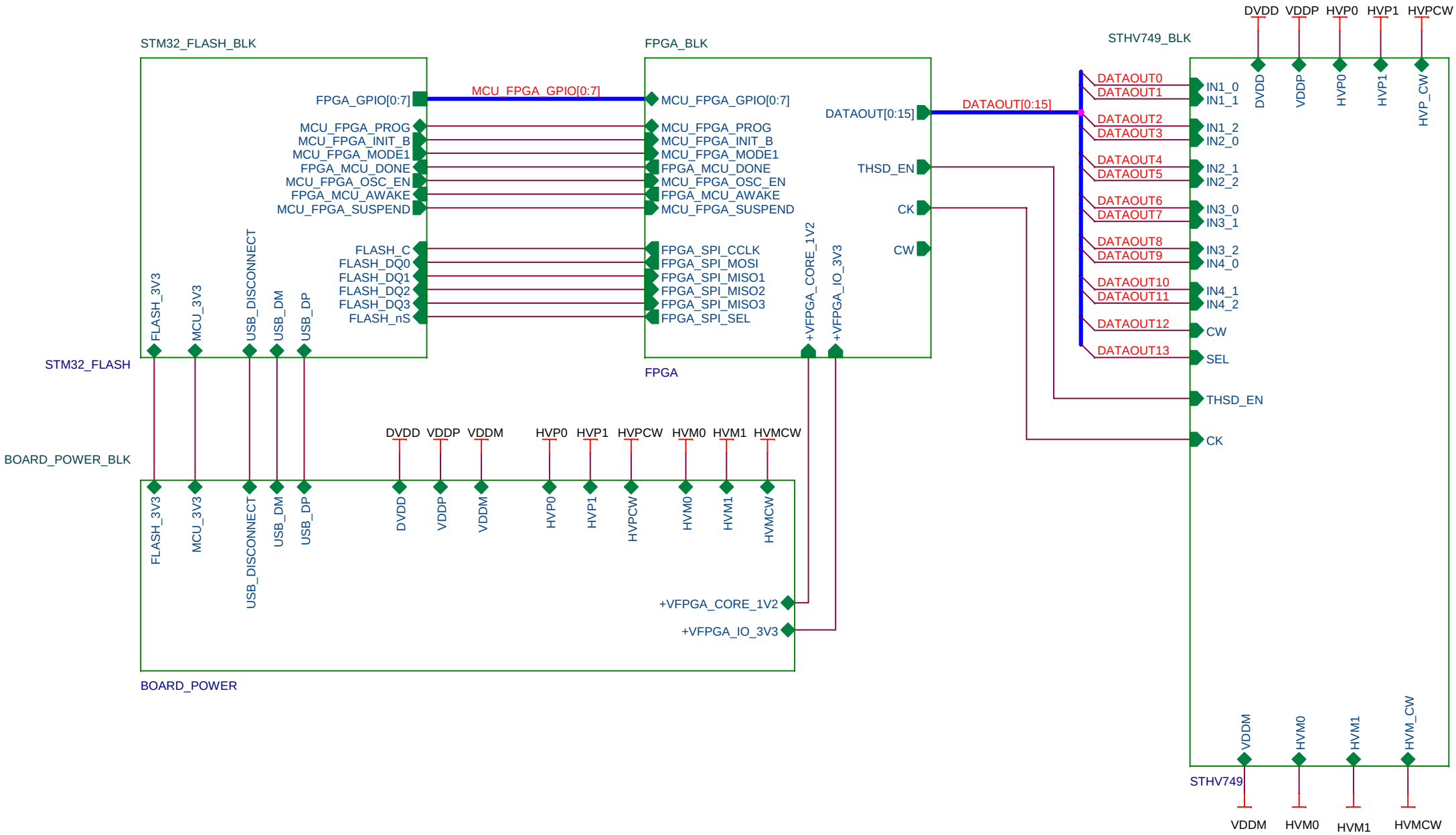
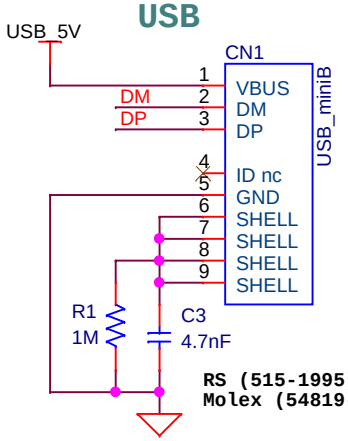
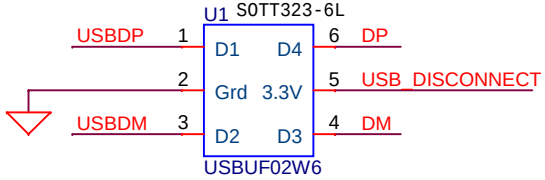
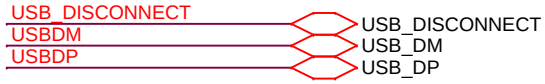

STM32_FLASH_BLK
FPGA_BLK
STHV749_BLK
FPGA_GPIO[0:7]
MCU_FPGA_GPIO[0:7]
MCU_FPGA_PROG
MCU_FPGA_INIT_B
MCU_FPGA_MODE1
FPGA_MCU_DONE
MCU_FPGA_OSC_EN
FPGA_MCU_AWAKE
MCU_FPGA_SUSPEND
FLASH_C
FLASH_DQ0
FLASH_DQ1
FLASH_DQ2
FLASH_DQ3
FLASH_nS
FPGA_SPI_CCLK
FPGA_SPI_MOSI
FPGA_SPI_MISO1
FPGA_SPI_MISO2
FPGA_SPI_MISO3
FPGA_SPI_SEL
DATAOUT[0:15]
THSD_EN
CK
CW
+VFPGA_CORE_1V2
+VFPGA_IO_3V3
FLASH_3V3
MCU_3V3
USB_DISCONNECT
USB_DM
USB_DP
STM32_FLASH
FPGA
BOARD_POWER_BLK
DVDD
VDDP
VDDM
HVP0
HVP1
HVPCW
HVM0
HVM1
HVMCW
BOARD_POWER
DATAOUT0
DATAOUT1
DATAOUT2
DATAOUT3
DATAOUT4
DATAOUT5
DATAOUT6
DATAOUT7
DATAOUT8
DATAOUT9
DATAOUT10
DATAOUT11
DATAOUT12
DATAOUT13
IN1_0
IN1_1
IN1_2
IN2_0
IN2_1
IN2_2
IN3_0
IN3_1
IN3_2
IN4_0
IN4_1
IN4_2
SEL
HVP_CW
HVM_CW
STHV749
Title
STEVAL-IME008V1 STMicroelectronics
Size
Custom
Document Number
STHV749 Demonstration Board
Rev
1.03
Date:
Monday, August 25, 2014
Sheet
1
of
9

