

# **HW Differences between Cinterion<sup>®</sup> PLSx3-X and PLSx3-X3 Products**

**Delta Report**

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## Contents

<b>1</b>	<b>Introduction .....</b>	<b>5</b>
<b>2</b>	<b>Baseband Hardware Differences between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2 .....</b>	<b>6</b>
	Schematic Differences .....	6
<b>3</b>	<b>RF Hardware Differences between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2 .....</b>	<b>8</b>
	Schematic Differences .....	8

## 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										

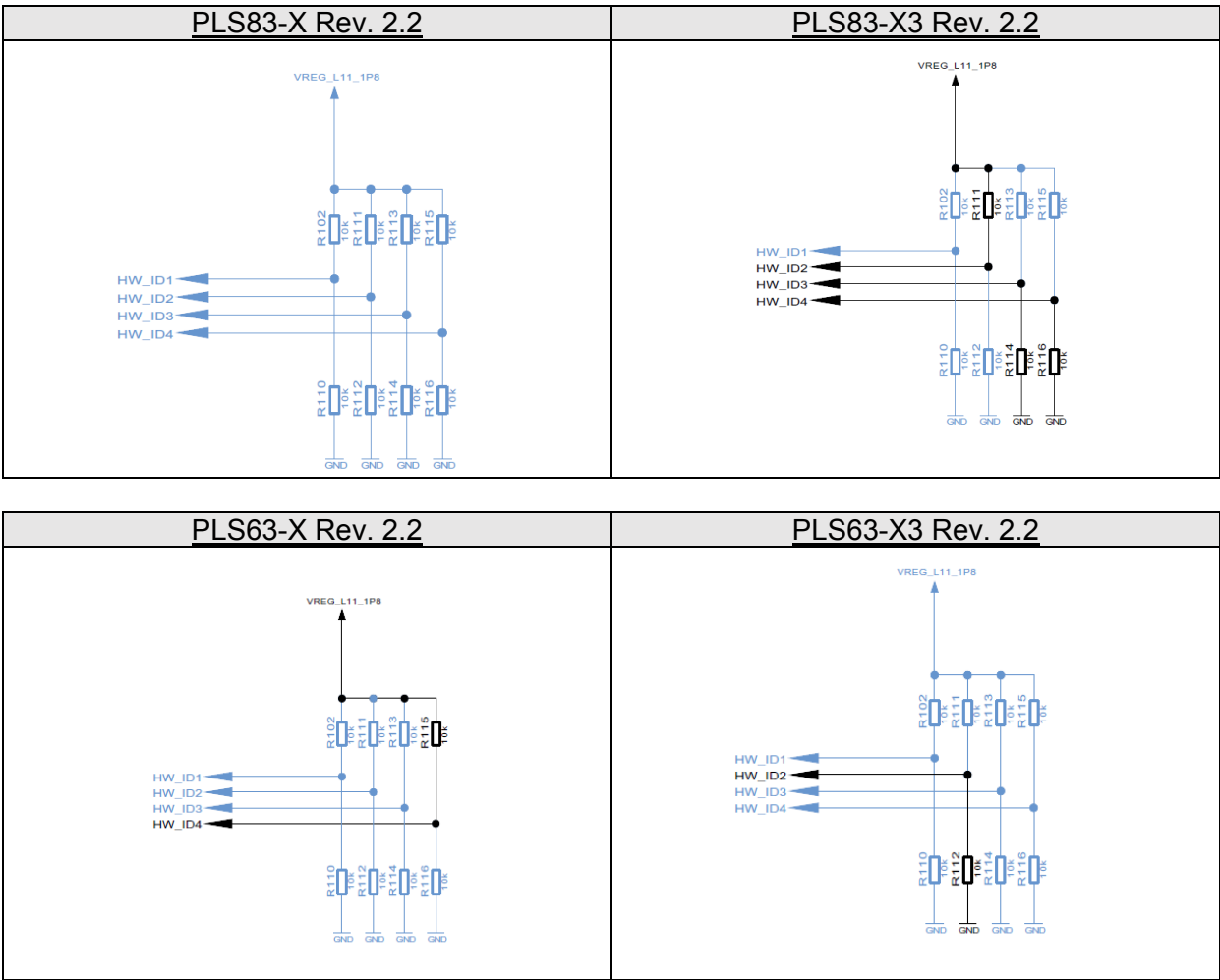
## 2 Baseband Hardware Differences between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2

