

#### PCB Manufacturing Notes

##### General Info

Board dimensions - 145mm x 70mm  
Number of layers - 4  
Smallest hole - 0.3mm  
Number of holes - Approx 710  
Minimum Track & Gap - 0.15mm  
RoHS/Lead Free - Yes  
Material - FR4

##### Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
Top Copper	0.5oz
Inner 1	1oz
Inner 2	1oz
Bottom Copper	0.5oz

Finished board thickness to be 1.6mm, tolerance 0.1mm

##### Impedance Control

None required

##### Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

##### Finish

A.) Conductive finish

Plating to be immersion gold.

B.) Soldermask

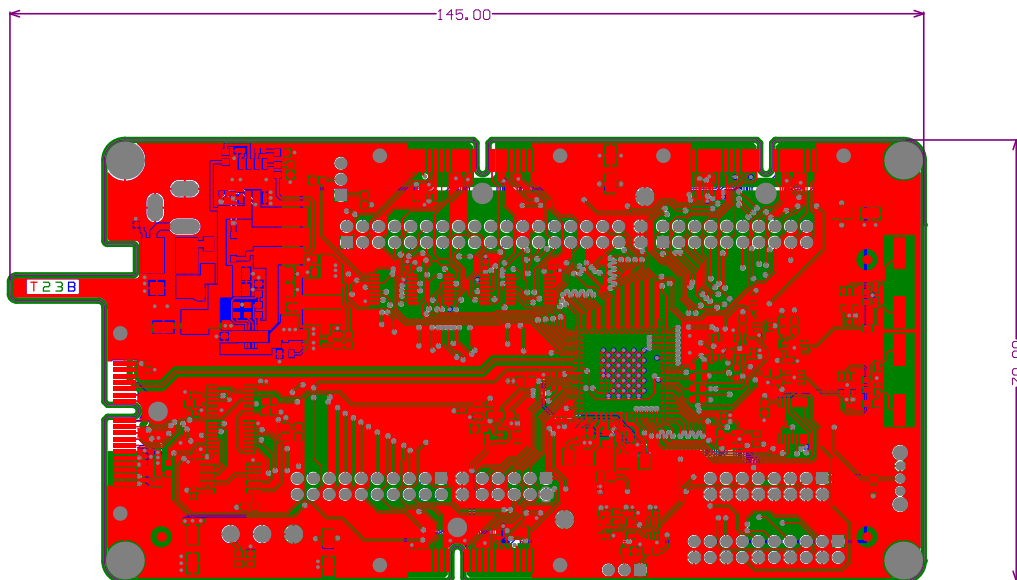
Liquid photo imageable soldermask (GREEN). Pads have not been oversized.  
Supplier should oversize soldermask on pads to suit process.

C.) Silkscreen

Colour white. Supplier should remove any silkscreen which overhangs pads.

##### Drill Data

Drill data is in Excellon format, metric (0000.000), no zero suppression, absolute coordinates.  
Hole size is finished size.