USB



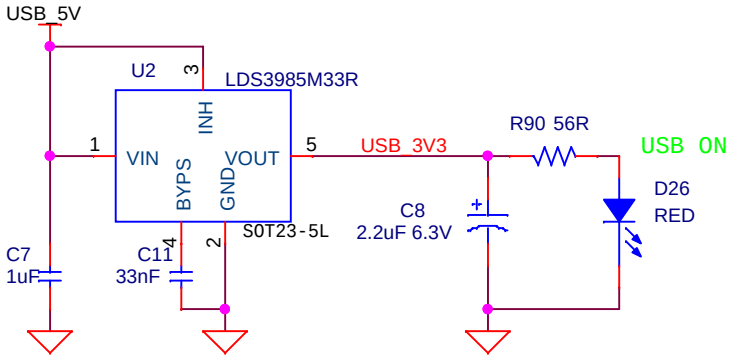
RS (515-1995)
Molex (54819-0572)





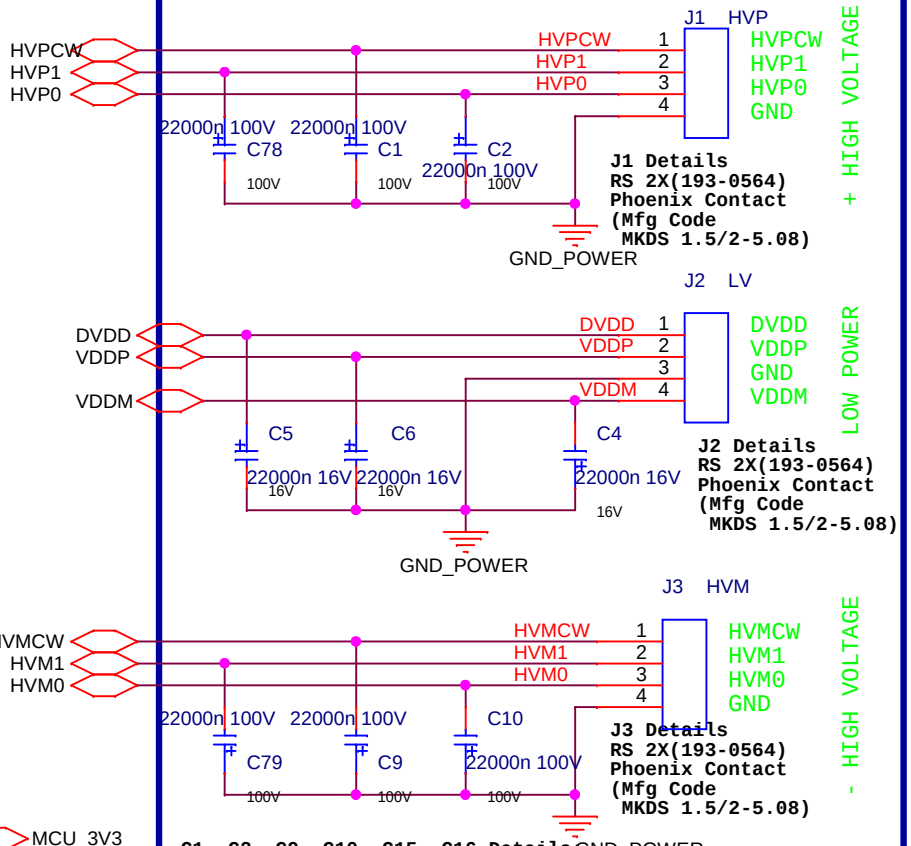
C7 Details:
Digikey (445-4998-2-ND) - TDK (C1005X5R0J105K)
Package 0402

C8 Details:
DigiKey (478-2552-2-ND) - AVX (TACL225M006XTA)
Package 0603



Kingbright KP2012SURC
RS: 466-3829
Farnell: 8529930
LED 0805

STHV800 Power Management



J1 Details
RS 2X(193-0564)
Phoenix Contact
(Mfg Code
MKDS 1.5/2-5.08)

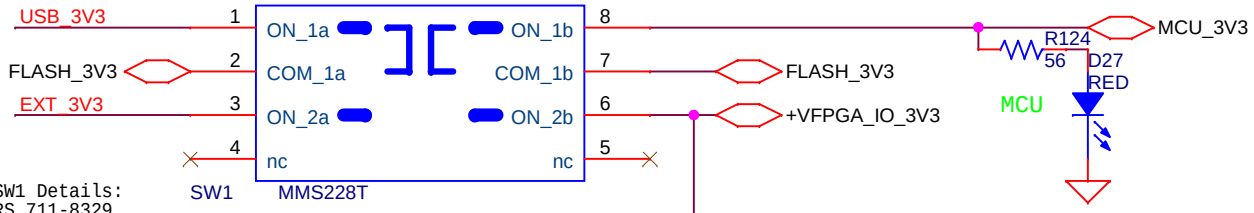
J2 Details
RS 2X(193-0564)
Phoenix Contact
(Mfg Code
MKDS 1.5/2-5.08)

J3 Details
RS 2X(193-0564)
Phoenix Contact
(Mfg Code
MKDS 1.5/2-5.08)

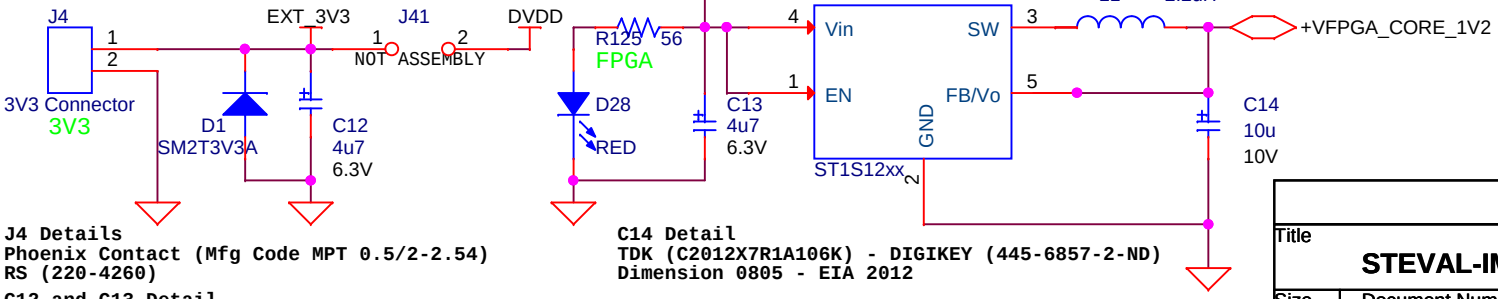
C1, C2, C9, C10, C15, C16 Details
Digikey (445-5217-2-ND) - TDK (CKG57NX7S2A226M)
Package 6.5mm x 5.5 mm

C4, C5, C6 Details:
Digikey (445-1436-2-ND) - TDK (C3225X5R1C226M)
Package 1210 - EIA 3225

3.3V Power Management



SW1 Details:
RS 711-8329
KNITTER-SWITCH (MMS228T)

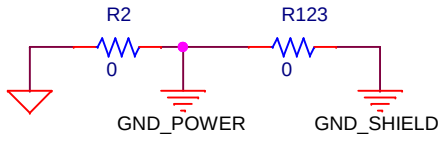


J4 Details
Phoenix Contact (Mfg Code MPT 0.5/2-2.54)
RS (220-4260)

