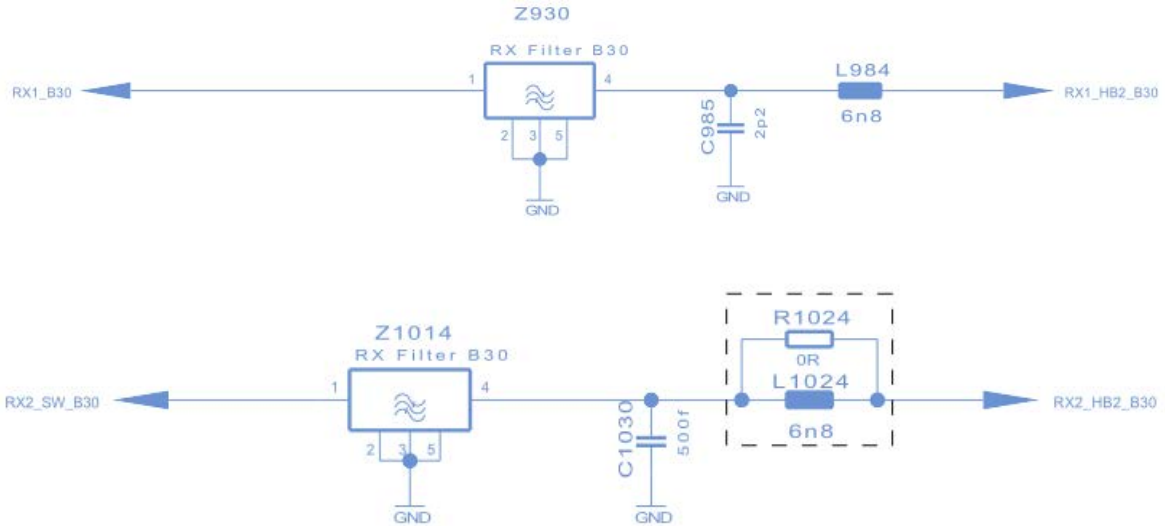
ALAS5V-US:

ALAS5-AM:

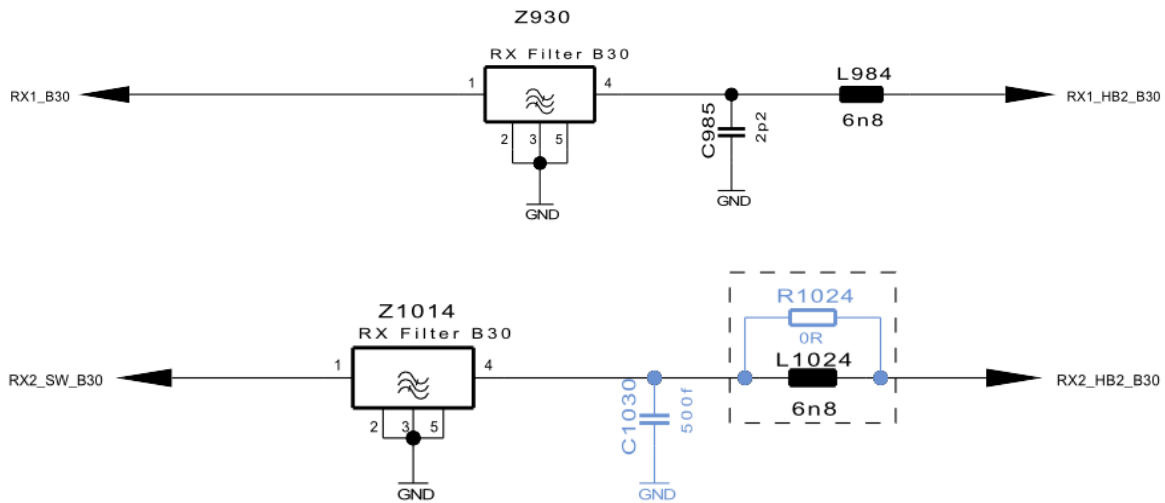**Affected test scope:**   No impact on GCF, PTCRB, FCC, R&TTE.

3.1.6 Band 30 Removed

Band filters and matching elements have been removed on ALAS5V-US.

ALAS5V-US:

ALAS5-AM:

Affected test scope: No impact on GCF, PTCRB, FCC, R&TTE.

About Gemalto

Since 1996, Gemalto has been pioneering groundbreaking M2M and IoT products that keep our customers on the leading edge of innovation.

We work closely with global mobile network operators to ensure that Cinterion® modules evolve in sync with wireless networks, providing a seamless migration path to protect your IoT technology investment.

Cinterion products integrate seamlessly with Gemalto identity modules, security solutions and licensing and monetization solutions, to streamline development timelines and provide cost efficiencies that improve the bottom line. As an experienced software provider, we help customers manage connectivity, security and quality of service for the long lifecycle of IoT solutions.

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