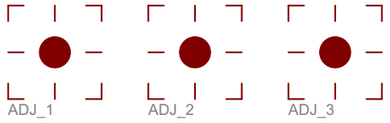
Hexagon Application Kit
CPU Board XMC4400 General Purpose

CPU_44A-V2

[1] Contents
[2] Satellite Connectors, USB-OTG
[3] XMC4400 (LQFP100)
[4] Power, Debug, Reset
[5] On-board Debugger

Fiducials

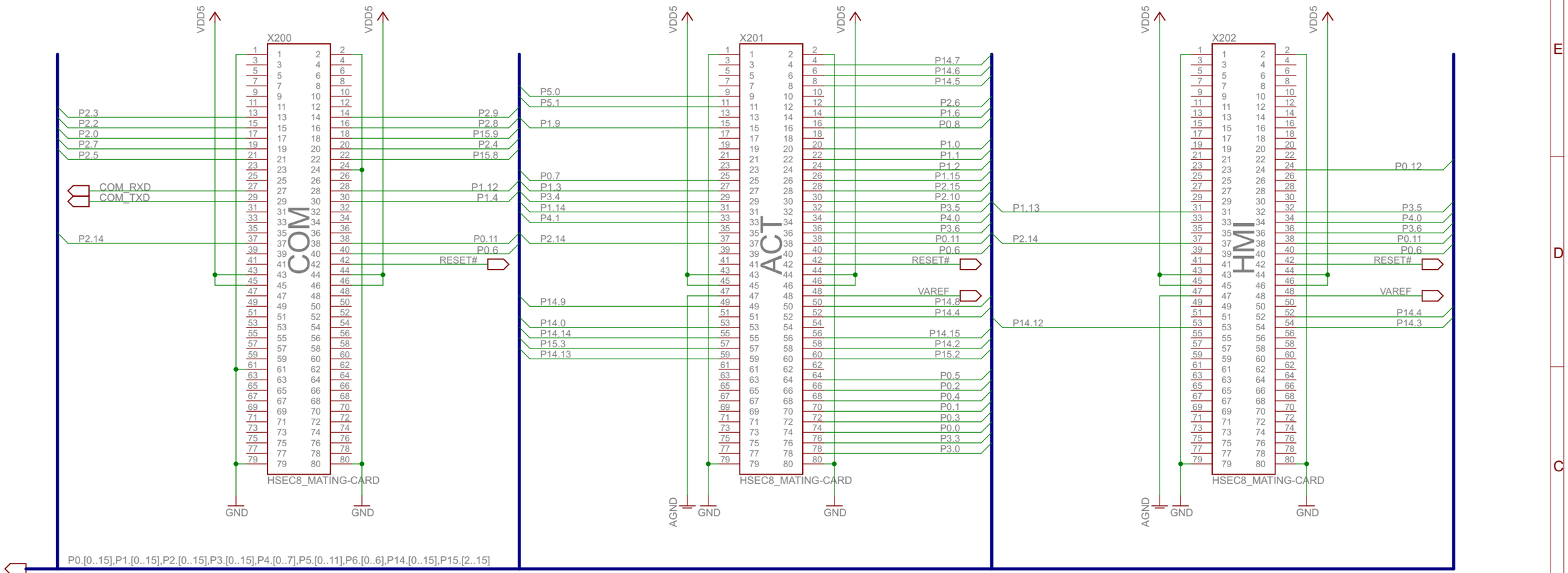


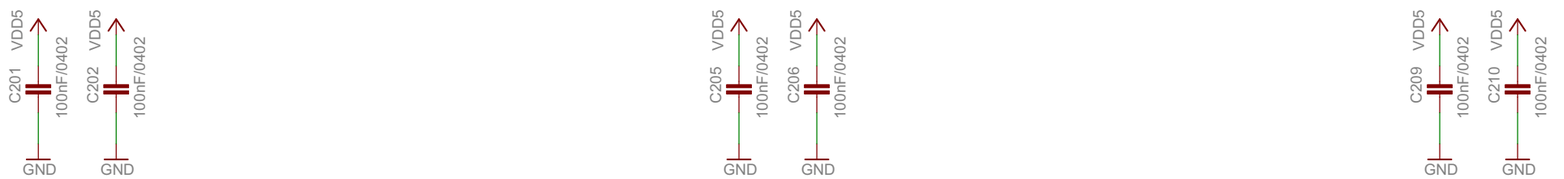
V2 / 08.10.2012 / Ma

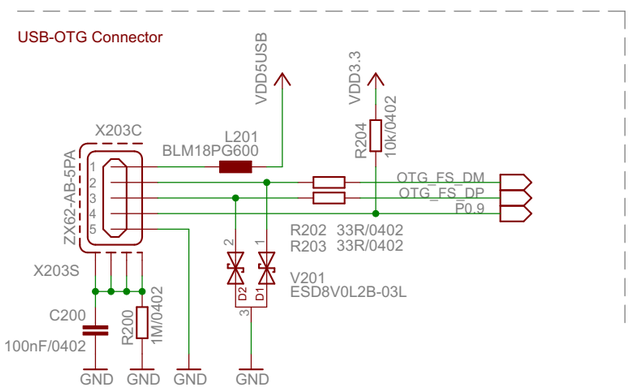
Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Contents
CPU_44A-V2
12.10.2012 15:09:42
Sheet: 1/5







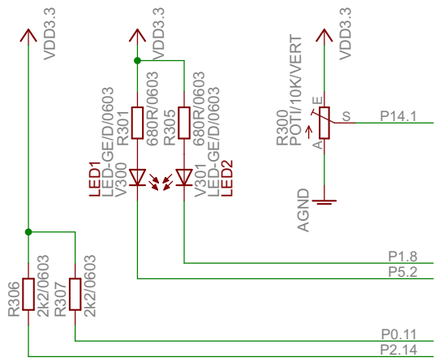
V2 / 08.10.2012 / Ma

Legal Disclaimer

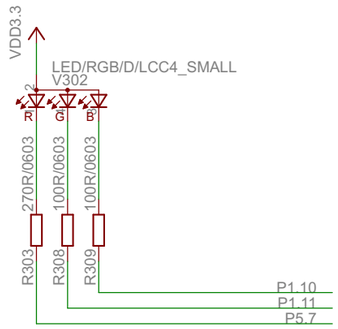
The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Satellite Con., USB-OTG	
CPU_44A-V2	
12.10.2012 15:09:42	
Sheet: 2/5	