XMOS LTD = XP-SKC-U16 = 1V3 A =06 AUG 2014

#### FABRICATION INSTRUCTIONS

TOP COPPER LAYER

BOTTOM COPPER LAYER

INNER 1 COPPER LAYER

INNER 2 COPPER LAYER

**XMOS**

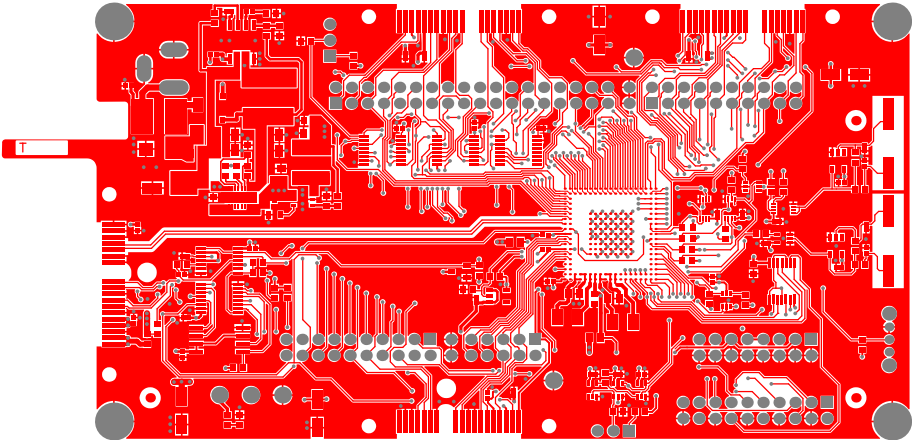
Project Name

XP-SKC-U16

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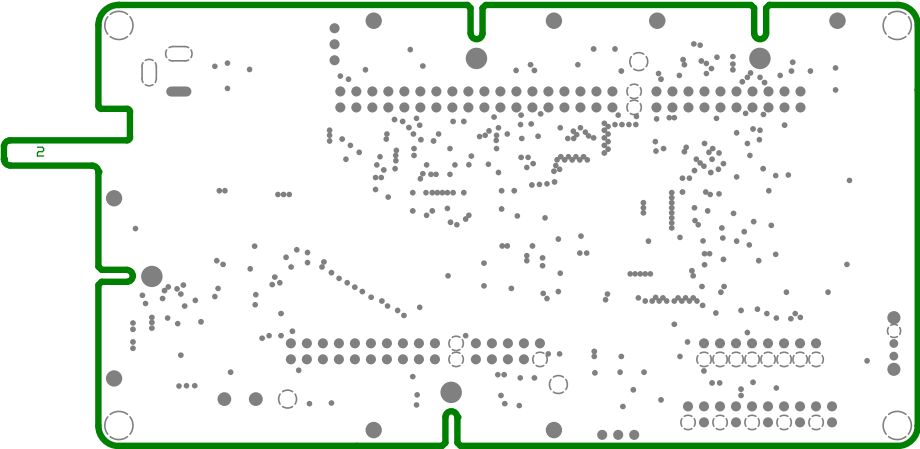
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Top Copper



