FMC Loopback Card User Guide

FMC LOOPBACK USER GUIDE version 1.1 May 06th 2015

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Revision History:

Release	DATE
Revision 1.0	03/05/2015
Revision 1.1	05/06/2015

Table 1: Revision History

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About this Guide

The User guide provides relevant information on how to use the FMC Loopback card with a compatible Xilinx reference board. For additional information please contact info@whizzsystems.com at Whizz Systems Inc. located at 3240 Scott Blvd, Santa Clara, CA 95054 United States of America.

Overview

Quick Start

Systems Requirements;

- VITA57.1 Compliant mating Xilinx Reference Board.

Package Contents;

- FMC Loopback Card
- Two 10mm Stand-off
- Four M2.5 screws

Necessary Equipment;

- None

System Setup;

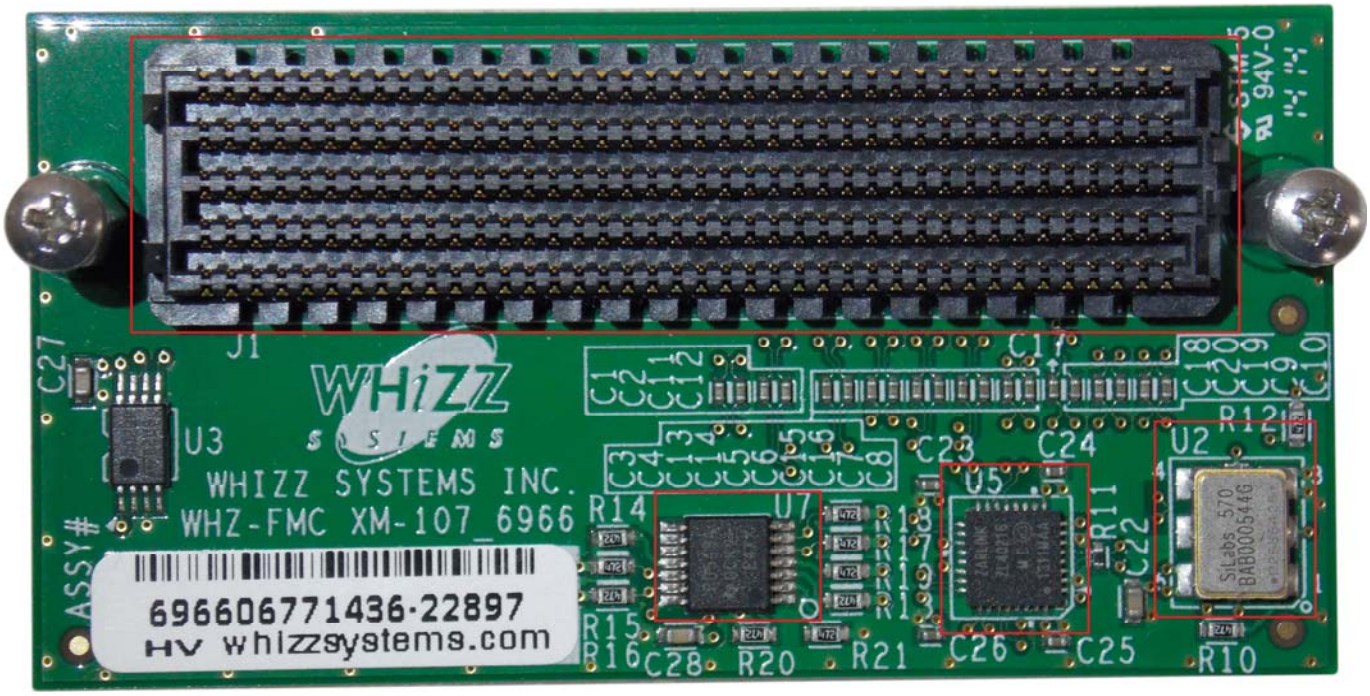

Figure 1: FMC Loopback Card (Component Side)

1. J1 --- FMC Plug Connector High Pin Count (FMC HPC)
2. U3 --- EEPROM
3. U5 --- Clock Buffer/Distribution chip
4. U2 --- Clock Generator
5. U7 --- I2C Buffer

Board Technical Description;

FMC Loopback logical connectivity is as shown in Figure 2 below;

