

Mango Communications FMC-BB-4DA
Quad-DAC FMC Module
Rev 1.0

- 1 - Table of Contents
- 2 - FMC HPC Connector
- 3 - D/A Converters
- 4 - Misc

Copyright (c) 2012 Mango Communications

FMC HPC Bank LA		
LA00_N_CC	G7	DAC1_SCLK
LA00_P_CC	G6	DAC1_RESET
LA01_N_CC	D9	DAC1_DB12
LA01_P_CC	D8	DAC1_CSN
LA02_N	H8	DAC1_DB13
LA02_P	H7	DAC1_SDIO
LA03_N	G10	DAC1_DB10
LA03_P	G9	DAC1_DB11
LA04_N	H11	DAC1_DB7
LA04_P	H10	DAC1_DB9
LA05_N	D12	DAC1_DB3
LA05_P	D11	DAC1_DB6
LA06_N	C11	DAC1_DB5
LA06_P	C10	DAC1_DB8
LA07_N	H14	DAC1_DB0
LA07_P	H13	DAC1_DB2
LA08_N	G13	DAC1_DB1
LA08_P	G12	DAC1_DB4
LA09_N	D15	DAC1_CLK
LA09_P	D14	LA_AVAIL29
LA10_N	C15	LA_AVAIL18
LA10_P	C14	LA_AVAIL11
LA11_N	H17	DAC2_RESET
LA11_P	H16	LA_AVAIL31
LA12_N	G16	LA_AVAIL4
LA12_P	G15	LA_AVAIL19
LA13_N	D18	LA_AVAIL12
LA13_P	D17	LA_AVAIL17
LA14_N	C19	LA_AVAIL0
LA14_P	C18	LA_AVAIL32
LA15_N	H20	DAC2_DB13
LA15_P	H19	DAC2_SDIO
LA16_N	G19	DAC2_CSN
LA16_P	G18	DAC2_SCLK
LA17_N_CC	D21	LA_AVAIL3
LA17_P_CC	D20	LA_AVAIL2
LA18_N_CC	C23	LA_AVAIL33
LA18_P_CC	C22	LA_AVAIL1
LA19_N	H23	DAC2_DB9
LA19_P	H22	DAC2_DB11
LA20_N	G22	DAC2_DB10
LA20_P	G21	DAC2_DB12
LA21_N	H26	DAC2_DB5
LA21_P	H25	DAC2_DB7
LA22_N	G25	DAC2_DB8
LA22_P	G24	LA_AVAIL9
LA23_N	D24	LA_AVAIL7
LA23_P	D23	LA_AVAIL8
LA24_N	H29	LA_AVAIL14
LA24_P	H28	DAC2_DB3
LA25_N	G28	LA_AVAIL30
LA25_P	G27	DAC2_DB4
LA26_N	D27	LA_AVAIL13
LA26_P	D26	DAC2_DB6
LA27_N	C27	LA_AVAIL15
LA27_P	C26	LA_AVAIL16
LA28_N	H32	DAC2_CLK
LA28_P	H31	DAC2_DB0
LA29_N	G31	DAC2_DB1
LA29_P	G30	DAC2_DB2
LA30_N	H35	LA_AVAIL21
LA30_P	H34	LA_AVAIL22
LA31_N	G34	LA_AVAIL23
LA31_P	G33	LA_AVAIL24
LA32_N	H38	LA_AVAIL25
LA32_P	H37	LA_AVAIL26
LA33_N	G37	LA_AVAIL27
LA33_P	G36	LA_AVAIL28