TOP COPPER LAYER

Inner 1

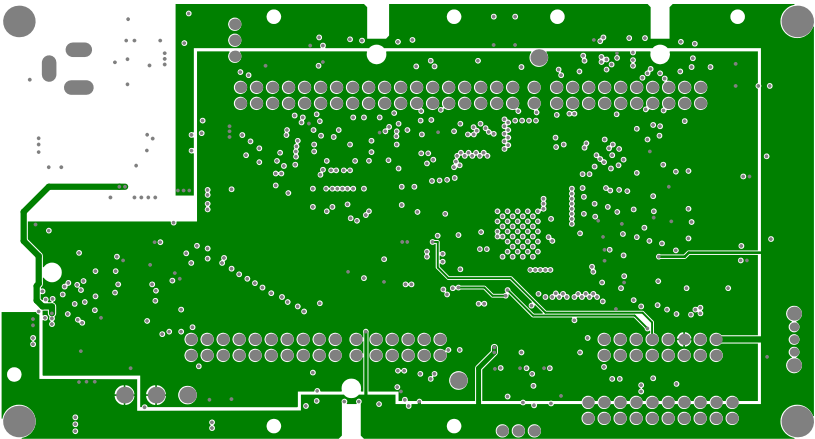


INNER 1 COPPER LAYER



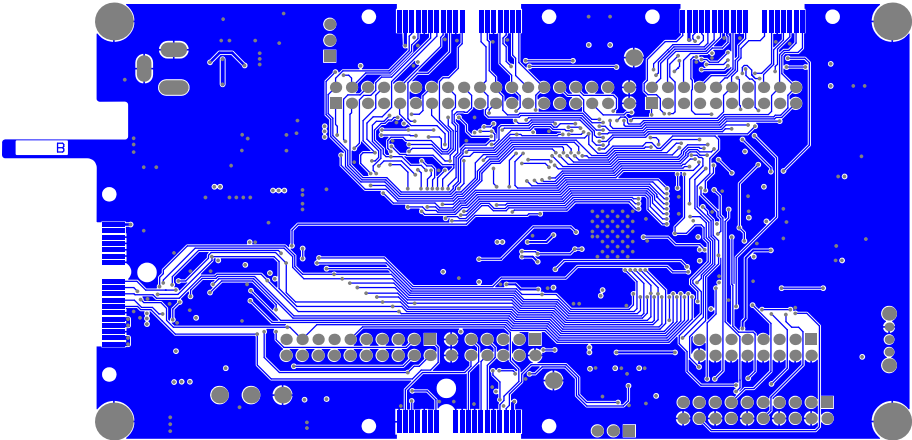
Inner 2

U



INNER 2 COPPER LAYER

Bottom Copper



BOTTOM COPPER LAYER





R5



R5

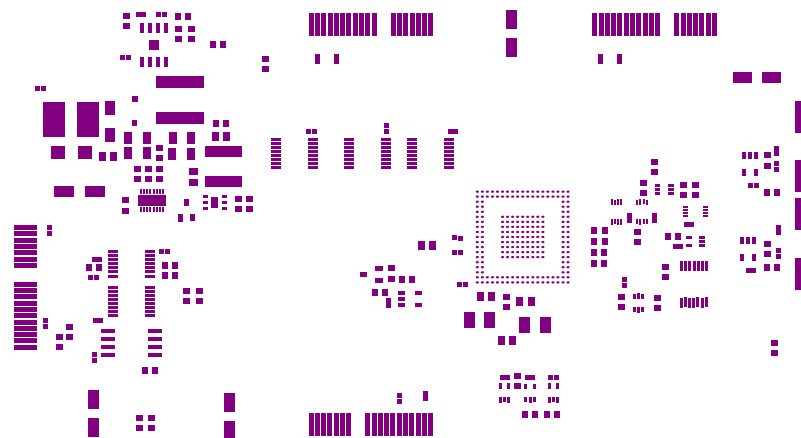


R5



R5

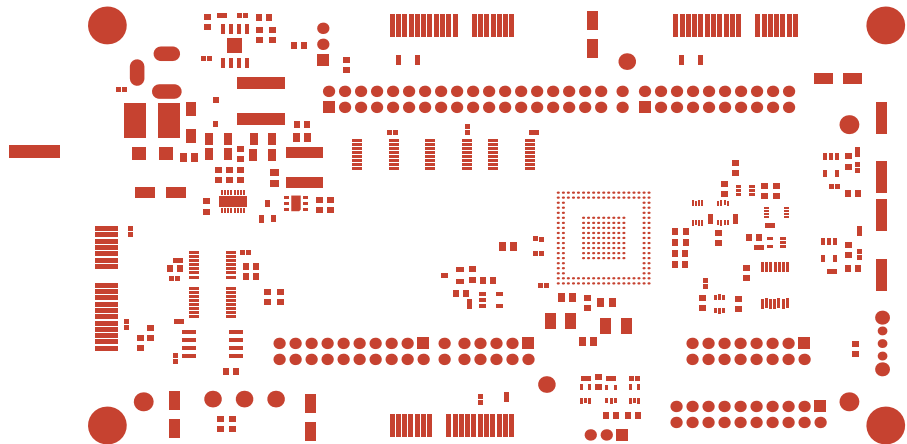
BOTTOM SLUICED LAYER



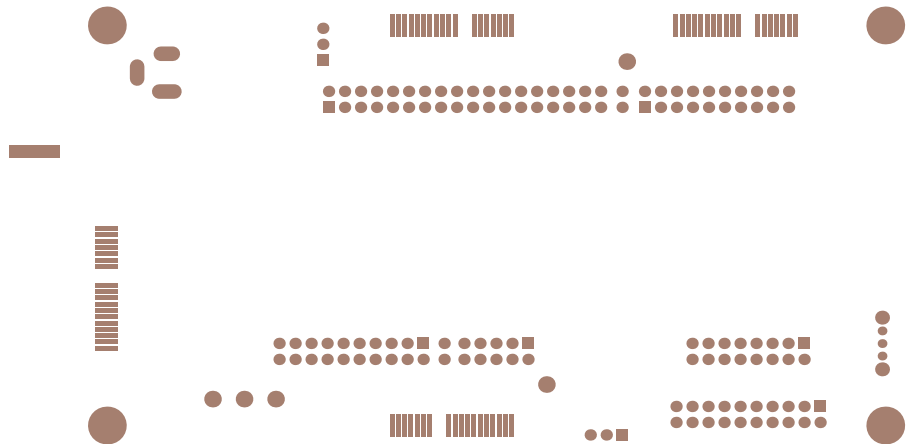
TOP PASTE LAYER



BOTTOM PASTE LAYER



TOP SOLDER MASK LAYER



BOTTOM SOLDER MASK LAYER



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Material – FR4

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Layer	Copper Weight (Pre-Plating)
	0.5oz
	1oz
	1oz
	0.5oz

Finished board thickness to be 1.6mm, tolerance 0.1mm

##### Impedance Control

None required

##### Copper Thieving/Balancing

The supplier may add copper thieving/balancing if required.