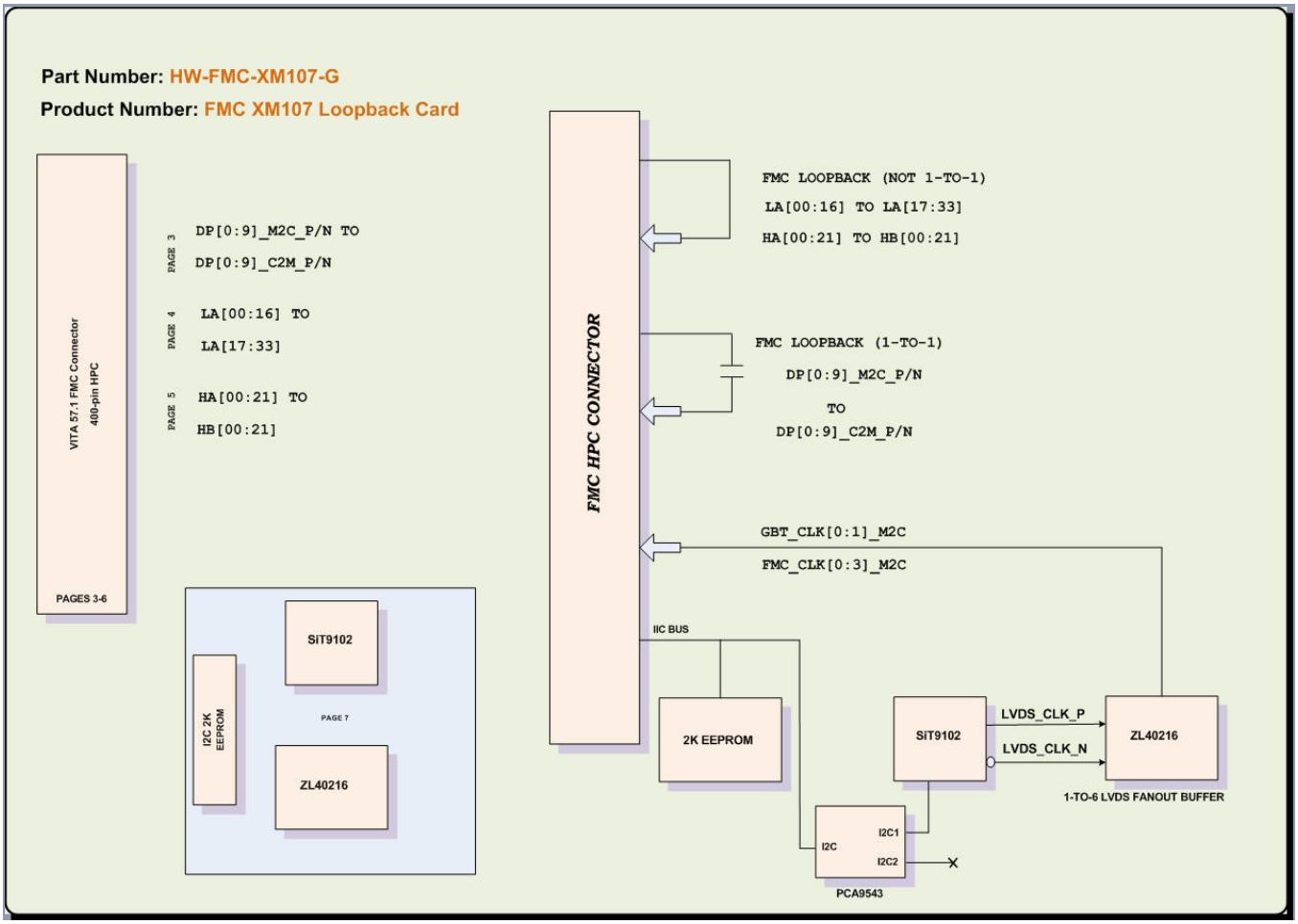

Figure 2

Detail Description;

The Oscillator U2 is programmable (1-220 MHz & 3.3V supply) through I2C interface from Host card. The FMC LOOPBACK Card provides three sets of loopback connections as shown in Table 2, 3, 4;

- DP [0:9]_M2C_P/N to DP [0:9]_C2M_P/N --- trace lengths matched between 2.57" to 2.87 inches
- LA [00:16] to LA [17:33] --- trace lengths matched between 1.86" to 2.01"
- HA [00:21] to HB [00:21] --- trace lengths matched between 3.15" to 3.3"

FMC MGT LOOPBACK			
DP [0:9]_M2C_P/N To DP [0:9]_C2M_P/N			
Pin name	Pin Number	Pin name	Pin Number
DP0_M2C_N	C7	DP0_C2M_N	C3
DP0_M2C_P	C6	DP0_C2M_P	C2
DP1_M2C_N	A3	DP1_C2M_N	A23
DP1_M2C_P	A2	DP1_C2M_P	A22
DP2_M2C_N	A7	DP2_C2M_N	A27
DP2_M2C_P	A6	DP2_C2M_P	A26
DP3_M2C_N	A11	DP3_C2M_N	A31
DP3_M2C_P	A10	DP3_C2M_P	A30
DP4_M2C_N	A15	DP4_C2M_N	A35
DP4_M2C_P	A14	DP4_C2M_P	A34
DP5_M2C_N	A19	DP5_C2M_N	A39
DP5_M2C_P	A18	DP5_C2M_P	A38
DP6_M2C_N	B17	DP6_C2M_N	B37
DP6_M2C_P	B16	DP6_C2M_P	B36
DP7_M2C_N	B13	DP7_C2M_N	B33
DP7_M2C_P	B12	DP7_C2M_P	B32
DP8_M2C_N	B9	DP8_C2M_N	B29
DP8_M2C_P	B8	DP8_C2M_P	B28
DP9_M2C_N	B5	DP9_C2M_N	B25
DP9_M2C_P	B4	DP9_C2M_P	B24