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

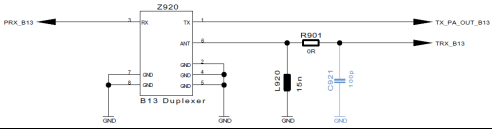
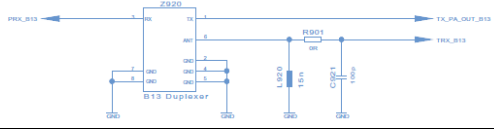
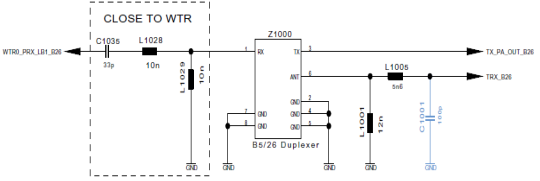
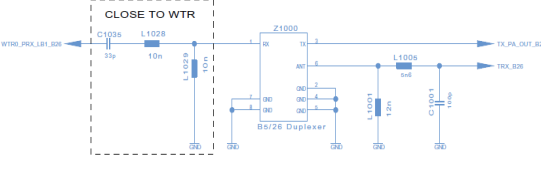
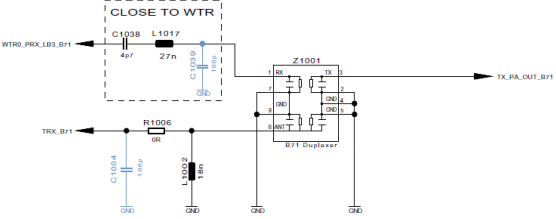
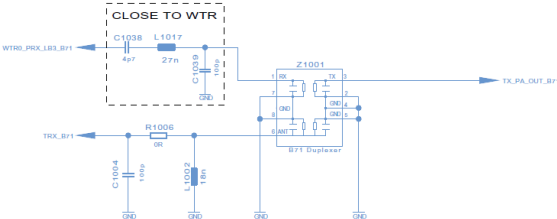
The following section highlights the schematic differences on RF between PLSx3-X Rev. 2.2 and PLSx3-X3 Rev. 2.2. The non-supporting bands are disabled in schematic RF part.

