

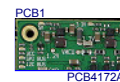


EFR32MG12 Dual Band Radio Board

2.4 GHz / 490 MHz 19 dBm, VMCU to PAVDD

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Revision History

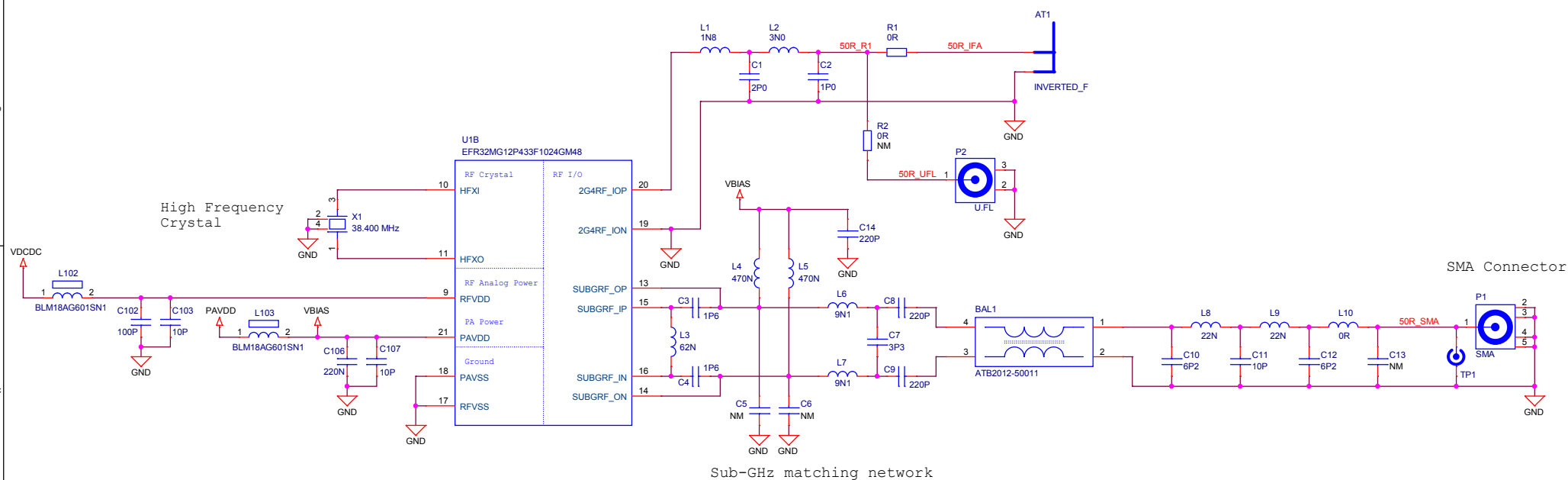
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SCHEMATIC1

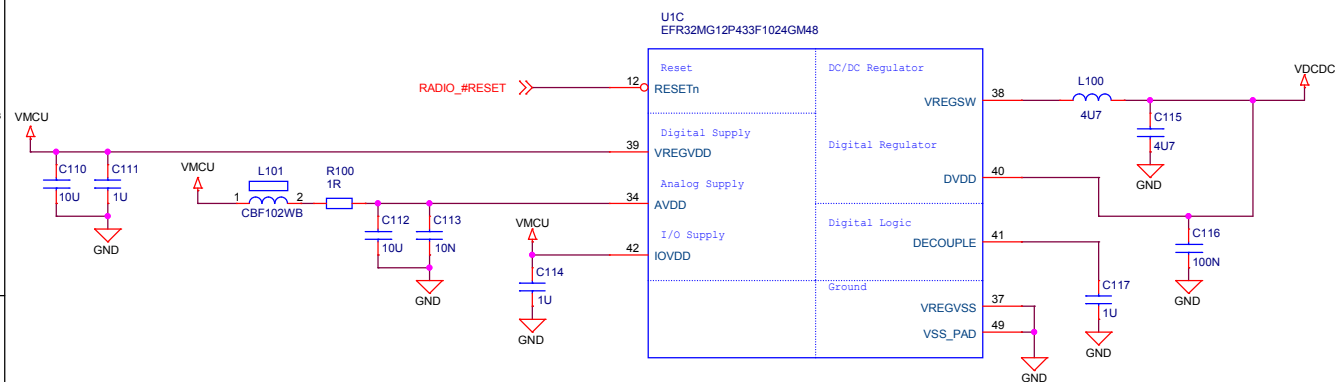


Designed: <OrgAddr1>		Approved: <OrgAddr2>		Title Page	
Size: A3		BOM Doc No: <Cage Code>		Document number BRD4172A	
Design Created Date: Friday, November 03, 2017		Sheet Created Date Friday, November 03, 2017		Revision A00	
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Antenna & Radio Interface