FMC_HPC_MC

FMC HPC Bank HB		
DAC1_DB0	DAC1_DB0	
DAC1_DB1	DAC1_DB1	
DAC1_DB2	DAC1_DB2	
DAC1_DB3	DAC1_DB3	
DAC1_DB4	DAC1_DB4	
DAC1_DB5	DAC1_DB5	
DAC1_DB6	DAC1_DB6	
DAC1_DB7	DAC1_DB7	
DAC1_DB8	DAC1_DB8	
DAC1_DB9	DAC1_DB9	
DAC1_DB10	DAC1_DB10	
DAC1_DB11	DAC1_DB11	
DAC1_DB12	DAC1_DB12	
DAC1_DB13	DAC1_DB13	
DAC1_RESET	DAC1_RESET	
DAC1_SCLK	DAC1_SCLK	
DAC1_SDIO	DAC1_SCLK	
DAC1_CSn	DAC1_SDIO	
DAC1_CLK	DAC1_CSn	
DAC1_CLK	DAC1_CLK	
DAC2_CLK	DAC2_CLK	
DAC2_RESET	DAC2_RESET	
DAC2_SCLK	DAC2_RESET	
DAC2_SDIO	DAC2_SCLK	
DAC2_CSn	DAC2_SDIO	
DAC2_DB0	DAC2_DB0	
DAC2_DB1	DAC2_DB1	
DAC2_DB2	DAC2_DB2	
DAC2_DB3	DAC2_DB3	
DAC2_DB4	DAC2_DB3	
DAC2_DB5	DAC2_DB4	
DAC2_DB6	DAC2_DB5	
DAC2_DB7	DAC2_DB6	
DAC2_DB8	DAC2_DB7	
DAC2_DB9	DAC2_DB8	
DAC2_DB10	DAC2_DB9	
DAC2_DB11	DAC2_DB10	
DAC2_DB12	DAC2_DB11	
DAC2_DB13	DAC2_DB12	

FMC HPC Bank HB		
HB00_N_CC	K26	
HB00_P_CC	K25	
HB01_N	J25	
HB01_P	J24	
HB02_N	F23	
HB02_P	F22	
HB03_N	E22	
HB03_P	E21	
HB04_N	F26	
HB04_P	F25	
HB05_N	E25	
HB05_P	E24	
HB06_N_CC	K29	
HB06_P_CC	K28	
HB07_N	J28	
HB07_P	J27	
HB08_N	F29	
HB08_P	F28	
HB09_N	E28	
HB09_P	E27	
HB10_N	K32	
HB10_P	K31	
HB11_N	J31	
HB11_P	J30	
HB12_N	F32	
HB12_P	F31	
HB13_N	E31	
HB13_P	E30	
HB14_N	K35	
HB14_P	K34	
HB15_N	J34	
HB15_P	J33	
HB16_N	F35	
HB16_P	F34	
HB17_N_CC	K38	
HB17_P_CC	K37	
HB18_N	J37	
HB18_P	J36	
HB19_N	E34	
HB19_P	E33	
HB20_N	F37	
HB20_P	E37	
HB21_N	E36	
HB21_P	E35	