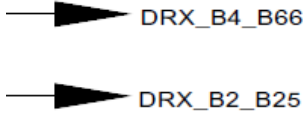
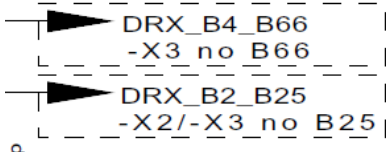
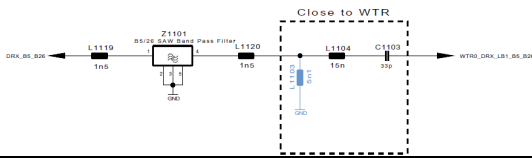
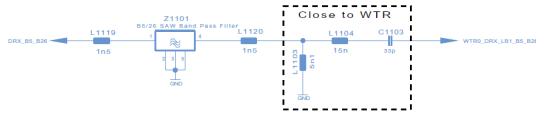
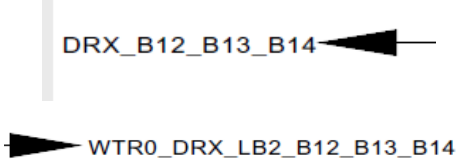
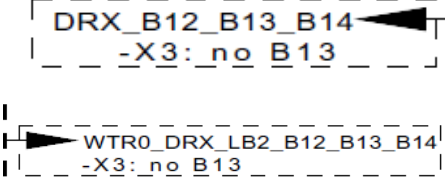
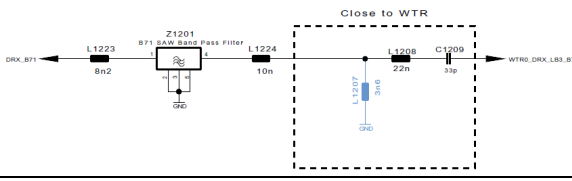
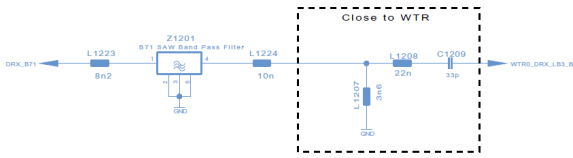
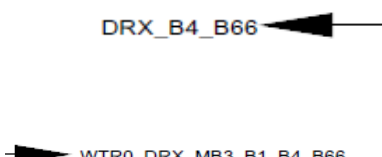
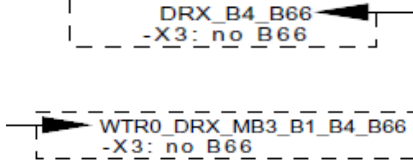
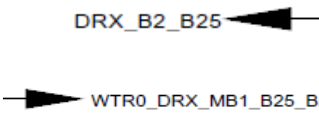
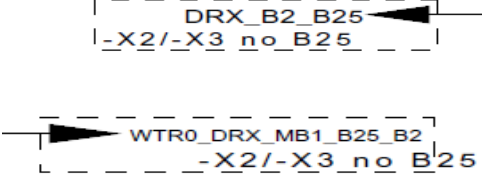
Note: Components in black are populated, components in blue are not populated.

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



<p>→ TRX_B13</p>	<p>   </p>
<p>   <b>B26/B5 TX</b> </p>	<p>   <b>B26/B5 TX</b>  -X2/-X3 no B26/B5 </p>
<p>   <b>B71 TX</b> </p>	<p>   <b>B71 TX</b>  -X2/-X3 no B71 </p>
<p>   <b>B13 TX</b> </p>	<p>   <b>B13 TX</b>  -X3 no B13 </p>
<p>   <b>B25/B2 TX</b> </p> <p>   <b>B66/B4 TX</b> </p>	<p>   <b>B25/B2 TX</b>  -X2/-X3 no B25 </p> <p>   <b>B66/B4 TX</b>  -X3 no B66 </p>
<p>     </p>	<p>     </p>
<p>   </p>	<p>   </p>

<p><b>B13</b></p> 	<p><b>B13</b> -X3 no B13</p> 
<p><b>B5 / B26</b></p> 	<p>-X: B5 / B26 -X2/-X3: no B5/B26</p> 
<p><b>B71</b></p> 	<p>-X: B71 -X2/-X3: no B71</p> 
<p>WTR0_PRX_MB1_B25_B2</p> <p>TRX_B2_B25</p>	<p>WTR0_PRX_MB1_B25_B2 -X2/-X3 no B25</p> <p>TRX_B2_B25 -X2/-X3 no B25</p>
<p>WTR0_PRX_MB3_B4_B66</p> <p>TX_PA_OUT_B4_B66</p>	<p>WTR0_PRX_MB3_B4_B66 -X3: no B66</p> <p>TX_PA_OUT_B4_B66 -X3: no B66</p>
<p>DRX_B71</p> <p>DRX_B12_B13_B14</p> <p>DRX_B5_B26</p>	<p>DRX_B71 -X2/-X3 no B71</p> <p>DRX_B12_B13_B14 -X3 no B13</p> <p>DRX_B5_B26 -X2/-X3 no B5/26</p>

	
<p>B5 / B26 DRX</p> 	<p>B5 / B26 DRX</p> <p>-X2/-X3: no B5/B26</p> 
	
<p>B71 DRX</p> 	<p>B71 DRX</p> <p>-X2/-X3: no B71</p> 
	
	



**THALES DIS AIS Deutschland GmbH**  
Werinherstrasse 81  
81541 Munich  
Germany

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