##### Finish

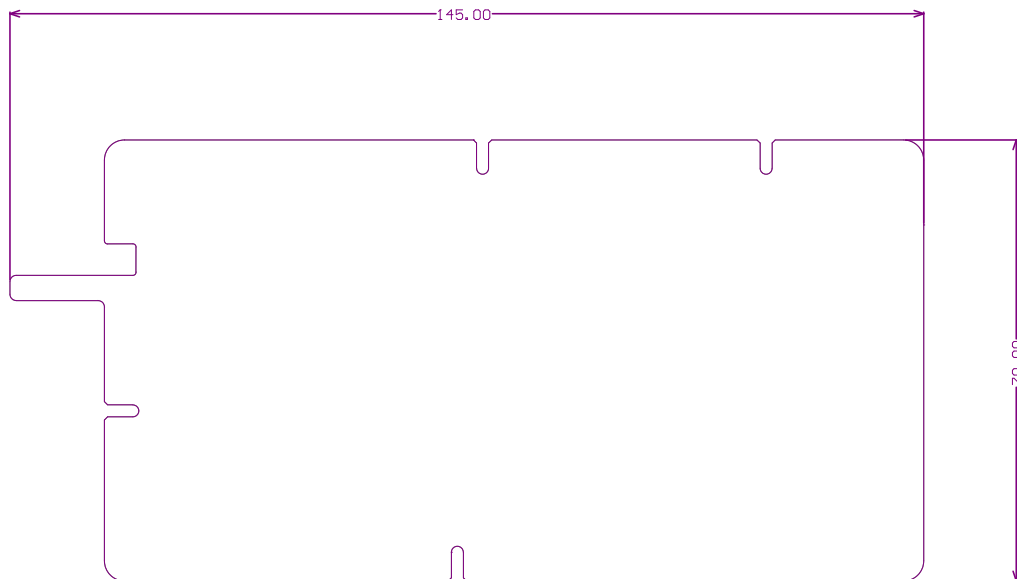
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B.) Soldermask  
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C.) Silkscreen  
Colour white. Supplier should remove any silkscreen which overhangs pads.

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1oz	
0.5oz	

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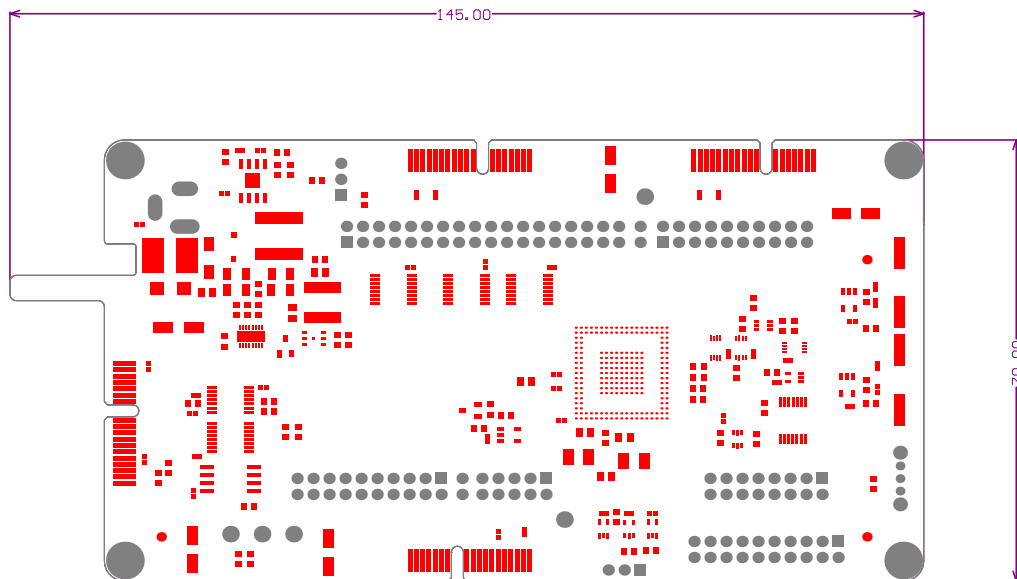
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Material – FR4

##### Stackup

Stackup is to be as follows:

