

HW Differences between Cinterion[®] PLSx3-X and PLSx3-X3 Products

Delta Report

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1 Introduction

This document describes the Cinterion® PLSx3-X and PLSx3-X3 hardware design differences, including:

- Changes from PLSx3-X Rev. 2.2 to PLSx3-X3 Rev. 2.2
- Differences between PLS83-X/X3 Rev. 2.2 and PLS63-X/X3 Rev. 2.2

As US operator projects, PLSx3-X3 variants support different bands from base variants PLSx3-X, as shown in below Table 1. Both variants use the same footprint and PCB layout. Different hardware IDs are implemented to identify different variants.

Table 1: Supported frequent bands

Variants	Technology	2	4	5	12	13	14	25	26	66	71
PLS63/83-X (base variants)	LTE	x	x	x	x	x	x	x	x	x	x
	WCDMA	x	x	x							
PLS63/83-X3	LTE	x	x		x		x			x	
	WCDMA										

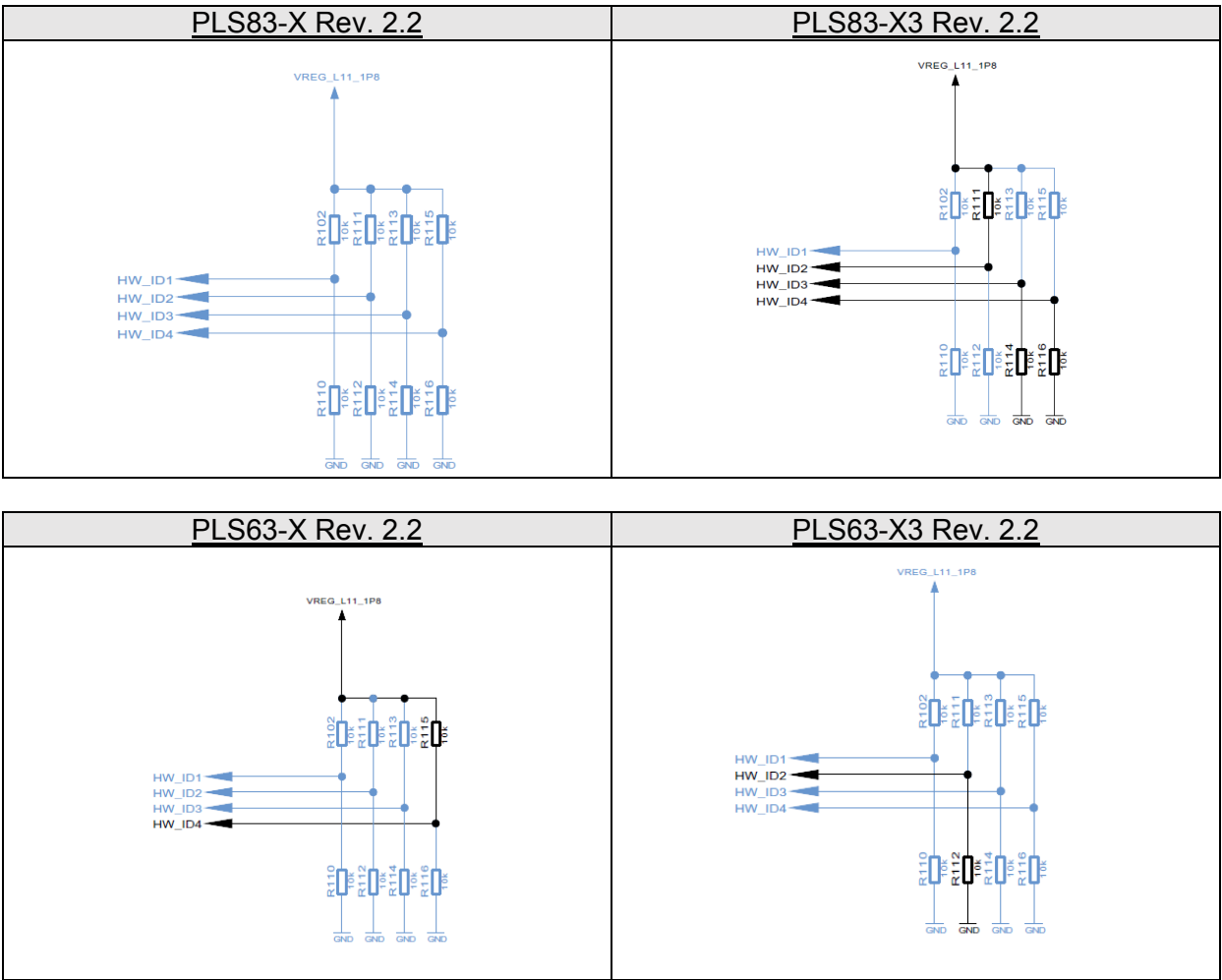
2 Baseband Hardware Differences between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2

This section describes the differences on the baseband part.