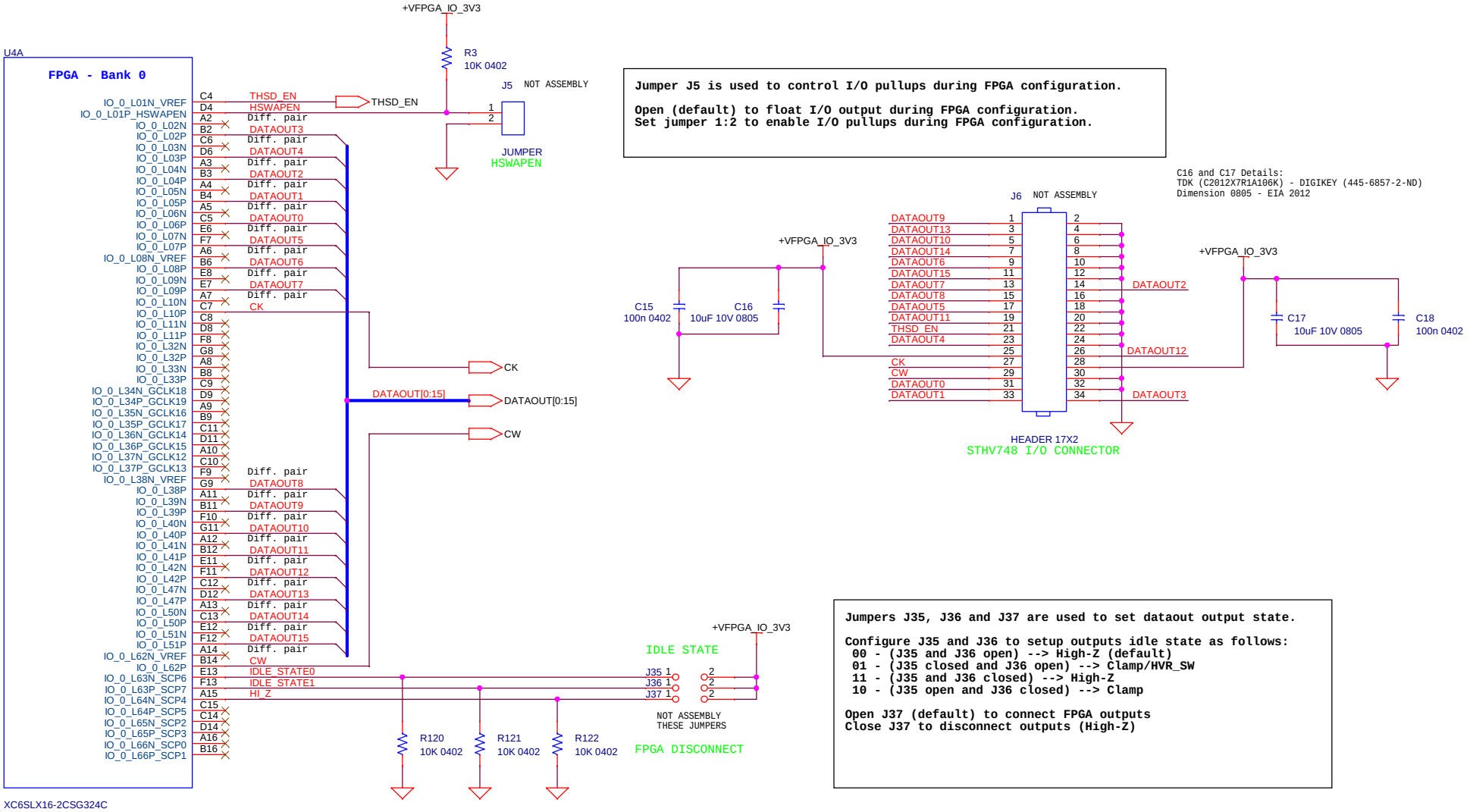
C12 and C13 Detail
TDK (C1608X5R0J475K) - Digikey (445-5178-2-ND)
Dimension 0603 - EIA 1608

C14 Detail
TDK (C2012X7R1A106K) - DIGIKEY (445-6857-2-ND)
Dimension 0805 - EIA 2012

L1 Detail
TDK (VLF4012AT-2R2M1R5) - RS (614-3147)

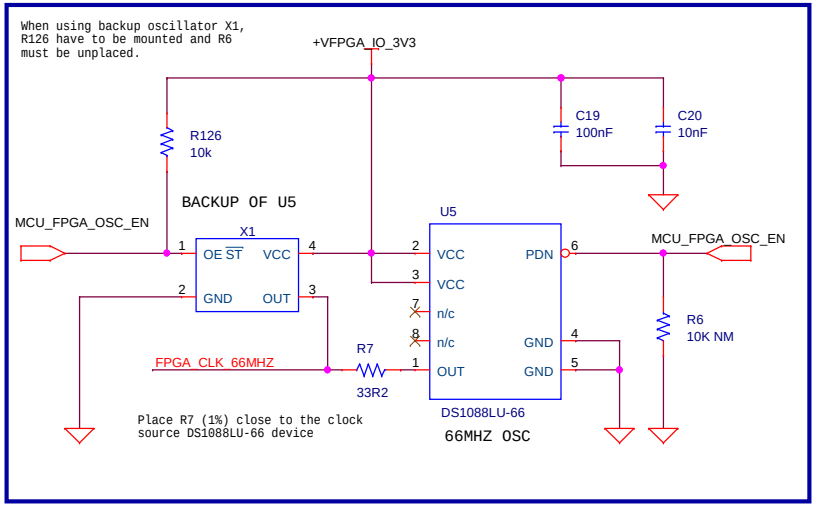


Title	**STEVAL-IME008V1 STMicroelectronics**	
Size A	Document Number STHV749 Demonstration Board	Rev 1.03
Date: Monday, August 25, 2014	Sheet 2 of 9	

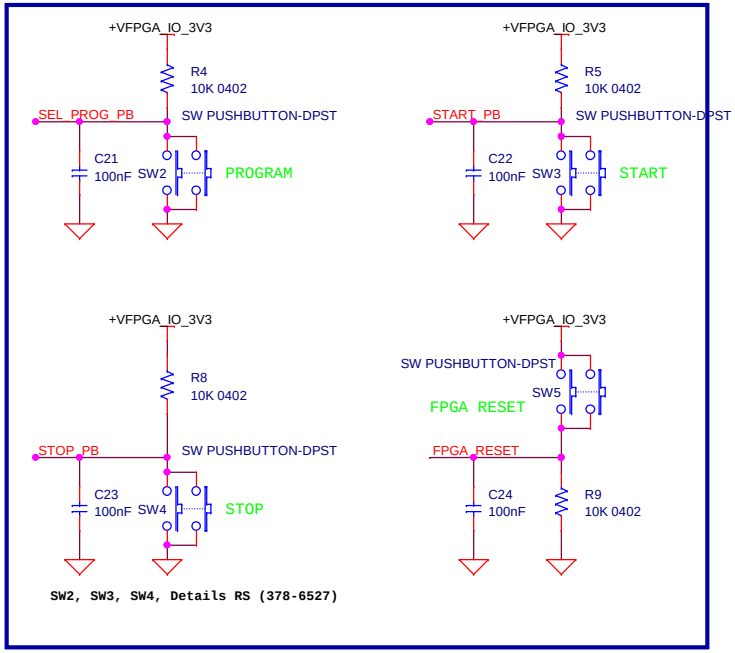


Title	STEVAL-IME008V1 STMicroelectronics	
Size B	Document Number STHV749 Demonstration Board	Rev 1.03
Date: Monday, August 25, 2014	Sheet 3 of 9	