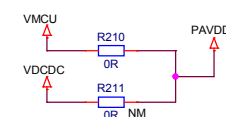


Power & Decoupling

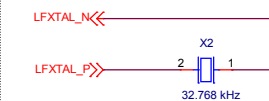


PAVDD Configuration

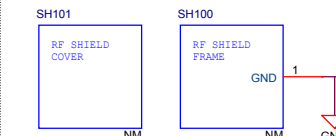
	Power Config 1 VMCU to PAVDD	Power Config 2 DCDC to PAVDD
R210	Mount	Not mount
R211	Not mount	Mount



Low Frequency Crystal



RF Shielding



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		Schematic Title	
EFR32MG12 Dual Band 2400/490 MHz Radio Board		Page Title	
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A3		Friday, November 03, 2017	

The diagram illustrates the pin mapping for the EFR32 peripheral, showing connections for various pins and components. The connections are organized into several sections:

- RADIO_PA[5..0]:**
 - EFR32 Pin: RADIO_PA0, RADIO_PA1, RADIO_PA2, RADIO_PA3, RADIO_PA4, RADIO_PA5
 - EFR32 Peripheral: US0_TX#0, US0_RX#0, US0_CLK#0, US0_CS#0, US1_CS#1
 - EXP Header Connection: EXP_HEADER12, EXP_HEADER14, EXP_HEADER3, EXP_HEADERS, EXP_HEADERS
 - WSTK Breakout Pin: WSTK_P9, WSTK_P11, WSTK_P0, WSTK_P2, WSTK_P14, WSTK_P16
 - WSTK Peripheral Connection: WSTK_P16, WSTK_P16
 - WSTK_FI[21..0]: WSTK_F6, WSTK_F7, WSTK_F8, WSTK_F9
 - TP_VCOM_TX, TP_VCOM_RX, TP_VCOM_CTS, TP_VCOM_RTS
- RADIO_PB[15..11]:**
 - RADIO_PB11, RADIO_PB12, RADIO_PB13, RADIO_PB14, RADIO_PB15
 - FRC_DCLK#6, FRC_DOUT#6, FRC_DFRAME#6
 - LFXTAL_P, LFXTAL_N
 - WSTK_P18, WSTK_P20, WSTK_P22
 - PTI_CLK, PTI_DATA, PTI_STNC
 - WSTK_F21, WSTK_F20, WSTK_F19
- RADIO_PC[11..6]:**
 - RADIO_PC6, RADIO_PC7, RADIO_PC8
 - US1_TX#11, US1_RX#11, US1_CLK#11
 - FLASH_MOSI, FLASH_MISO, FLASH_SCLK
 - RP2000 (100R)
 - EXP_HEADER6, EXP_HEADER4, EXP_HEADERS
 - WSTK_P3, WSTK_P1, WSTK_P5
 - WSTK_P1, WSTK_P5
 - DISP_SI, DISP_SCLK
 - WSTK_F16, WSTK_F15
 - RADIO_PC9, RADIO_PC10, RADIO_PC11
 - US1_CS#11, I2C0_SCL#14, I2C0_SDA#16
 - EXP_HEADER10, EXP_HEADER15, EXP_HEADERS
 - WSTK_P7, WSTK_P12, WSTK_P13
- RADIO_PD[15..13]:**
 - RADIO_PD13, RADIO_PD14, RADIO_PD15
 - US1_CS#19
 - WSTK_P31, WSTK_P33, WSTK_P35
 - WSTK_P31, WSTK_P33, WSTK_P35
 - DISP_EXTCONN, DISP_SCS, DISP_ENABLE
 - WSTK_F18, WSTK_F17, WSTK_F14
 - VMCU, R206, R205, R203, R204
 - SENSOR_ENABLE, WSTK_P37
- RADIO_PF[7..0]:**
 - RADIO_PF0, RADIO_PF1, RADIO_PF2, RADIO_PF3, RADIO_PF5, RADIO_PF6, RADIO_PF7
 - DBG_SWCLK#0, DBG_SWDIO#0, DBG_SWDIO#0, DBG_TDO#0, DBG_TDI#0
 - EXP_HEADERS, EXP_HEADERS, EXP_HEADERS
 - WSTK_P24, WSTK_P26, WSTK_P28, WSTK_P10, WSTK_P8, WSTK_P32, WSTK_P4, WSTK_P6
 - WSTK_P24, WSTK_P26, WSTK_P28, WSTK_P10, WSTK_P8, WSTK_P32, WSTK_P4, WSTK_P6
 - DBG_TCK_SWCLK, DBG_TMS_SWCLK, DBG_TDO_SWO, DBG_TDI, UIF_LED0, UIF_BUTTON0, UIF_BUTTON1
 - WSTK_F1, WSTK_F0, WSTK_F2, WSTK_F3, WSTK_F10, WSTK_F11, WSTK_F12, WSTK_F13
 - TP_DBG_TCK_SWCLK, TP_DBG_TMS_SWCLK, TP_DBG_TDO_SWO, TP_DBG_TDI, TP_DBG_RESET, TP_DBG_RESET