Schematic Differences

The following section highlights the schematic differences on baseband between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2. Different hardware IDs are implemented to identify different variants.

Note: Components in black are populated, components in blue are not populated.



PLS83-X/X3 Rev. 2.2 is designed with a Cat. 4 processor, while PLS63-X/X3 is based on a Cat. 1 processor, the two processors are pin-pin compatible.

<u>PLS83-X/X3 Rev. 2.2</u>	<u>PLS63-X/X3 Rev. 2.2</u>
Cat. 4 processor	Cat. 1 processor
U100: 600000001376	U100: 600000001377

3 RF Hardware Differences between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2

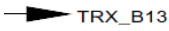
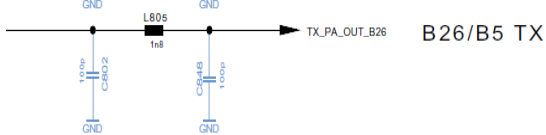
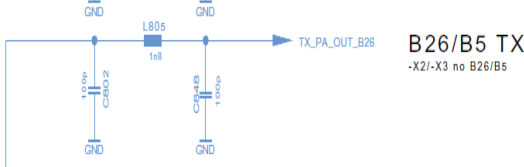
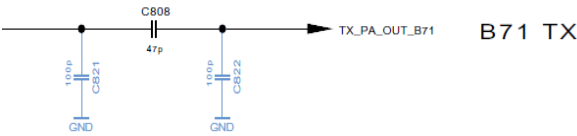
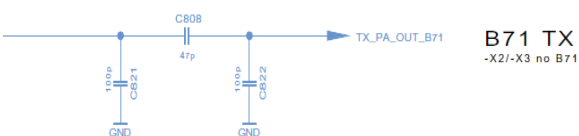
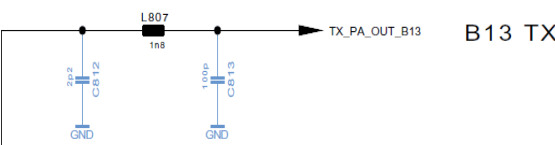
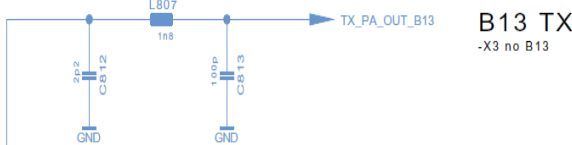
This section describes the differences on the RF part.

Schematic Differences

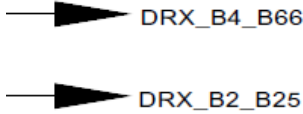
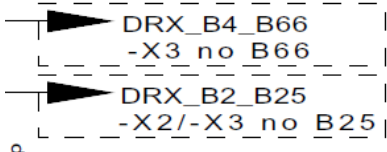
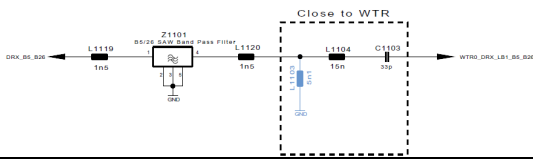
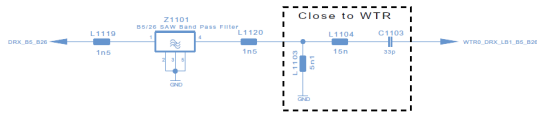
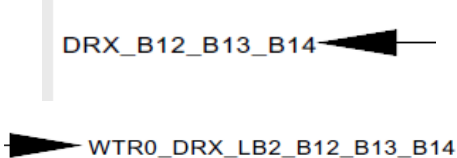
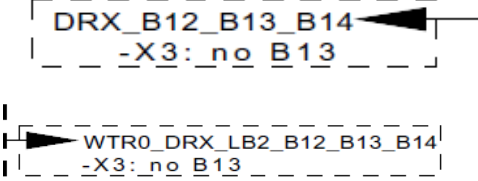
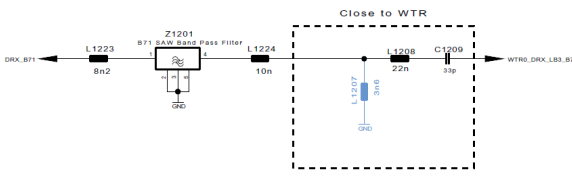
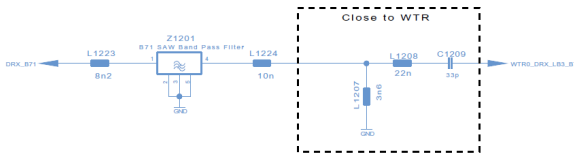
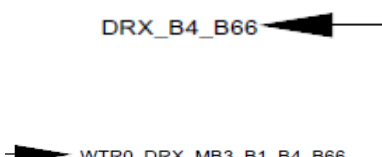
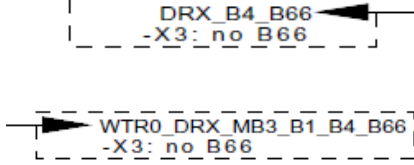
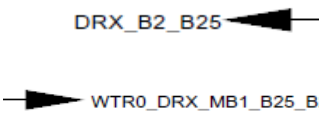
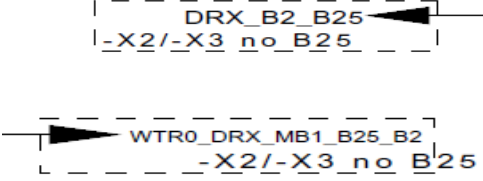
The following section highlights the schematic differences on RF between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2. The non-supporting bands are disabled in schematic RF part.