Table 2: FMC MGT Loopback

FMC LA Bank LOOPBACK				
LA [00:16] To LA [17:33]				
Pin name	Pin Number		Pin name	Pin Number
LA00_N_CC	G7		LA17_N_CC	D21
LA00_P_CC	G6		LA17_P_CC	D20
LA01_N_CC	D9		LA18_N_CC	C23
LA01_P_CC	D8		LA18_P_CC	C22
LA02_N	H8		LA19_N	H23
LA02_P	H7		LA19_P	H22
LA03_N	G10		LA20_N	G22
LA03_P	G9		LA20_P	G21
LA04_N	H11		LA21_N	H26
LA04_P	H10		LA21_P	H25
LA05_N	D12		LA22_N	G25
LA05_P	D11		LA22_P	G24
LA06_N	C11		LA23_N	D24
LA06_P	C10		LA23_P	D23
LA07_N	H14		LA24_N	H29
LA07_P	H13		LA24_P	H28
LA08_N	G13		LA25_N	G28
LA08_P	G12		LA25_P	G27
LA09_N	D15		LA26_N	D27
LA09_P	D14		LA26_P	D26
LA10_N	C15		LA27_N	C27
LA10_P	C14		LA27_P	C26
LA11_N	H17		LA28_N	H32
LA11_P	H16		LA28_P	H31
LA12_N	G16		LA29_N	G31
LA12_P	G15		LA29_P	G30
LA13_N	D18		LA30_N	H35
LA13_P	D17		LA30_P	H34
LA14_N	C19		LA31_N	G34
LA14_P	C18		LA31_P	G33
LA15_N	H20		LA32_N	H38
LA15_P	H19		LA32_P	H37
LA16_N	G19		LA33_N	G37
LA16_P	G18		LA33_P	G36

Table 3: FMC LA Bank Loopback

HA [00:21] To HB [00:21]				
HA00_N_CC	F5		HB00_N_CC	K26
HA00_P_CC	F4		HB00_P_CC	K25
HA01_N_CC	E3		HB06_N_CC	K29
HA01_P_CC	E2		HB06_P_CC	K28
HA02_N	K8		HB01_N	J25
HA02_P	K7		HB01_P	J24
HA03_N	J7		HB02_N	F23
HA03_P	J6		HB02_P	F22
HA04_N	F8		HB03_N	E22
HA04_P	F7		HB03_P	E21
HA05_N	E7		HB04_N	F26
HA05_P	E6		HB04_P	F25
HA06_N	K11		HB05_N	E25
HA06_P	K10		HB05_P	E24
HA07_N	J10		HB07_N	J28
HA07_P	J9		HB07_P	J27
HA08_N	F11		HB08_N	F29
HA08_P	F10		HB08_P	F28
HA09_N	E10		HB09_N	E28
HA09_P	E9		HB09_P	E27
HA10_N	K14		HB10_N	K32
HA10_P	K13		HB10_P	K31
HA11_N	J13		HB11_N	J31
HA11_P	J12		HB11_P	J30
HA12_N	F14		HB12_N	F32
HA12_P	F13		HB12_P	F31
HA13_N	E13		HB13_N	E31
HA13_P	E12		HB13_P	E30
HA14_N	J16		HB14_N	K35
HA14_P	J15		HB14_P	K34
HA15_N	F17		HB15_N	J34
HA15_P	F16		HB15_P	J33
HA16_N	E16		HB16_N	F35
HA16_P	E15		HB16_P	F34
HA17_N_CC	K17		HB17_N_CC	K38
HA17_P_CC	K16		HB17_P_CC	K37
HA18_N	J19		HB18_N	J37
HA18_P	J18		HB18_P	J36

HA19_N	F20		HB19_N	E34
HA19_P	F19		HB19_P	E33
HA20_N	E19		HB20_N	F38
HA20_P	E18		HB20_P	F37
HA21_N	K20		HB21_N	E37
HA21_P	K19		HB21_P	E36
HA22_N	J22		HA23_N	K23
HA22_P	J21		HA23_P	K22

Table 4: FMC HA-to-HB Bank Loopback

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