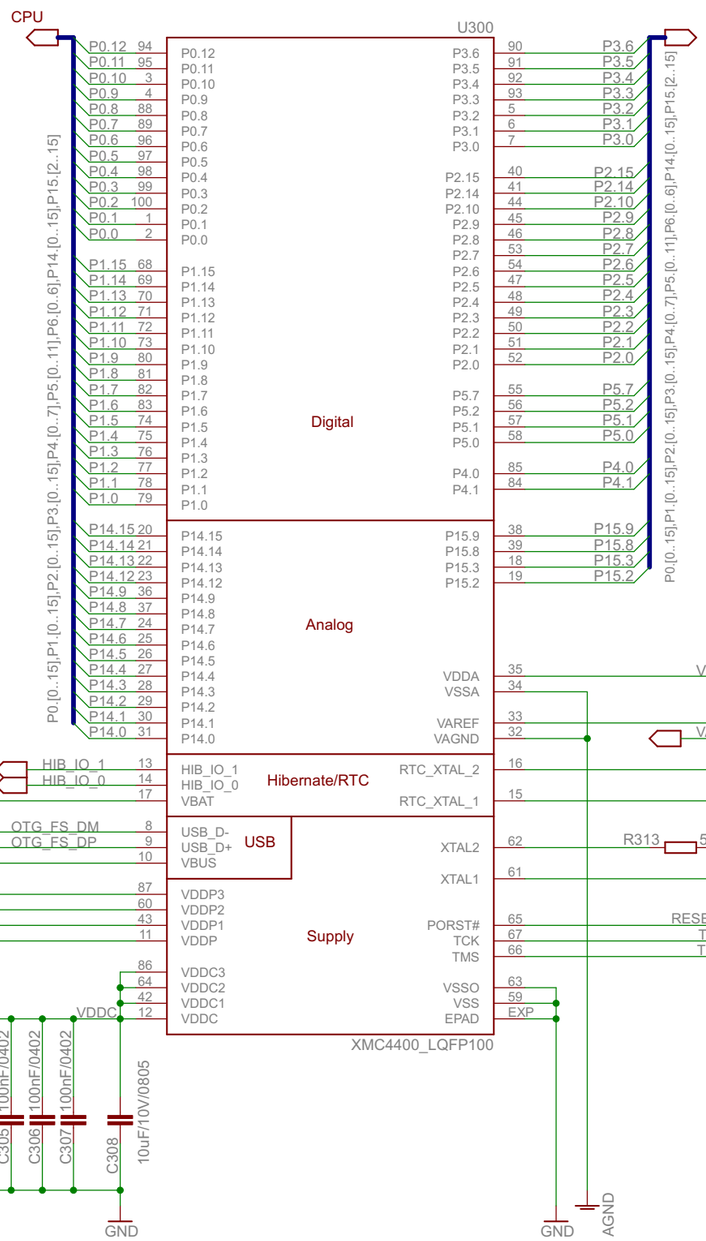
Potentiometer, GPIO LEDs, I2C Pullups



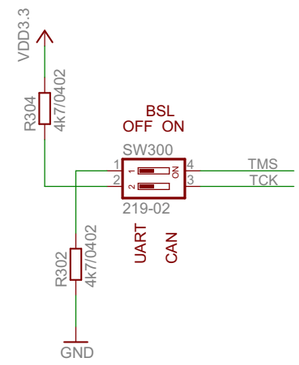
RGB LED



CPU

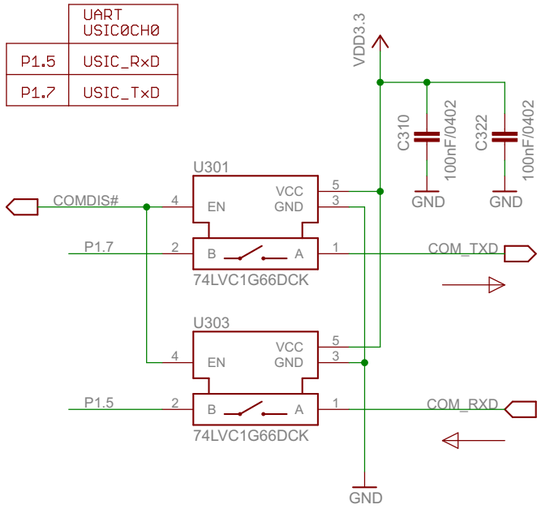


Boot Options

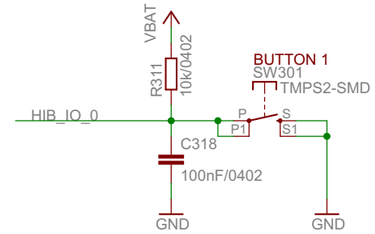


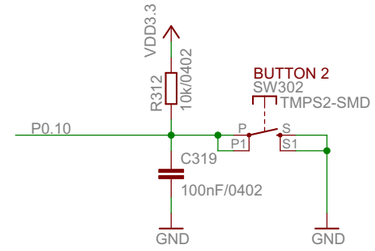
COM Board Switch

	UART USIC0CH0