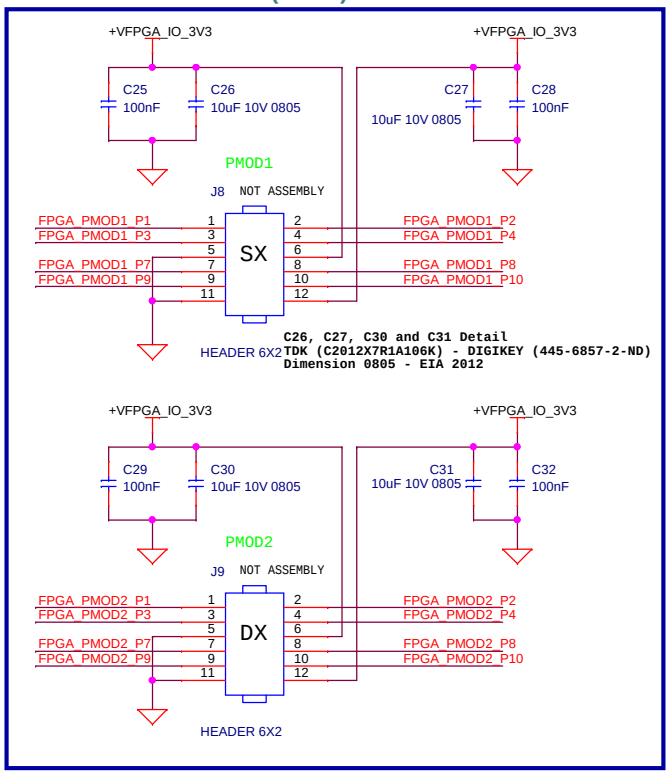
66MHZ EXTERNAL OSCILLATOR



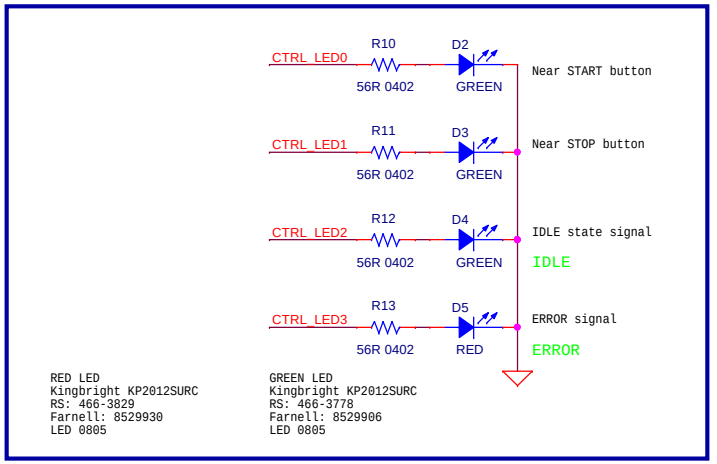
PUSHBUTTONS



PERIPHERRAL MODULE (PMOD)



CTRL LED



U4B

FPGA - Bank 1

IO_1_L01N_A24_VREF	F16	FPGA_PMOD1_P2
IO_1_L01P_A25	F15	FPGA_PMOD1_P1
IO_1_L29N_A22_M1A14	C18	FPGA_PMOD1_P4
IO_1_L29P_A23_M1A13	C17	FPGA_PMOD1_P3
IO_1_L30N_A20_M1A11	G14	FPGA_PMOD1_P8
IO_1_L30P_A21_M1RESET	F14	FPGA_PMOD1_P7
IO_1_L31N_A18_M1A12	D18	FPGA_PMOD1_P10
IO_1_L31P_A19_M1CKE	D17	FPGA_PMOD1_P9
IO_1_L32N_A16_M1A9	G13	FPGA_PMOD2_P2
IO_1_L32P_A17_M1A8	H12	FPGA_PMOD2_P1
IO_1_L33N_A14_M1A4	E18	FPGA_PMOD2_P4
IO_1_L33P_A15_M1A10	E16	FPGA_PMOD2_P3
IO_1_L34N_A12_M1BA2	K13	FPGA_PMOD2_P8
IO_1_L34P_A13_M1WE	K12	FPGA_PMOD2_P7
IO_1_L35N_A10_M1A2	F18	FPGA_PMOD2_P10
IO_1_L35P_A11_M1A7	F17	FPGA_PMOD2_P9
IO_1_L36N_A8_M1BA1	H14	
IO_1_L36P_A9_M1BA0	H13	
IO_1_L37N_A6_M1A1	H16	
IO_1_L37P_A7_M1A0	H15	
IO_1_L38N_A4_M1CLKN	G18	
IO_1_L38P_A5_M1CLK	G16	
IO_1_L39N_M1ODT	K14	CTRL_LED1
IO_1_L39P_M1A3	J13	CTRL_LED0
IO_1_L40N_GCLK10_M1A6	L13	SEL_PROG_PB
IO_1_L40P_GCLK11_M1A5	L12	FPGA_CLK_66MHZ
IO_1_L41N_GCLK8_M1CASN	K16	START_PB
IO_1_L41P_GCLK9_IRDY1_M1RASN	K15	
IO_1_L42N_GCLK6_TRDY1_M1LDM	L16	STOP_PB
IO_1_L42P_GCLK7_M1UDM	L15	
IO_1_L43N_GCLK4_M1DQ5	H18	FPGA_RESET
IO_1_L43P_GCLK5_M1DQ4	H17	
IO_1_L44N_A2_M1DQ7	J18	FPGA_USER_IO_0
IO_1_L44P_A3_M1DQ6	J16	FPGA_USER_IO_1
IO_1_L45N_A0_M1LDQSN	K18	FPGA_USER_IO_2
IO_1_L45P_A1_M1LDQS	K17	FPGA_USER_IO_3
IO_1_L46N_FOE_B_M1DQ3	L18	FPGA_USER_IO_4
IO_1_L46P_FCS_B_M1DQ2	L17	FPGA_USER_IO_5
IO_1_L47N_LDC_M1DQ1	M18	FPGA_USER_IO_6
IO_1_L47P_FWE_B_M1DQ0	M16	FPGA_USER_IO_7
IO_1_L48N_M1DQ9	N18	FPGA_USER_IO_8
IO_1_L48P_HDC_M1DQ8	N17	FPGA_USER_IO_9
IO_1_L49N_M1DQ11	P18	FPGA_USER_IO_10
IO_1_L49P_M1DQ10	P17	FPGA_USER_IO_11
IO_1_L50N_M1UDQSN	N16	FPGA_USER_IO_12
IO_1_L50P_M1UDQS	N15	FPGA_USER_IO_13
IO_1_L51N_M1DQ13	T18	FPGA_USER_IO_14
IO_1_L51P_M1DQ12	T17	FPGA_USER_IO_15
IO_1_L52N_M1DQ15	U18	CTRL_LED3
IO_1_L52P_M1DQ14	U17	CTRL_LED2
IO_1_L53N_VREF	N14	
IO_1_L53P	M14	
IO_1_L61N	M13	
IO_1_L61P	L14	
IO_1_L74N_DOUT_BUSY	P16	FPGA_DOUT_BUSY
IO_1_L74P_AWAKE	P15	FPGA_AWAKE