FMC_HPC_MC

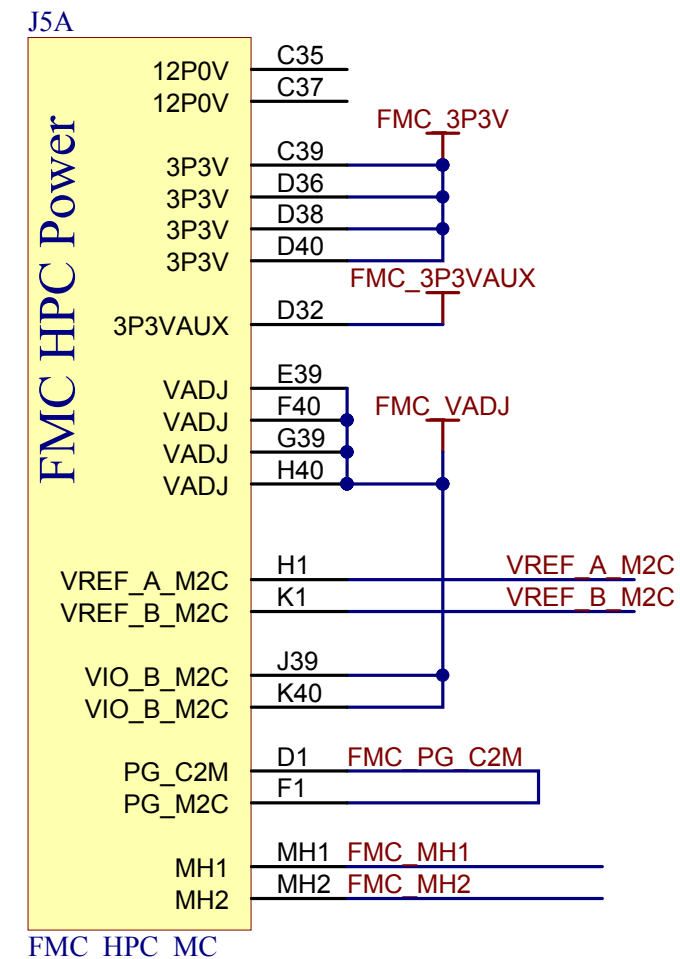
FMC HPC Bank HA		
HA00_N_CC	F5	
HA00_P_CC	F4	
HA01_N_CC	E3	
HA01_P_CC	E2	
HA02_N	K8	
HA02_P	K7	
HA03_N	J7	
HA03_P	J6	
HA04_N	F8	
HA04_P	F7	
HA05_N	E7	
HA05_P	E6	
HA06_N	K11	
HA06_P	K10	
HA07_N	J10	
HA07_P	J9	
HA08_N	F11	
HA08_P	F10	
HA09_N	E10	
HA09_P	E9	
HA10_N	K14	
HA10_P	K13	
HA11_N	J13	
HA11_P	J12	
HA12_N	F14	
HA12_P	F13	
HA13_N	E13	
HA13_P	E12	
HA14_N	J16	
HA14_P	J15	
HA15_N	F17	
HA15_P	F16	
HA16_N	E16	
HA16_P	E15	
HA17_N_CC	K17	
HA17_P_CC	K16	
HA18_N	J19	
HA18_P	J18	
HA19_N	F20	
HA19_P	F19	
HA20_N	E19	
HA20_P	E18	
HA21_N	K20	
HA21_P	K19	
HA22_N	J22	
HA22_P	J21	
HA23_N	K23	
HA23_P	K22	

FMC_HPC_MC

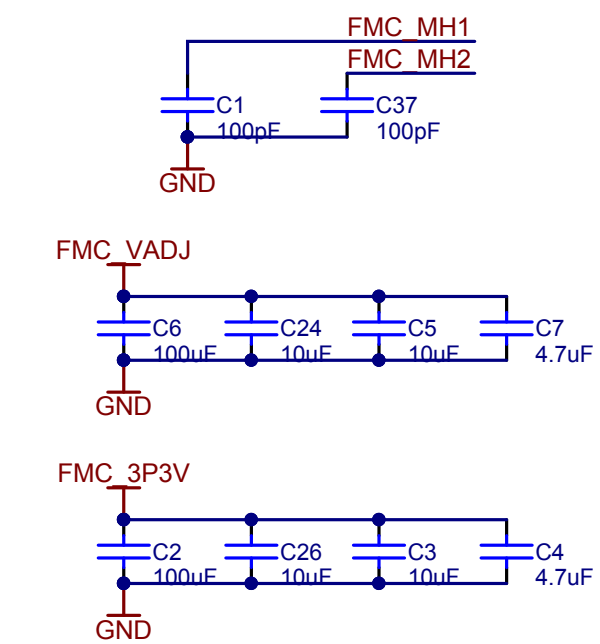
A few HPC HA IO tied to ground for easier placement of vias for LPC grounds