P1.5	USIC_RxD
P1.7	USIC_TxD

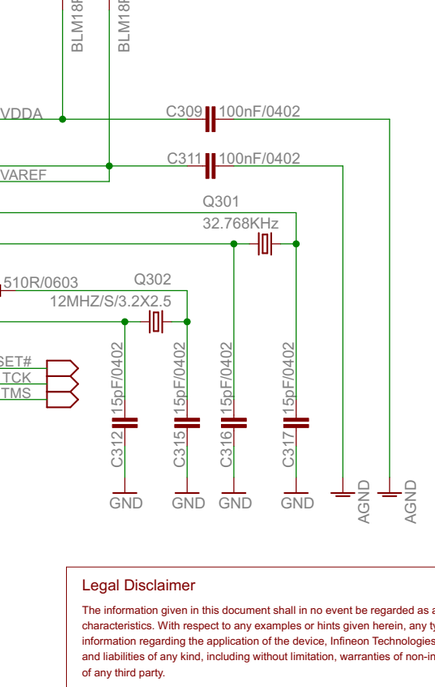


Push Buttons





Jumper closed with a cutable trace on bottom layer



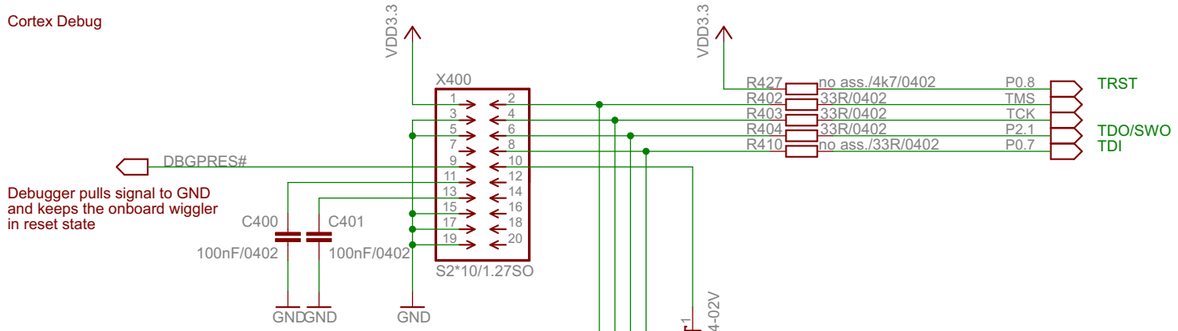
V2 / 08.10.2012 / Ma

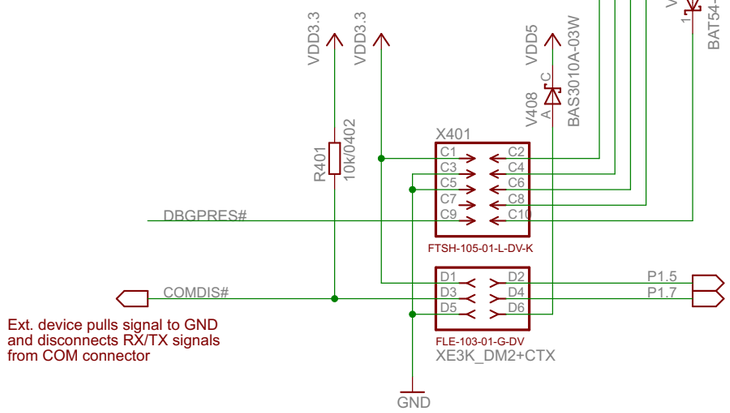
Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