XC6SLX16-2CSG324C

FPGA USER I/O

J7 NOT ASSEMBLY

HEADER 16X2

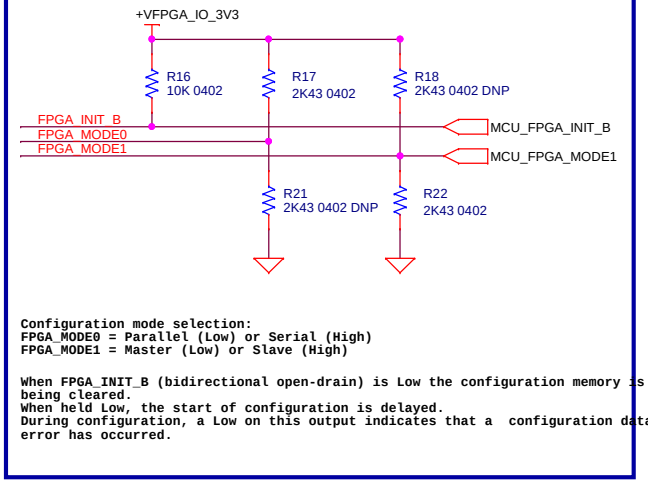
TP1
TEST POINT

FPGA_AWAKE → FPGA_MCU_AWAKE

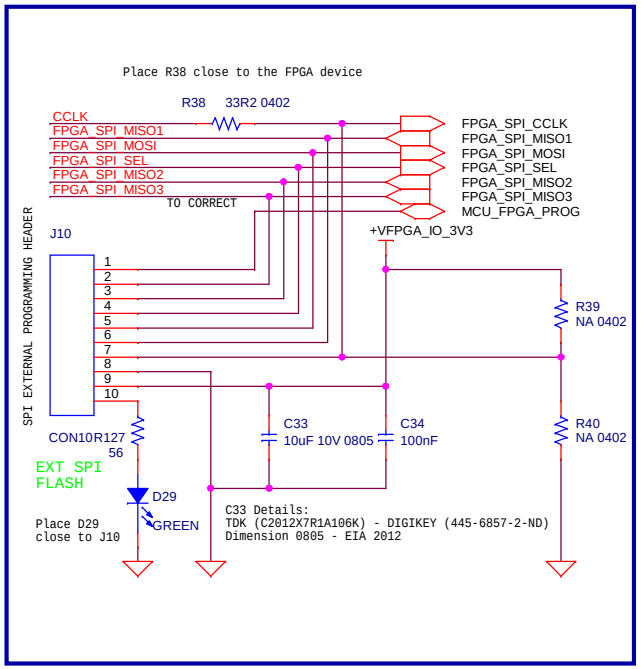
Two right-angle, 12-pin (2 x 6 female) Peripheral Module (PMOD) headers (J8, J9) are interfaced to the FPGA, with each header providing 3.3 V power, ground, and eight I/O's. These headers may be utilized as general-purpose I/Os or may be used to interface to PMODs. J6 and J8 are placed in close proximity (0'9" -centers) on the PCB in order to support dual PMODs.

Title	STEVAL-IME008V1 STMicroelectronics
Size B	Document Number STHV749 Demonstration Board
Rev	1.03
Date: Monday, August 25, 2014	Sheet 4 of 9

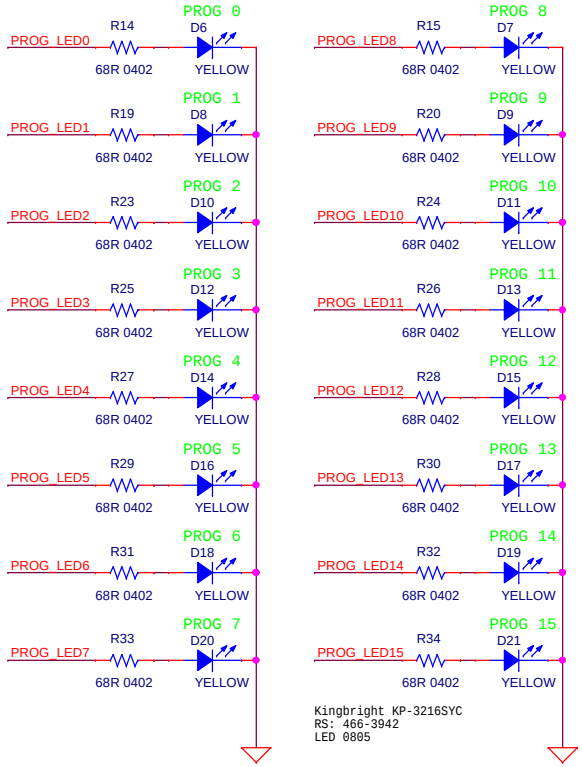
FPGA CONFIGURATION



SPI FLASH CTRL SIGNALS



PROGRAM SELECTOR LEDS



U4C

FPGA - Bank 2

IO_2_L01N_M0_CMPMISO	T15	FPGA_MODE0
IO_2_L01P_CCLK	R15	CCLK
IO_2_L02N_CMPMOSI	V16	
IO_2_L02P_CMPCLK	U16	
IO_2_L03N_MOSI_CSI_B_MISO0	T13	FPGA_SPI_MOSI
IO_2_L03P_D0_DIN_MISO_MISO1	R13	FPGA_SPI_MISO1
IO_2_L05N	V15	
IO_2_L05P	U15	
IO_2_L12N_D2_MISO3	V14	FPGA_SPI_MISO3
IO_2_L12P_D1_MISO2	T14	FPGA_SPI_MISO2
IO_2_L13N_D10	P12	
IO_2_L13P_M1	N12	FPGA_MODE1
IO_2_L14N_D12	V13	
IO_2_L14P_D11	U13	
IO_2_L15N	N11	
IO_2_L15P	M11	
IO_2_L16N_VREF	T11	
IO_2_L16P	R11	
IO_2_L19N	V12	
IO_2_L19P	T12	
IO_2_L20N	P11	
IO_2_L20P	N10	
IO_2_L22N	N9	
IO_2_L22P	M10	
IO_2_L23N	V11	
IO_2_L23P	U11	
IO_2_L29N_GCLK2	T10	
IO_2_L29P_GCLK3	R10	
IO_2_L30N_GCLK0_USERCCLK	V10	
IO_2_L30P_GCLK1_D13	U10	
IO_2_L31N_GCLK30_D15	T8	
IO_2_L31P_GCLK31_D14	R8	
IO_2_L32N_GCLK28	V9	
IO_2_L32P_GCLK29	T9	
IO_2_L40N	N8	PROG_LED14
IO_2_L40P	M8	PROG_LED15
IO_2_L41N_VREF	V8	MCU_FPGA_GPIO6
IO_2_L41P	U8	MCU_FPGA_GPIO7
IO_2_L43N	V7	MCU_FPGA_GPIO4
IO_2_L43P	U7	MCU_FPGA_GPIO5
IO_2_L44N	P8	PROG_LED12
IO_2_L44P	N7	PROG_LED13
IO_2_L45N	V6	MCU_FPGA_GPIO2
IO_2_L45P	T6	MCU_FPGA_GPIO3
IO_2_L46N	T7	MCU_FPGA_GPIO0
IO_2_L46P	R7	MCU_FPGA_GPIO1
IO_2_L47N	P7	PROG_LED10
IO_2_L47P	N6	PROG_LED11
IO_2_L48N_RDWR_B_VREF	T5	PROG_LED2
IO_2_L48P_D7	R5	PROG_LED3
IO_2_L49N_D4	V5	PROG_LED6
IO_2_L49P_D3	U5	PROG_LED7
IO_2_L62N_D6	T3	PROG_LED0
IO_2_L62P_D5	R3	PROG_LED1
IO_2_L63N	V4	PROG_LED4
IO_2_L63P	T4	PROG_LED5
IO_2_L64N_D9	P6	PROG_LED8
IO_2_L64P_D8	N5	PROG_LED9
IO_2_L65N_CSO_B	V3	FPGA_SPI_SEL
IO_2_L65P_INIT_B	U3	FPGA_INIT_B