Layer	Copper Weight (Pre-Plating)
1	0.5oz
2	1oz
3	1oz
4	0.5oz

Finished board thickness to be 1.6mm, tolerance 0.1mm

##### Impedance Control

None required

##### Copper Thieving/Balancing

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##### Finish

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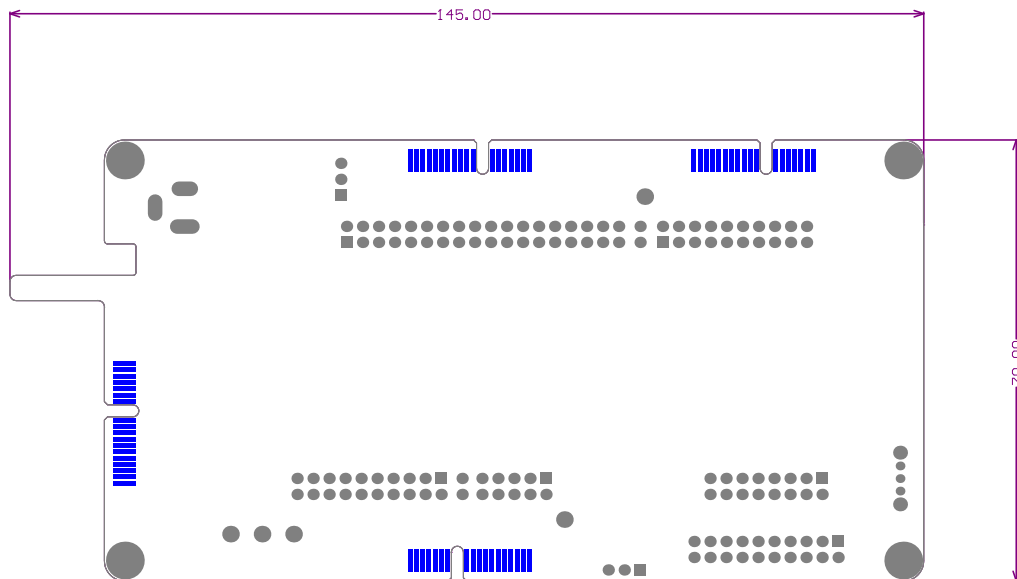
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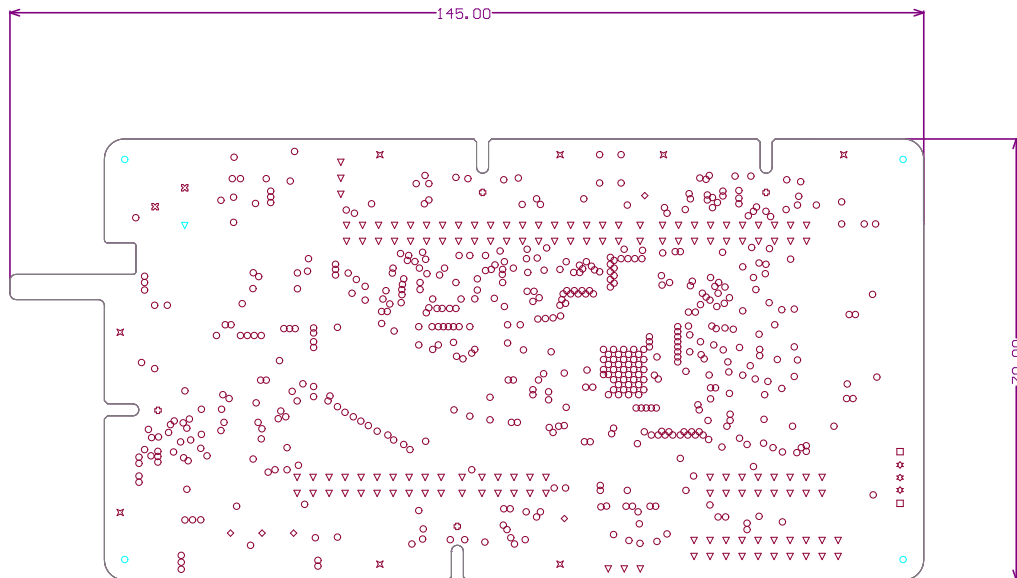
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FABRICATION INSTRUCTIONS DRILL DRAWING

Symbol	Hlt Count	Tool Size	Physical Length	Rout Path Length	Plated	Hole Type
o	563	0.3mm (11.811mm)			PTH	Round
e	3	0.8mm (31.496mm)			PTH	Round
v	132	1mm (39.37mm)			PTH	Round
□	2	1.5mm (59.055mm)			PTH	Round
o	5	1.6mm (62.992mm)			PTH	Round
x	8	2mm (78.74mm)			NPTH	Round
o	4	2.8mm (110.236mm)			NPTH	Round
o	4	3.2mm (125.984mm)			PTH	Round
■	2	1mm (39.37mm)	2.9mm (114.173mm)	1.9mm (74.803mm)	PTH	Slot
v		1mm (39.37mm)	3.4mm (133.858mm)	2.4mm (94.488mm)	PTH	Slot
724 Total						

Slot definitions : Rout Path Length = Calculated from tool start centre position to tool end centre position.  
Physical Length = Rout Path Length + Tool Size = Slot length as defined in the PCB layout  
Drill Drawing.