FMC HPC MGTs		
GBTCLK0_M2C_P	D4	
GBTCLK0_M2C_N	D5	
GBTCLK1_M2C_P	B20	
GBTCLK1_M2C_N	B21	
DP0_C2M_P	C2	
DP0_C2M_N	C3	
DP0_M2C_P	C6	
DP0_M2C_N	C7	
DP1_C2M_P	A22	
DP1_C2M_N	A23	
DP1_M2C_P	A2	
DP1_M2C_N	A3	
DP2_C2M_P	A26	
DP2_C2M_N	A27	
DP2_M2C_P	A6	
DP2_M2C_N	A7	
DP3_C2M_P	A30	
DP3_C2M_N	A31	
DP3_M2C_P	A10	
DP3_M2C_N	A11	
DP4_C2M_P	A34	
DP4_C2M_N	A35	
DP4_M2C_P	A14	
DP4_M2C_N	A15	
DP5_C2M_P	A38	
DP5_C2M_N	A39	
DP5_M2C_P	A18	
DP5_M2C_N	A19	
DP6_C2M_P	B36	
DP6_C2M_N	B37	
DP6_M2C_P	B16	
DP6_M2C_N	B17	
DP7_C2M_P	B32	
DP7_C2M_N	B33	
DP7_M2C_P	B12	
DP7_M2C_N	B13	
DP8_C2M_P	B28	
DP8_C2M_N	B29	
DP8_M2C_P	B8	
DP8_M2C_N	B9	
DP9_C2M_P	B24	
DP9_C2M_N	B25	
DP9_M2C_P	B4	
DP9_M2C_N	B5	

FMC_HPC_MC



FMC Rule 5.91: PG_M2C low when VREF_x_M2C or VIO_B_M2C are invalid. This module doesn't drive VREF, and VIO is tied to VADJ, so M2C is valid when C2M is valid.



FMC HPC Clocks & Misc		
SCL	C30	FMC I2C_SCL
SDA	C31	FMC I2C_SDA
CLK0_M2C_P	H4	
CLK0_M2C_N	H5	
CLK1_M2C_P	G2	
CLK1_M2C_N	G3	
CLK_DIR	B1	CLK DIR
CLK2_BIDIR_P	K4	SAMP_CLK FMC C2M P
CLK2_BIDIR_N	K5	SAMP_CLK FMC C2M N
CLK3_BIDIR_P	J2	RF_CLK FMC C2M P
CLK3_BIDIR_N	J3	RF_CLK FMC C2M N
TCK	D29	FMC TCK
TDI	D30	FMC TDI_TDO
TDO	D31	
TMS	D33	FMC TMS
TRST_L	D34	
RES0	B40	
PRSENT_M2C_L	H2	
GA0	C34	FMC GA0
GA1	D35	FMC GA1

FMC_HPC_MC

FMC HPC Ground		
E29	GND	A1
E32	GND	A13
E35	GND	A13
E38	GND	A16
E4	GND	A17
E40	GND	A20
E5	GND	A21
E8	GND	A24
F12	GND	A25
F15	GND	A28
F18	GND	A29
F2	GND	A32
F21	GND	A33
F24	GND	A36
F27	GND	A37
F3	GND	A4
F30	GND	A40
F33	GND	A5
F36	GND	A8
F39	GND	A9
F6	GND	B10
F9	GND	B11
G1	GND	B14
G11	GND	B15
G14	GND	B18
G17	GND	B19
G20	GND	B2
G23	GND	B22
G26	GND	B23
G29	GND	B26
G32	GND	B27
G35	GND	B3
G38	GND	B30
G4	GND	B31
G40	GND	B34
G5	GND	B35
G8	GND	B38
H12	GND	B39
H15	GND	B6
H18	GND	B7
H21	GND	C1
H24	GND	C12
H27	GND	C13
H3	GND	C16
H30	GND	C17
H33	GND	C20
H36	GND	C21
H39	GND	C24
H6	GND	C25
H9	GND	C28
J1	GND	C29
J11	GND	C32
J14	GND	C33
J17	GND	C36
J20	GND	C38
J23	GND	C4
J26	GND	C40
J29	GND	C5
J32	GND	C8
J35	GND	C9
J38	GND	D10
J4	GND	D13
J40	GND	D16
J5	GND	D19
J8	GND	D2
K12	GND	D22
K15	GND	D25
K18	GND	D28
K2	GND	D3
K21	GND	D37
K24	GND	D39
K27	GND	D6
K3	GND	D7
K30	GND	E1
K33	GND	E11
K36	GND	E14
K39	GND	E17
K6	GND	E20
K9	GND	E23
E26	GND	E26

FMC_HPC_MC