The diagram also includes a section for the EFR32 peripheral, showing connections for various pins and components. The connections are organized into several sections:

- RADIO_PA[5..0]:**
 - EFR32 Pin: RADIO_PA0, RADIO_PA1, RADIO_PA2, RADIO_PA3, RADIO_PA4, RADIO_PA5
 - EFR32 Peripheral: US0_TX#0, US0_RX#0, US0_CLK#0, US0_CS#0, US1_CS#1
 - EXP Header Connection: EXP_HEADER12, EXP_HEADER14, EXP_HEADER3, EXP_HEADERS, EXP_HEADERS
 - WSTK Breakout Pin: WSTK_P9, WSTK_P11, WSTK_P0, WSTK_P2, WSTK_P14, WSTK_P16
 - WSTK Peripheral Connection: WSTK_P16, WSTK_P16
 - WSTK_FI[21..0]: WSTK_F6, WSTK_F7, WSTK_F8, WSTK_F9
 - TP_VCOM_TX, TP_VCOM_RX, TP_VCOM_CTS, TP_VCOM_RTS
- RADIO_PB[15..11]:**
 - RADIO_PB11, RADIO_PB12, RADIO_PB13, RADIO_PB14, RADIO_PB15
 - FRC_DCLK#6, FRC_DOUT#6, FRC_DFRAME#6
 - LFXTAL_P, LFXTAL_N
 - WSTK_P18, WSTK_P20, WSTK_P22
 - PTI_CLK, PTI_DATA, PTI_STNC
 - WSTK_F21, WSTK_F20, WSTK_F19
- RADIO_PC[11..6]:**
 - RADIO_PC6, RADIO_PC7, RADIO_PC8
 - US1_TX#11, US1_RX#11, US1_CLK#11
 - FLASH_MOSI, FLASH_MISO, FLASH_SCLK
 - RP2000 (100R)
 - EXP_HEADER6, EXP_HEADER4, EXP_HEADERS
 - WSTK_P3, WSTK_P1, WSTK_P5
 - WSTK_P1, WSTK_P5
 - DISP_SI, DISP_SCLK
 - WSTK_F16, WSTK_F15
 - RADIO_PC9, RADIO_PC10, RADIO_PC11
 - US1_CS#11, I2C0_SCL#14, I2C0_SDA#16
 - EXP_HEADER10, EXP_HEADER15, EXP_HEADERS
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- RADIO_PD[15..13]:**
 - RADIO_PD13, RADIO_PD14, RADIO_PD15
 - US1_CS#19
 - WSTK_P31, WSTK_P33, WSTK_P35
 - WSTK_P31, WSTK_P33, WSTK_P35
 - DISP_EXTCONN, DISP_SCS, DISP_ENABLE
 - WSTK_F18, WSTK_F17, WSTK_F14
 - VMCU, R206, R205, R203, R204
 - SENSOR_ENABLE, WSTK_P37
- RADIO_PF[7..0]:**
 - RADIO_PF0, RADIO_PF1, RADIO_PF2, RADIO_PF3, RADIO_PF5, RADIO_PF6, RADIO_PF7
 - DBG_SWCLK#0, DBG_SWDIO#0, DBG_SWDIO#0, DBG_TDO#0, DBG_TDI#0
 - EXP_HEADERS, EXP_HEADERS, EXP_HEADERS
 - WSTK_P24, WSTK_P26, WSTK_P28, WSTK_P10, WSTK_P8, WSTK_P32, WSTK_P4, WSTK_P6
 - WSTK_P24, WSTK_P26, WSTK_P28, WSTK_P10, WSTK_P8, WSTK_P32, WSTK_P4, WSTK_P6
 - DBG_TCK_SWCLK, DBG_TMS_SWCLK, DBG_TDO_SWO, DBG_TDI, UIF_LED0, UIF_BUTTON0, UIF_BUTTON1
 - WSTK_F1, WSTK_F0, WSTK_F2, WSTK_F3, WSTK_F10, WSTK_F11, WSTK_F12, WSTK_F13
 - TP_DBG_TCK_SWCLK, TP_DBG_TMS_SWCLK, TP_DBG_TDO_SWO, TP_DBG_TDI, TP_DBG_RESET, TP_DBG_RESET