CPU	
CPU_44A-V2	
12.10.2012 15:09:42	
Sheet: 3/5	

Cortex Debug

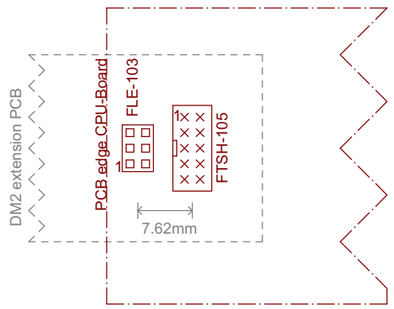




Ext. device pulls signal to GND
and disconnects RX/TX signals
from COM connector

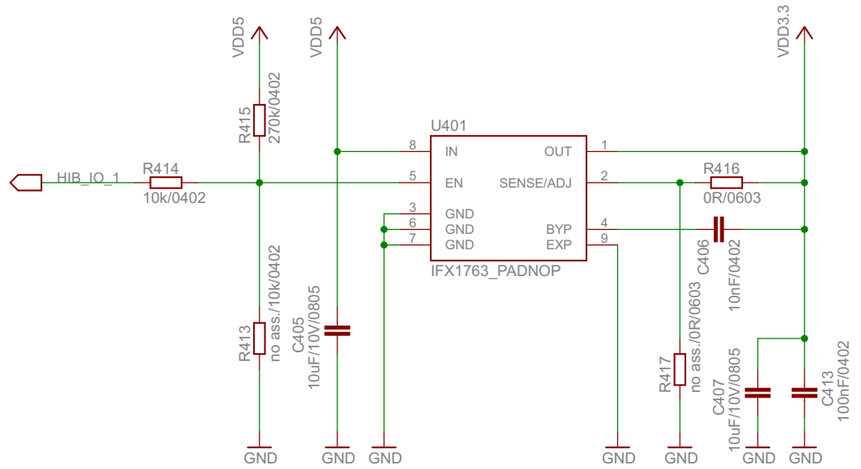
	UART USIC0CH0
P1.5	USIC_RxD
P1.7	USIC_TxD

Layout placement

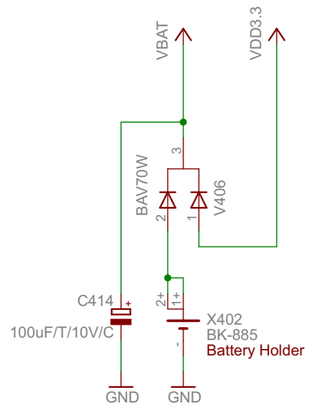


The DriveMonitor extension PCB hosts the CAN transceiver
and the UART switch logic connected to X401

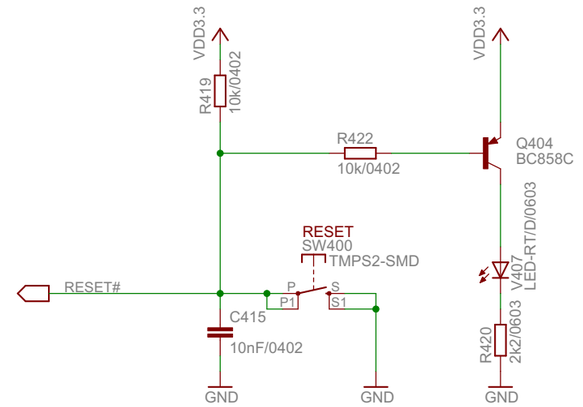
VDD3.3 Supply



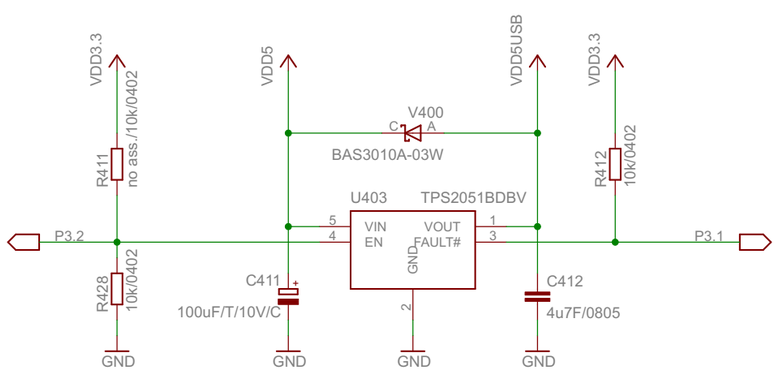
RTC Battery



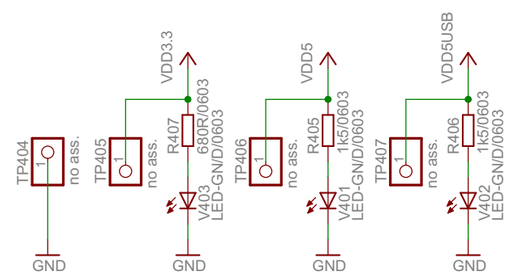
Reset



USB-OTG Supply



Power LED and Testpoints



V2 / 08.10.2012 / Ma

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Power, Debug, Reset	
CPU_44A-V2	
12.10.2012 15:09:42	
Sheet: 4/5	