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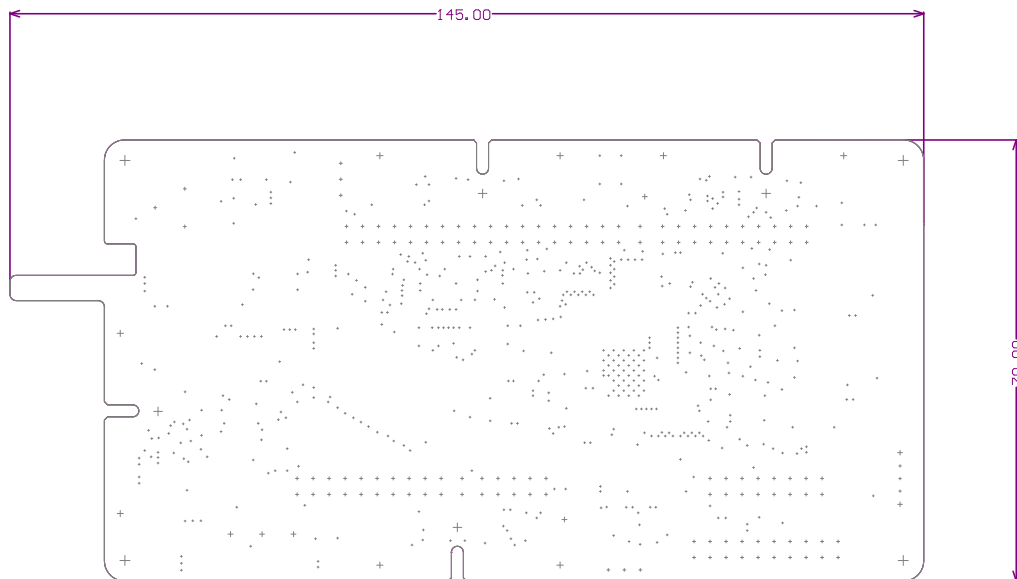
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FABRICATION INSTRUCTIONS

DRILL GUIDE

**XMOS**

Project Name  
XP-SKC-U16

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# BOM

Bill of Materials For Project [XPCB-073-U16 CORE BOARD.PrjPcb] (No PCB Document Selected)

Source Data From:

XPCB-073-U16 CORE BOARD.PrjPcb

Project:

XPCB-073-U16 CORE BOARD.PrjPcb

Variant:

1V3 A



Report Date: 06/08/2014  
Print Date: 06-Aug-14

11:16:52  
11:17:02 AM

#	LibRef	Designator	Description	Footprint	Manufacturer	Manufacturer Part Number	Quantity
1	E-01-0001	R20, R32, R37, R39	RES 1k 0603 1%	0603_R	ROHM	MCR03EZPFX1001	4
2	E-01-0002	R1, R9, R10, R11, R12, R13, R14, R26, R27, R38, R40, R43	RES 10k 0603 1%	0603_R	ROHM	MCR03EZPFX1002	12
3	E-01-0008	R4, R5, R8, R15, R16, R17	RES 33R 0603 1%	0603_R	ROHM	MCR03EZPFX3390	8
4	E-01-0012	R30, R46	RES 0R 0603 1%	0603_R	ROHM	MCR03EZPJ000	2
5	E-01-0017	R25	RES 5.6k 0603 1%	0603_R	ROHM	MCR03EZPFX5601	1
6	E-01-0021	R44, R45	RES 4.7k 0603 1%	0603_R	ROHM	MCR03EZPFX4701	2
7	E-01-0022	R8, R42	RES 470R 0603 1%	0603_R	ROHM	MCR03EZPFX4700	2
8	E-01-0027	R24	RES 2.2k 0603 1%	0603_R	ROHM	MCR03EZPFX2201	1
9	E-01-0032	R18, R33	RES 100k 0603 1%	0603_R	ROHM	MCR03EZPFX1003	2
10	E-01-0035	R7, R41	RES 2.2M 0603 5%	0603_R	ROHM	MCR03EZPJ225	2
11	E-01-0050	R23, R29	RES 18k 0603 1%	0603_R	ROHM	MCR03EZPFX1802	2
12	E-01-0083	R34, R35	RES 160R 0603 1%	0603_R	ROHM	MCR03EZPFX1600	2
13	E-01-0118	R36	RES 22k 0603 1%	0603_R	ROHM	MCR03EZPFX2202	1
14	E-01-0122	R21	RES 33k 0603 1%	0603_R	ROHM	MCR03EZPFX3302	1
15	E-01-0128	R19	RES 62k 0603 1%	0603_R	ROHM	MCR03EZPFX6202	1
16	E-01-0220	R31	RES 100k 0402 1%	0402_R	ROHM	MCR01M2ZF1003	1
17	E-01-0270	R22	RES 11.8k 0603 1%	0603_R	ROHM	MCR03EZPFX1182	1
18	E-01-0275	R2, R3	RES 0R1 0805 5%	0805_R	TE Connectivity	1622825-1	2
19	E-02-0002	C1, C2, C3, C8, C9, C12, C13, C14, C15, C19, C23, C26, C28, C29, C30, C31, C34, C35, C37, C38, C39, C41, C42, C44, C45, C46, C47, C48, C49, C51, C52	M.LCC 100nF 0402 X7R 16V	0402_C	Murata	GRM155R71C104KA88	31
20	E-02-0003	C32	M.LCC 10nF 0402 X7R 50V	0402_C	Murata	GRM155R71H103KA88	1
21	E-02-0004	C6, C7, C25	M.LCC 22uF 0805 X5R 6.3V	0805_C	Murata	GRM218R60J226ME39	3
22	E-02-0005	C4, C50	M.LCC 4.7uF 0603 X5R 6.3V	0603_C	Murata	GRM188R60J479KE19	2
23	E-02-0008	C10, C11, C53, C54	M.LCC 33pF 0402 COG 50V	0402_C	Murata	GRM1555C1H330JZ01	4
24	E-02-0011	C20	M.LCC 2.2nF 0402 X7R 50V	0402_C	Murata	GRM155R71H222KA01	1
25	E-02-0015	C16	Al Elec 100uF 16V CaseD SMD	AL_ELEC_SMD_D	Panasonic	EEEFK1C101P	1
26	E-02-0017	C5	M.LCC 100nF 0603 X7R 16V	0603_C	Murata	GRM188R71C104KA01	1
27	E-02-0019	C27	M.LCC 2.2uF 0603 X5R 10V	0603_C	Murata	GRM188R61A225ME34	1
28	E-02-0021	C24	M.LCC 4.7uF 0805 X5R 10V	0805_C	Murata	GRM218R61A479KE34	1
29	E-02-0031	C13, C36, C40, C43	Al Elec 47uF 16V CaseC SMD	AL_ELEC_SMD_C	Panasonic	EEEFK1C470LR	4
30	E-02-0037	C21, C22	M.LCC 22uF 1206 X5R 16V	CAPC3216X226ME19	Murata	GRM31CR61C226ME19	2
31	E-02-0039	C17, C18	M.LCC 10uF 1206 X5R 25V	CAPC3216X104M140N	Murata	GRM31CR61E106MA12L	2
32	E-03-0021	U13	Memory, Flash, SPI, 16Mb (8Kx256), S0K-8W	S0K8W	Micron	M25P16-MMM8	1
33	E-04-0022	J2	IDC Boxed Header, Right Angle, PCB Mount, Polarisred, 20 Way, 2x10, 0.1" Pitch	DC_HEADER_RA_20PIN	Sullins	SBH11-PBPC-D10-RA-BK	1
34	E-04-0050	J3	DC Power Jack, 5.5mm x 2.1mm, 2.5A, Through Hole	PWR_JACK_TH_55	CLJ	PJ-002A	1
35	E-04-0067	J4, J5, J11, J12	PdE End Fire Socket, x1, 36 Pin, SMD	PdE_EDGE_SOCKET_X1	Sullins	NWE18DHFQ3-1941	4
36	E-04-0080	J14	Male Header, Shrouded, 16 Way, 2x8, 0.1" pitch	HEADER_2x8PIN_BOX	Sullins	SBH11-PBPC-D08-ST-BK	1
37	E-04-0090	J14, J15	Male Header, Unshrouded, 3 Way, 1x3, 0.1" pitch	JUMPER_HEADER_3PIN	PCI	68000-1034LF	2
38	E-05-0006	U10	Voltage regulator, LDO, Fixed, 3.3V, 150mA	SOT23_5	ON Semiconductor	NCP969SND31TG	1