TP2
TEST POINT

XC6SLX16-2CSG324C

MCU_FPGA_GPIO0
MCU_FPGA_GPIO1
MCU_FPGA_GPIO2
MCU_FPGA_GPIO3
MCU_FPGA_GPIO4
MCU_FPGA_GPIO5
MCU_FPGA_GPIO6
MCU_FPGA_GPIO7
MCU_FPGA_GPIO[0:7]
MCU_FPGA_GPIO[0:7]

Title	STEVAL-IME008V1 STMicroelectronics	
Size B	Document Number STHV749 Demonstration Board	Rev 1.03
Date: Monday, August 25, 2014	Sheet 5 of 9	

U4D

FPGA - Bank 3

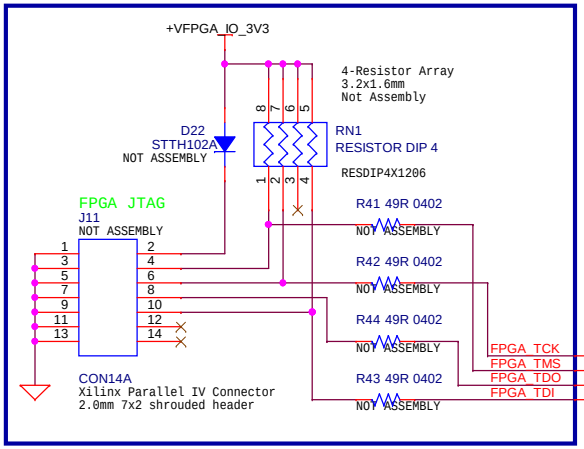
IO_3_L01N_VREF	N3
IO_3_L01P	N4
IO_3_L02N	P3
IO_3_L02P	P4
IO_3_L31N_VREF	M5
IO_3_L31P	L6
IO_3_L32N_M3DQ15	U1
IO_3_L32P_M3DQ14	U2
IO_3_L33N_M3DQ13	T1
IO_3_L33P_M3DQ12	T2
IO_3_L34N_M3UDQSN	P1
IO_3_L34P_M3UDQS	P2
IO_3_L35N_M3DQ11	N1
IO_3_L35P_M3DQ10	N2
IO_3_L36N_M3DQ9	M1
IO_3_L36P_M3DQ8	M3
IO_3_L37N_M3DQ1	L1
IO_3_L37P_M3DQ0	L2
IO_3_L38N_M3DQ3	K1
IO_3_L38P_M3DQ2	K2
IO_3_L39N_M3LDQSN	L3
IO_3_L39P_M3LDQS	L4
IO_3_L40N_M3DQ7	J1
IO_3_L40P_M3DQ6	J3
IO_3_L41N_GCLK26_M3DQ5	H1
IO_3_L41P_GCLK27_M3DQ4	H2
IO_3_L42N_GCLK24_M3LDM	K3
IO_3_L42P_GCLK25_TRDY2_M3UDM	K4
IO_3_L43N_GCLK22_IRDY2_M3CASN	K5
IO_3_L43P_GCLK23_M3RASN	L5
IO_3_L44N_GCLK20_M3A6	H3
IO_3_L44P_GCLK21_M3A5	H4
IO_3_L45N_M3ODT	K6
IO_3_L45P_M3A3	L7
IO_3_L46N_M3CLKN	G1
IO_3_L46P_M3CLK	G3
IO_3_L47N_M3A1	J6
IO_3_L47P_M3A0	J7
IO_3_L48N_M3BA1	F1
IO_3_L48P_M3BA0	F2
IO_3_L49N_M3A2	H5
IO_3_L49P_M3A7	H6
IO_3_L50N_M3BA2	E1
IO_3_L50P_M3WE	E3
IO_3_L51N_M3A4	F3
IO_3_L51P_M3A10	F4
IO_3_L52N_M3A9	D1
IO_3_L52P_M3A8	D2
IO_3_L53N_M3A12	G6
IO_3_L53P_M3CKE	H7
IO_3_L54N_M3A11	D3
IO_3_L54P_M3RESET	E4
IO_3_L55N_M3A14	F5
IO_3_L55P_M3A13	F6
IO_3_L83N_VREF	C1
IO_3_L83P	C2

XC6SLX16-2CSG324C

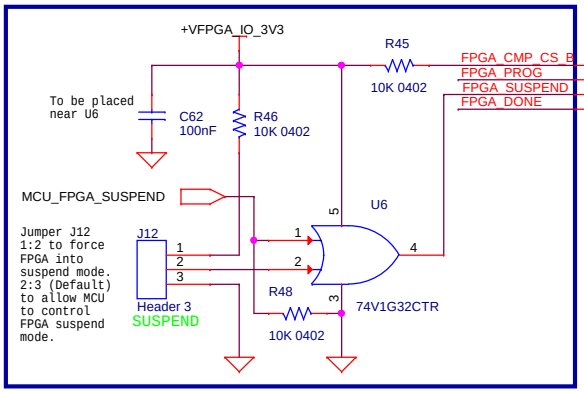
FPGA BANK 3 NOT USED

Title	STEVAL-IME008V1 STMicroelectronics		
Size B	Document Number STHV749 Demonstration Board		Rev 1.03
Date: Monday, August 25, 2014		Sheet 6 of 9	