The diagram also includes a section for the EFR32 peripheral, showing connections for various pins and components. The connections are organized into several sections:

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 - EXP Header Connection: EXP_HEADER12, EXP_HEADER14, EXP_HEADER3, EXP_HEADERS, EXP_HEADERS
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 - WSTK_FI[21..0]: WSTK_F6, WSTK_F7, WSTK_F8, WSTK_F9
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- RADIO_PB[15..11]:**
 - RADIO_PB11, RADIO_PB12, RADIO_PB13, RADIO_PB14, RADIO_PB15
 - FRC_DCLK#6, FRC_DOUT#6, FRC_DFRAME#6
 - LFXTAL_P, LFXTAL_N
 - WSTK_P18, WSTK_P20, WSTK_P22
 - PTI_CLK, PTI_DATA, PTI_STNC
 - WSTK_F21, WSTK_F20, WSTK_F19
- RADIO_PC[11..6]:**
 - RADIO_PC6, RADIO_PC7, RADIO_PC8
 - US1_TX#11, US1_RX#11, US1_CLK#11
 - FLASH_MOSI, FLASH_MISO, FLASH_SCLK
 - RP2000 (100R)
 - EXP_HEADER6, EXP_HEADER4, EXP_HEADERS
 - WSTK_P3, WSTK_P1, WSTK_P5
 - WSTK_P1, WSTK_P5
 - DISP_SI, DISP_SCLK
 - WSTK_F16, WSTK_F15
 - RADIO_PC9, RADIO_PC10, RADIO_PC11
 - US1_CS#11, I2C0_SCL#14, I2C0_SDA#16
 - EXP_HEADER10, EXP_HEADER15, EXP_HEADERS
 - WSTK_P7, WSTK_P12, WSTK_P13
- RADIO_PD[15..13]:**
 - RADIO_PD13, RADIO_PD14, RADIO_PD15
 - US1_CS#19
 - WSTK_P31, WSTK_P33, WSTK_P35
 - WSTK_P31, WSTK_P33, WSTK_P35
 - DISP_EXTCONN, DISP_SCS, DISP_ENABLE
 - WSTK_F18, WSTK_F17, WSTK_F14
 - VMCU, R206, R205, R203, R204
 - SENSOR_ENABLE, WSTK_P37
- RADIO_PF[7..0]:**
 - RADIO_PF0, RADIO_PF1, RADIO_PF2, RADIO_PF3, RADIO_PF5, RADIO_PF6, RADIO_PF7
 - DBG_SWCLK#0, DBG_SWDIO#0, DBG_SWDIO#0, DBG_TDO#0, DBG_TDI#0
 - EXP_HEADERS, EXP_HEADERS, EXP_HEADERS
 - WSTK_P24, WSTK_P26, WSTK_P28, WSTK_P10, WSTK_P8, WSTK_P32, WSTK_P4, WSTK_P6
 - WSTK_P24, WSTK_P26, WSTK_P28, WSTK_P10, WSTK_P8, WSTK_P32, WSTK_P4, WSTK_P6
 - DBG_TCK_SWCLK, DBG_TMS_SWCLK, DBG_TDO_SWO, DBG_TDI, UIF_LED0, UIF_BUTTON0, UIF_BUTTON1
 - WSTK_F1, WSTK_F0, WSTK_F2, WSTK_F3, WSTK_F10, WSTK_F11, WSTK_F12,