Debugger Concept

TMS	SPI Master	U0C0
TCK	MISO	DX0B-P1.4
	MOSI	DOUT0-P1.5
	CLK_OUT	SCLKOUT-P1.1
	CS_OUT	SELO0-P1.0
	SPI Slave	U0C1
	CS_IN	DX2A-P2.3
	CLK_IN	DX1A-P2.4
TDI	MISO	DOUT0-P2.5
TDO	MOSI	DX0A-P2.2
SWV	UART	U1C1
	RXD	DX0D-P0.0
	UART2 (DM2)	U1C0
RXD	RXD	DX0A-P0.4
TXD	TXD	DOUT0-P0.5
EN#	TXACTIVE#	GPIO-P0.6
RESET#	RESET#	GPIO-P0.3
DEBUG_LED#	DEBUG_LED#	GPIO-P0.2

On-board Debugger

U500

TDI — P0.7 21
TCK 22
CS 23
TDO — P2.1 24
25
26

P2.5 P2.4 P2.3 P2.2 P2.1 P2.0

Digital

P0.8 42
P0.7 43
P0.6 44 — COMDIS# — EN#
P0.5 45 — P1.5 — TXD
P0.4 46 — P1.7 — RXD
P0.3 47 — RESET# — DEBUG_LED
P0.2 48
P0.1 1
P0.0 2 — P2.1 — SWV

P1.5 35 — TMS — TMS
P1.4 36
P1.3 37
P1.2 38
P1.1 39 — TCK — TCK
P1.0 40 — CS

VDD3.3 — R504 680R/0603 — V502 LED-GN/D/0603

Configure COMDIS# as open-drain output
Configure Debugger-P0.5 as USIC_Tx but only active while X-spy function is selected
Configure Debugger-P0.4 as USIC_Rx but only active while X-spy function is selected
Configure Debugger-P0.3 as RESET# detect input but with additional open-drain output capabilities

VDD3.3 — C502 100nF/0402 — 18 VAREF, 17 VAGND

Analog

P14.9 19
P14.8 20
P14.7 11
P14.6 12
P14.5 13
P14.4 14
P14.3 15
P14.0 16

VDD3.3 — VDD5 — V501 BAS3010A-03W — L500 BLM18PG600 — X500C ZX62-AB-5PA

9 RTC_XTAL_2
8 RTC_XTAL_1

Hibernate/RTC

HIB_IO_0 7 — VBUS
VBAT 10

USB

USB_D- 3 — R501 33R/0402
USB_D+ 4 — R502 33R/0402

Q500 12MHZ/S/3.2X2.5 — R500 510R/0603

XTAL2 30
XTAL1 29

DBGPRES# 32
WTCK 34
WTMS 33

PORST# TCK TMS

Supply

VDDP2 41
VDDP1 28
VDDP 5

VSS 27
EPAD

VDDC1 31
VDDC 6

XMC4200_QFN48

C500 15pF/0402 — C501 15pF/0402 — GND GND GND

C504 100nF/0402 — C505 100nF/0402 — C506 10uF/10V/0805 — C507 100nF/0402 — C508 100nF/0402 — C509 100nF/0402 — C510 10uF/10V/0805 — GND GND

R506 4k7/0402 — R507 10k/0402 — GND

V500 ESD8V0L2B-03L — D1 D2 — GND

X500S — R505 1M/0402 — C511 100nF/0402 — GND GND GND

VDD3.3 — R503 10k/0402 — C503 no ass./10nF/0402 — GND

X501 — 1 2 3 4 — no ass. — GND

V2 / 08.10.2012 / Ma

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

On-board Debugger	
CPU_44A-V2	
12.10.2012 15:09:42	
Sheet: 5/5	