39	E-05-0028	U9	DC-DC Buck Converter, 1.5A, 1.5MHz, DFN8	DFN8_ST1506	ST Microelectronics	ST1506PWR	1
40	E-05-0031	U8	DC-DC Buck Converter, Adjustable, 1.2MHz, 3A, S0K8	S0K127P600X175-9AN	Richtek	RT8203BHJSP	1
41	E-05-0033	U21	Dual Diode Current Limiting OR DFN16EP	DFN17-EP	Linear Technology	LTCA415EDHWPBFP	1
42	E-07-0019	X2	Crystal, 25MHz, HC49US SMD, Fundamental, 18pF, Tol. ±30ppm, Stab. ±50ppm	XTAL_HC49US_SMD	Abracon	ABLS-25.000MHz-B4-F-T	1
43	E-07-0030	X1	Crystal, 24MHz, HC49US SMD, Fundamental, 18pF, Tol. ±30ppm, Stab. ±50ppm	XTAL_HC49US_SMD	Abracon	ABLS-24.000MHz-B4	1
44	E-08-0002	FB2	Ferrite Bead, 330R AT 100MHz, 0603, 1.7A	0603	Murata	BLM18K3331SN1	1
45	E-08-0006	FB1	Ferrite Bead, 120R AT 100MHz, 0805, 3A	0805	Murata	BLM21PG121SN1	1
46	E-09-0005	L4	Power Inductor, 2.2uH, 2.7A, 44mR DCR	TAYO_NR6020	Taiyo Yuden	NR6020I2R2N	1
47	E-09-0018	L3	Power Inductor, 6.8uH, 4A, 33mR DCR	TAYO_NR8040	Taiyo Yuden	NR8040I6R8N	1
48	E-09-0020	L1, L2	Power Inductor, 4.7uH, 2.9A, 67mR DCR	MP4040	Cooper Bussmann	MP4040R4-4R7-R	2
49	E-10-0013	D2	Diode, 100V, 0.3A, SOD123	SOD123	Diodes Inc	1N4148W-7-F	1
50	E-10-0021	D1	Schottky Diode, 40V, 2A, SMA	DIOM5326X230N	Diodes Inc	B240A-13-F	1
51	E-10-0022	D3	Unidirectional Transient Protection Diode, 22V Stand-Off, 600W, SMB	SMB	STMicroelectronics	SMBJ22A	1
52	E-11-0016	U2	XMOS XS1-U16A Processor, 217BGA, 500MHz	BGA217C20P19X19_1600X1600X136	XMOS	XS1-U16A-128-FB217-C10	1
53	E-12-0001	D4	LED, GREEN, 0603	0603_LED	Kingbright	APT1608CQCK	1
54	E-13-0006	U20	Logic Buffer, Tri-State, UHS Series, SC70	SC70_5	Fairchild	NC7SZ125P5X	1
55	E-13-0009	U6	2-Input Multiplexer, UHS Series, SC70	SC70_6	Fairchild	NC7SZ157PBX	1
56	E-13-0014	U3	Triple Logic Buffer, UHS Series, US8	US8	Fairchild	NC7NZ34K8X	1
57	E-13-0021	U4, U24	Unbuffered Inverter, UHS Series, SOT-23-5	SOT23_5	Fairchild	NC7SZU04M5X	2
58	E-13-0026	U25	Dual Logic Buffer, Open Drain Output, UHS Series, SC70	SC70_6	Fairchild	NC7WZ07PBX	1
59	E-13-0099	U12, U15, U16, U17	Quad 1-of-2 Multiplexer/Demultiplexer, Bus Switch, CBT LV Series, TSSOP16	SOP85P640X110-16N	NXP Semiconductor	74CBT1V3257PW	4
60	E-13-0101	U1	Quad Bus Sw itch, CBT Series, TSSOP14	SOP85P640X1010-14N	NXP Semiconductor	CBT3125PW	1
61	E-13-0103	U5, U7	Triple Logic Buffer, Schmitt Trigger, UHS Series, US8	US8	Fairchild	NC7NZ17K8X	2
62	E-13-0106	U11	Microprocessor or Reset Circuit, 2.9V, Active Low, Open Drain, SOT23	SOT23	Diodes Inc	APX803-29SAG	1
63	E-13-0108	U14	Quad 0-type flip-flop with set and reset, p.e. trig, TSSOP14	TSSOP14	NXP Semiconductor	74LV74PW	1
64	E-13-0111	U23	Buffered Inverter, SC70	SC70_5	Texas Instruments	SN74LVC1G08DDCKT	1
65	E-13-0132	U18, U22	Single FET Bus Sw itch, SC70-5	SC70_5	Texas Instruments	SN74CBT1G125DDCK	2
66	E-13-0142	U19	Microprocessor or Reset Circuit, 4.4V, Active Low, Push Pull, SOT23	SOT23	Diodes Inc	APX809-44SAG	1
67	E-15-0032	TP5, TP6	Through Hole Testpoint, Compact, 1.8mm Loop, Red	TESTPOINT_1_6MM_THH	Keystone	5005	2
68	E-15-0033	TP1, TP3, TP4	Through Hole Testpoint, Compact, 1.8mm Loop, Black	TESTPOINT_1_6MM_THH	Keystone	5006	3
69	E-16-0008	SW1	Miniature Slide Sw itch, SMD, Vertical, THT	SW_C08_VERT_SFOT	C&K	CS102011MSQGN1	1
70	E-17-0025	F1	Polyswitch Resettable Fuse, 2920, 3A, 16V	2920_FUSE_COINC	LifeLine	2920L300150RX	1
71	P-01-0011	PROD1, PROD2, PROD3, PROD4	Feet, Nylon, M3, 6mm Standoff		Toby Electronics	DCB-6	4
72	P-01-0034	PROD5, PROD6	Jumper, 2 Position, 2.54mm x 13.5mm, Black, Handled		Toby Electronics	TSL-260-RH	2