I/O Port Pins

U1A
EFR32MG12P433F1024GM48

RADIO_PA[5..0] << PA0 / PA1 / PA2 / PA3 / PA4 / PA5 /

RADIO_PB[15..11] << PB11 / PB12 / PB13 / PB14 / LFXTAL_N PB15 / LFXTAL_P

RADIO_PC[11..6] << PC6 / PC7 / PC8 / PC9 / PC10 / PC11 /

RADIO_PD[15..13] << PD13 PD14 PD15

RADIO_PF[7..0] << PF0 / PF1 / PF2 / PF3 / PF4 / PF5 / PF6 / PF7 /

Serial Flash

FLASH_MOSI << D2
FLASH_SCLK << E1
FLASH_SCS << A3

VMCU

U100A
MX25R8035F
SI / SIO0 SO / SIO1
SCLK CS#
WP# / SIO2 RESET# / SIO3

C3 >> FLASH_MISO

R103
330K

U100B
MX25R8035F
VCC A1
GND B2

C124
100N

GND

SCHEMATIC1

Schematic Title
EFR32MG12 Dual Band 2400/490 MHz Radio

Page Title
I/O Port Connections

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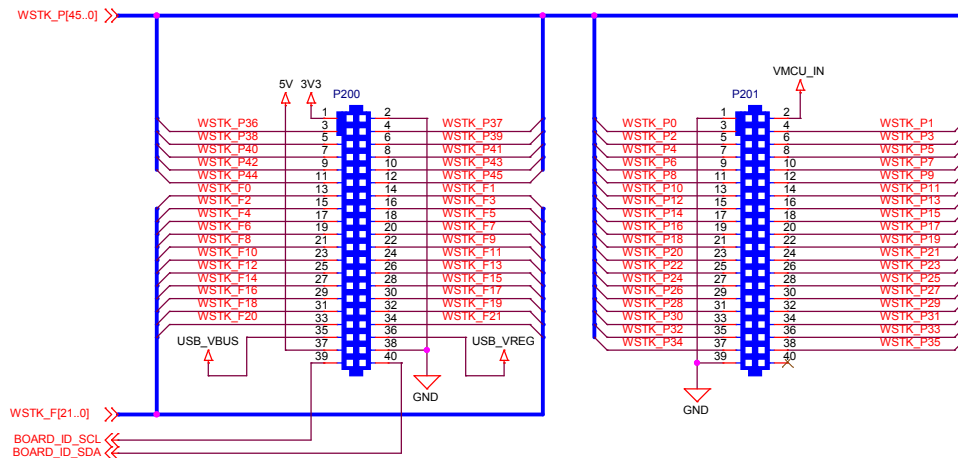
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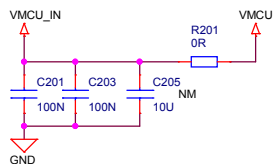
Revision
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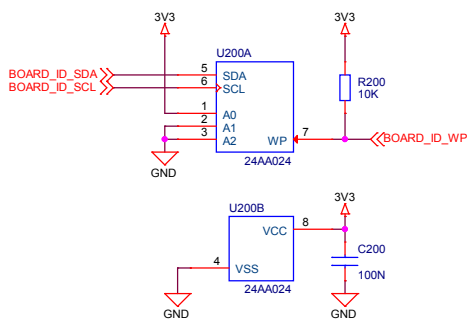
WSTK Connectors



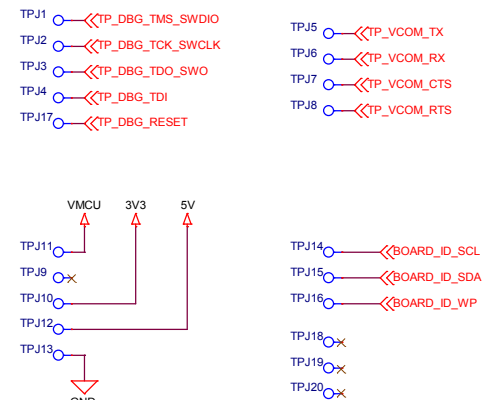
WSTK Power Decoupling




Board Identification



Test Points



SCHEMATIC1

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