Note: Components in black are populated, components in blue are not populated.

PLS83/63-X Rev. 2.2	PLS83/63-X3 Rev. 2.2
WTR_TX_DA1_B12_B13_B14_B71 WTR0_TX_DA4_B25_2_B66_4	WTR_TX_DA1_B12_B13_B14_B71 -X2/-X3 no B71 -X3 no B13 WTR0_TX_DA4_B25_2_B66_4 -X2/-X3 no B25 -X3 no B66
WTR0_DRX_MB1_B25_B2 WTR0_DRX_MB3_B1_B4_B66 WTR0_DRX_LB1_B5_B26 WTR0_DRX_LB2_B12_B13_B14 WTR0_DRX_LB3_B71 WTR0_PRX_MB1_B25_B2 WTR0_PRX_MB3_B4_B66 WTR0_PRX_LB1_B26 WTR0_PRX_LB2_B12_B13_B14 WTR0_PRX_LB3_B71	WTR0_DRX_MB1_B25_B2 -X2/-X3 no B25 WTR0_DRX_MB3_B1_B4_B66 -X3 no B66 WTR0_DRX_LB1_B5_B26 -X2/-X3 no B5/B26 WTR0_DRX_LB2_B12_B13_B14 -X3 no B13 WTR0_DRX_LB3_B71 -X2/-X3 no B71 WTR0_DRX_MB1_B25_B2 -X2/-X3 no B25 WTR0_DRX_MB3_B1_B4_B66 -X3 no B66 WTR0_DRX_LB1_B5_B26 -X2/-X3 no B5/B26 WTR0_DRX_LB2_B12_B13_B14 -X3 no B13 WTR0_DRX_LB3_B71 -X2/-X3 no B71
BAND_SEL_B25_B66 TRX_B2_B25 TRX_B4_B66 TRX_B26 TRX_B71	BAND_SEL_B25_B66 -X2/-X3: no B25 -X3: B2/B4 TRX_B2_B25 -X2/-X3: no B25 TRX_B4_B66 -X3: no B66

	TRX_B26 -X2/-X3: no B26 TRX_B71 -X2/-X3: no B71 TRX_B13 -X3: no B13
 B26/B5 TX	 B26/B5 TX -X2/-X3 no B26/B5
 B71 TX	 B71 TX -X2/-X3 no B71
 B13 TX	 B13 TX -X3 no B13
TX_PA_OUT_B2 B25/B2 TX TX_PA_OUT_B4_B66 B66/B4 TX	TX_PA_OUT_B2 B25/B2 TX -X2/-X3 no B25 TX_PA_OUT_B4_B66 B66/B4 TX -X3 no B66
WTR0_TX_DA4_B25_2_B66_4 WTR0_TX_DA2_B26 WTR_TX_DA1_B12_B13_B14_B71	WTR0_TX_DA4_B25_2_B66_4 -X2/-X3 no B25 -X3 no B66 WTR0_TX_DA2_B26 -X2/-X3 no B26 WTR_TX_DA1_B12_B13_B14_B71 -X2/-X3 no B71 -X3 no B13
WTR0_PRX_LB2_B12_B13_B14 PRX_B12 PRX_B14 PRX_B13	WTR0_PRX_LB2_B12_B13_B14 -X3 no B13 PRX_B12 PRX_B14 PRX_B13 -X3 no B13

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 DRX_B4_B66 DRX_B2_B25	 DRX_B4_B66 -X3 no B66 DRX_B2_B25 -X2/-X3 no B25
B5 / B26 DRX 	B5 / B26 DRX -X2/-X3: no B5/B26 
 DRX_B12_B13_B14 WTR0_DRX_LB2_B12_B13_B14	 DRX_B12_B13_B14 -X3: no B13 WTR0_DRX_LB2_B12_B13_B14 -X3: no B13
B71 DRX 	B71 DRX -X2/-X3: no B71 
 DRX_B4_B66 WTR0_DRX_MB3_B1_B4_B66	 DRX_B4_B66 -X3: no B66 WTR0_DRX_MB3_B1_B4_B66 -X3: no B66
 DRX_B2_B25 WTR0_DRX_MB1_B25_B2	 DRX_B2_B25 -X2/-X3 no B25 WTR0_DRX_MB1_B25_B2 -X2/-X3 no B25



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