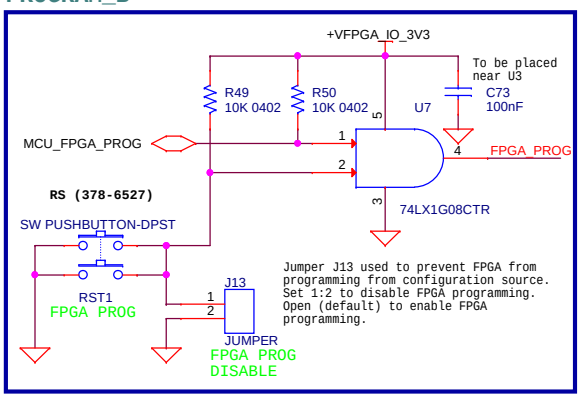
FPGA JTAG



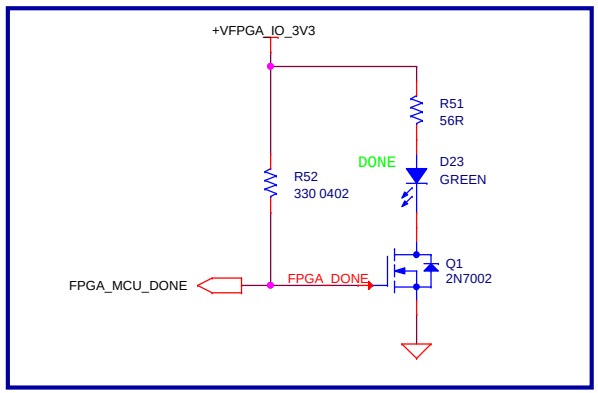
SUSPEND & CMPCS_B

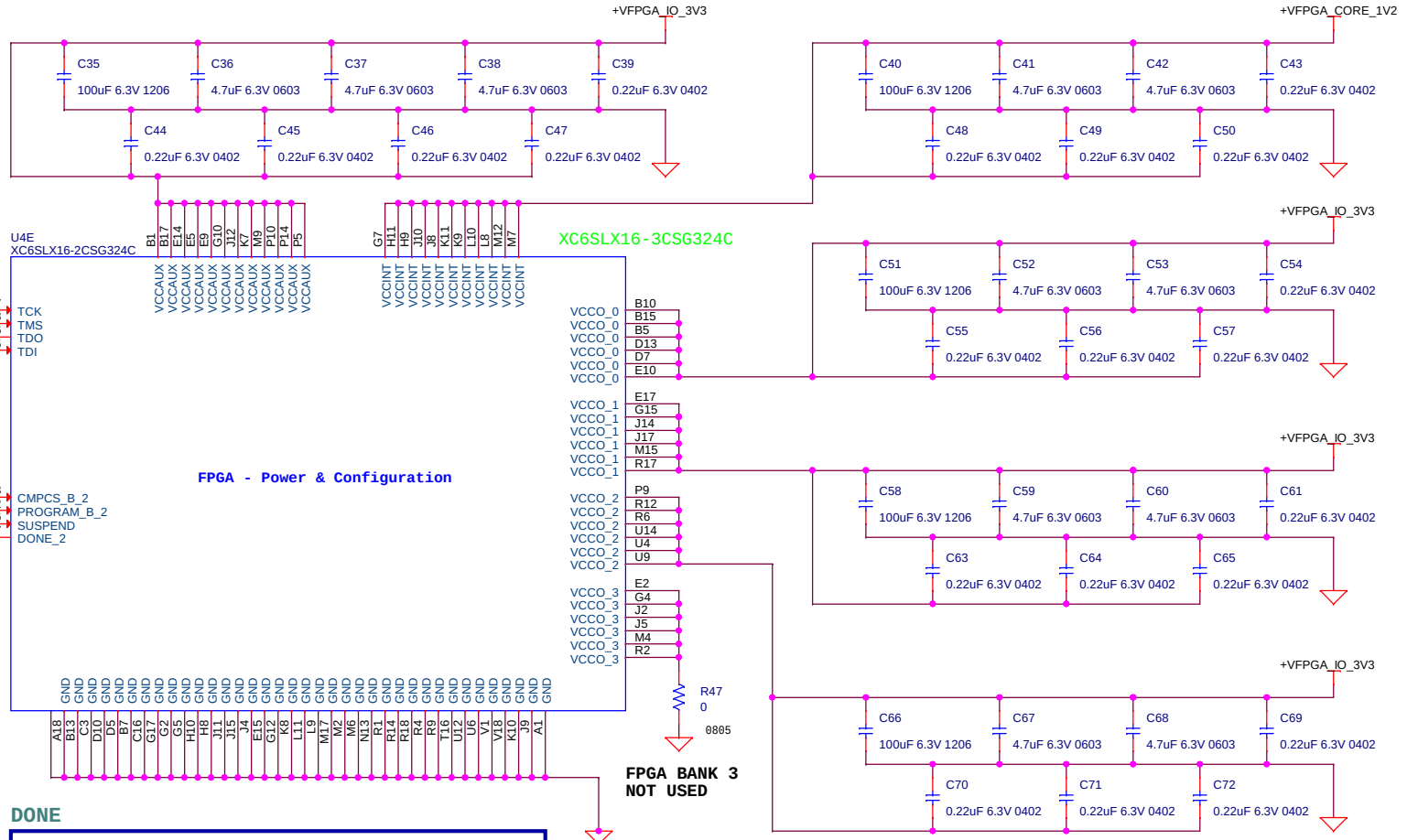


PROGRAM_B



DONE

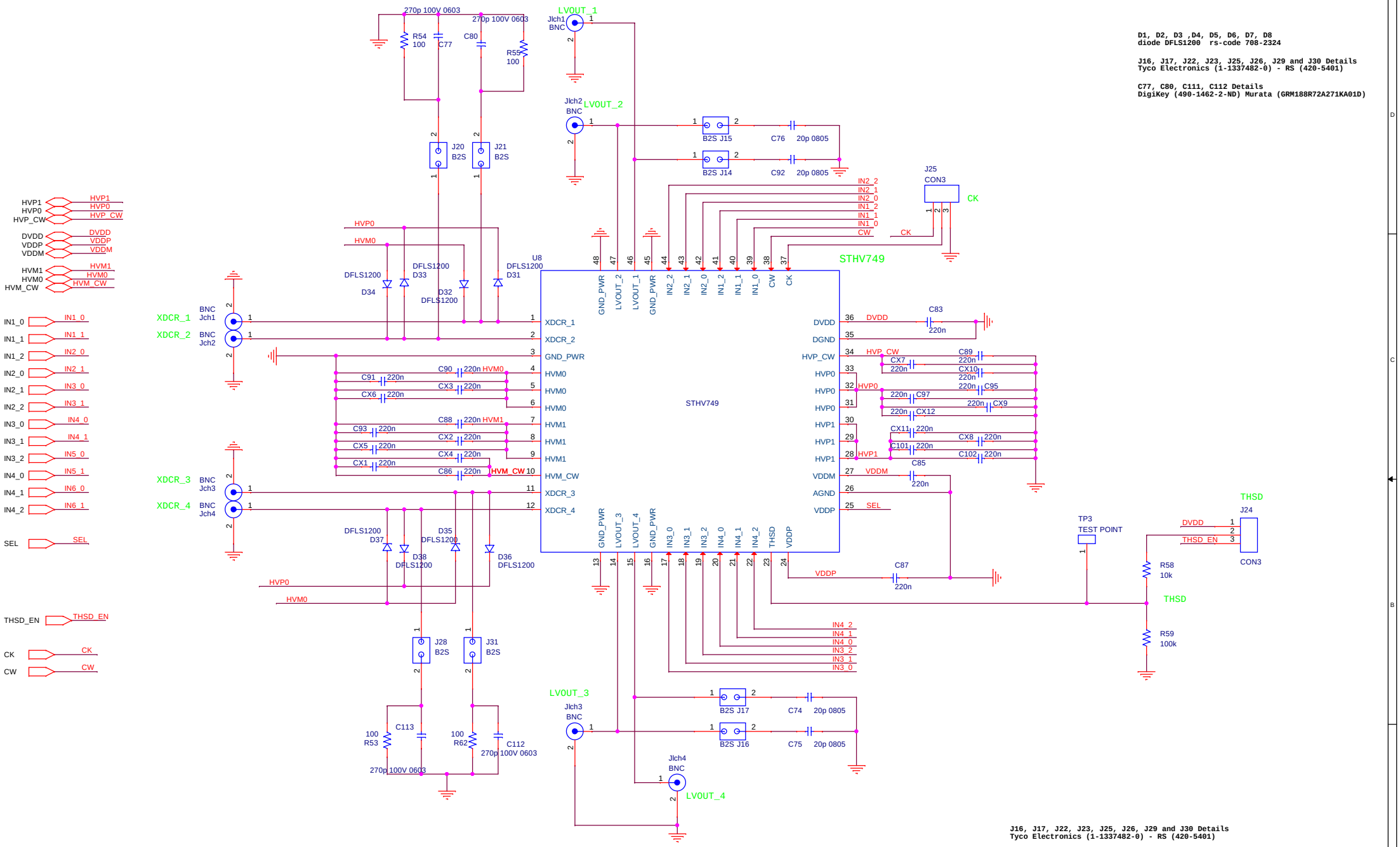




C35, C40, C51, C58, C66 Details
Murata (GRM31CR60J107ME39L) - Digikey (490-4539-1-ND)
Dimension 1206 - EIA 3216

C36, C37, C38, C41, C42, C52, C53, C59, C60, C67, C68 Details
10K (C1608X5R0J475K) - Digikey (445-5178-2-ND)
Dimension 0603 - EIA 1608

Title	STEVAL-IME008V1 STMicroelectronics	
Size B	Document Number STHV749 Demonstration Board	Rev 1.03
Date: Monday, August 25, 2014	Sheet 7 of 9	



Title	STEVAL-IME008V1 STMicroelectronics		
Size A3	Document Number STHV749 Demonstration Board		Rev 1.03
Date: Monday, August 25, 2014	Sheet 8 of 9		

SPI FLASH

Use J38 to enable/disable power for SPI flash device.
J38 must be open when using external spi flash device on connecto J10. Default value closed.

FLASH_3V3
J38
FLASH DISABLE
R64 0R - N/A
R128 56
D30 RED
INT SPI FLASH
R129 4k7
R130 4k7
R131 4k7
C116 100nF
U9
VCC
VSS
DQ0
DQ1
C
nS
nW/Vpp/DQ2
nHOLD/DQ3
N25Q032xSC
FLASH_DQ0
FLASH_C
FLASH_nS
FLASH_DQ2
FLASH_DQ3
FLASH_DQ1

MCU_3V3
FLASH_3V3

MCU

Place near MCU
C118 100nF
C119 100nF
C120 100nF
C121 100nF

U10
STM32_GPIO_0 … STM32_GPIO_9
USB_DISCONNECT
DM_STM32
DP_STM32
USB_DISCONNECT
USB_DM
USB_DP
PA0-WKUP … PA12
PC14-OSC32_IN
PC15-OSC32_OUT
PC13-Tamper-RTC
NRST
VDDA
BOOT0
PB2-BOOT1
VDD_3
VDD_2
VDD_1
VBAT
VSSA
VSS_1
VSS_2
VSS_3
PB4 JNTRST
PB3 JTDO
PA15 JTDI
PA14 JTCK
PA13 JTMS
PB0 … PB15
PD0 OSC_IN
PD1 OSC_OUT
JNTRST
JTDO
JTDI
JTCK
JTMS
USER_LED1
USER_LED2
STM32_GPIO_10
STM32_GPIO_11
STM32_GPIO_12
STM32_GPIO_13
STM32_GPIO_14
FLASH_DQ3
FLASH_DQ2
FLASH_nS
FLASH_C
FLASH_DQ1
FLASH_DQ0
OSCIN
OSCOUT
STM32F103C8T6
STM32F103

RESET#
C117 100nF
RST2 MCU RESET
SW PUSHBUTTON-DPST
Not Assembly
RS (505-9186)
C&K (Y78B22110FP)

C123 Details:
Digikey (445-4998-2-ND) - TDK (C1005X5R0J105K)
Package 0402
C122 100nF
C123 1uF 6.3V
R66 4K7
R67 4K7

OSCILLATOR

Y1
8MHZ OSC
8MHz
Murata (CSTCE8M00G55-R0)
DigiKey (490-1195-1-ND)
RS: 283-961
Farnell: 1615352

OPTIONAL FPGA I/O

STM32_GPIO_0 R69 0R - N/A FPGA_GPIO0
STM32_GPIO_1 R70 0R - N/A FPGA_GPIO1
STM32_GPIO_2 R71 0R - N/A FPGA_GPIO2
STM32_GPIO_3 R72 0R - N/A FPGA_GPIO3
STM32_GPIO_4 R73 0R - N/A FPGA_GPIO4
STM32_GPIO_5 R74 0R - N/A FPGA_GPIO5
STM32_GPIO_6 R75 0R - N/A FPGA_GPIO6
STM32_GPIO_7 R80 0R - N/A FPGA_GPIO7
FPGA_GPIO[0:7]
FPGA_GPIO[0:7]

OPTIONAL FPGA CONFIGURATION SIGNALS

STM32_GPIO_8 R82 0R - N/A FPGA_MCU_AWAKE
STM32_GPIO_9 R83 0R - N/A FPGA_MCU_DONE
STM32_GPIO_10 R84 0R - N/A MCU_FPGA_OSC_EN
STM32_GPIO_11 R85 0R - N/A MCU_FPGA_INIT_B
STM32_GPIO_12 R86 0R - N/A MCU_FPGA_MODE1
STM32_GPIO_13 R88 0R - N/A MCU_FPGA_PROG
STM32_GPIO_14 R89 0R - N/A MCU_FPGA_SUSPEND
FPGA_MCU_AWAKE
FPGA_MCU_DONE
MCU_FPGA_OSC_EN
MCU_FPGA_INIT_B
MCU_FPGA_MODE1
MCU_FPGA_PROG
MCU_FPGA_SUSPEND

JTAG/SWD

MCU_3V3
R76 10k
R77 10k
R78 10k
R79 10k
Male Connector 2x5
Pitch 1.27 mm
SAMTEC FTSH-105-01-F-D-K
JP1 JUMPER
J40
JNTRST
JTMS
JTCK
JTDO
JTDI
RESET#
R87 10k
SWD/JTAG
MCU JTAG

DOWNLOAD

D24 RED
R68 56R
USER_LED1
Kingbright KP2012SURC
RS: 466-3829
Farnell: 8529930
LED 0805

FLASH READY

D25 RED
R81 56R
USER_LED2
Kingbright KP2012SURC
RS: 466-3829
Farnell: 8529930
LED 0805

Title	STEVAL-IME008V1 STMicroelectronics	
Size B	Document Number STHV749 Demonstration Board	Rev 1.03
Date: Monday, August 25, 2014	Sheet 9 of 9	