

NOTES (UNLESS OTHERWISE SPECIFIED):

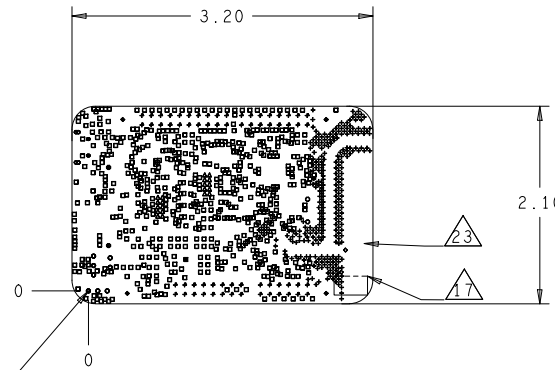
- THIS DRAWING SPECIFIES THE REQUIREMENTS FOR A PRINTED WIRING BOARD IN ACCORDANCE WITH SPECIFICATION IPC-A-600 CLASS 2 (LATEST REVISION).
- THE PWB MUST BE LEAD FREE ASSEMBLY PROCESS COMPATIBLE AND MUST BE ABLE TO HANDLE A MINIMUM OF 5 CYCLES AT 260 DEGREES CELSIUS FOR 10 SECONDS.
- BASE MATERIAL - LAMINATE AND PREPREG SHALL MEET IPC-4101B-26, 83 or 98
T_g - MUST BE GREATER THAN OR EQUAL TO 150 DEGREES CELSIUS.
T_d - MUST BE GREATER THAN OR EQUAL TO 330 DEGREES CELSIUS.
E_r - MUST BE FROM 4.2 TO 4.4
- COPPER FOIL WEIGHT - SEE STACKUP DETAIL 'A'
- CHARACTERISTIC IMPEDANCE - SEE DETAIL 'B'
- MINIMUM CONDUCTIVE WIDTH/SPACING TO BE .0045"/.005"
- PLATING FINISH - BOTH SIDES ENIG (ELECTROLESS NICKEL IMMERSION GOLD):
.05080-.232 MICRON (2-8 MICROINCH) OF GOLD OVER
2.540-6.350 MICRON (100-250 MICROINCH) OF NICKEL.
- ALL THROUGH HOLE VIAS MAY BE PLATED SHUT.
- SOLDERMASK - GREEN COLOR BOTH SIDES.
MODIFICATION OF SOLDERMASK IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM FREESCALE.
- SILKSCREEN - WHITE EPOXY INK, BOTH SIDES. NO SILK ON PADS.
- ELECTRICAL TEST - 100% IPCD356.
- PRINTED WIRING BOARD IS TO BE INDIVIDUALLY BAGGED.
- DRC'S MUST BE RUN ON THE GERBER BEFORE BUILDING BOARDS.
UNLESS PRIOR APPROVAL IS GIVEN IN WRITING BY FREESCALE.
- TEARDROPS MAYBE ADDED AT THE FAB HOUSE TO ALL SIGNAL LAYERS.
- 2 SOLDER SAMPLES TO BE PROVIDED.
- BASIC GRID INCREMENT AT 1:1 IS .0001.
- SUPPLIER MARKINGS - ON SOLDER SIDE ONLY, WHERE SHOWN.
- MUST BE UL RECOGNIZED AND MUST HAVE AN ID THAT CONFORMS TO UL94V-0
- THE PWB WILL BE MARKED AS LEAD FREE BY USE OF AN INK STAMP (Pb)
- THE PWB WILL BE MARKED AS LEAD FREE PROCESS COMPATIBLE BY USE OF AN INK STAMP (260°C)
- ALL PLATED AND NON-PLATED THROUGH HOLES ARE TO BE DRILLED AT PRIMARY DRILL STEP.
ALL HOLE LOCATION TOLERANCES ARE TO BE +/- .002 IN REFERENCE TO THE PRIMARY DATUM.
- FINISHED PCB MUST BE PANELIZED FOR ASSEMBLY ACCORDING TO CONTRACT MANUFACTURERS REQUIREMENTS.
THE ADDITION OF RAILS AND .125" NON-PLATED TOOLING HOLES ARE AT THE DISCRETION OF CONTRACT MANUFACTURER. PANELIZATION MUST BE APPROVED BY CONTRACT MANUFACTURER.

INTENTIONAL SHORTS AT:

SH3 P3V3 & N20114060
SH4 SPI_CLK & N20113927:
SH7 SPI_SS & N20113921
SH8 KW40_SWD_CLK & N20113933
SH9 SWD_DIO_TGTMCU & N20113935
SH10 BUZZER & N20092069
SH11 INT1_COMBO & N20092076
SH12 SW3 & N20092083
SH13 SW4 & N20092090
SH14 ELEC_IN2 & N20092097
SH15 ELEC_IN1 & N20092104
SH18 SA1_FX0S8700CO
SH19 SA0_FX0S8700CO
SH21 SWD_DIO_TGTMCU & N20755278
SH22 BUZZER & N20755274
SH23 PTC5 & N20755280
SH24 PTC4 & N20064946
SH25 PTB17 & N20184312
SH26 ADC0_SE0/BATTERY_MONITORING & N20065047
SH27 ADC0_SE1/POT & N20065043
SH28 PTB16 & N20184318
SH29 CMT & N20184324
SH30 PTC5 & N20184330
SH31 COM & N20065031
SH33 PTB18 & N20065027
SH500 V_TGTMCU & P3V3
SH501 P3V3_SDA & SDA_VOUT33
SH502 P3V3 & SDA_VOUT33
SH503 P3V3_LED & P3V3
J12 SWD_CLK_TGTMCU & KW40_SWD_CLK
J13 SWD_DIO_TGTMCU_BUF & SWD_DIO_TGTMCU
J14 SWD_CLK_TGTMCU_BUF & SWD_CLK_TGTMCU

J25 SDA_RST_TGTMCU_J_B & SDA_RST_TGTMCU_B

- INTENTIONAL SHORT ON TOP LAYER BETWEEN RF_ANT AND GND
- OVERALL PCB DIELECTRIC THICKNESS ARE TARGETED (A & C) 10 MILS +/- 10% AND (B) 38 MILS +/- 10%
AS SHOWN IN DETAIL 'A'. ADJUSTMENT IN SUBSTRATE B IS ALLOWED TO MEET OVERALL HEIGHT REQUIREMENT.



DETAIL B
IMPEDANCE REQUIREMENTS
IMPEDANCE TOLERANCE IS 10%
PRIMARY DATUM
GRID ORIGIN

Layers	Single Ended		Differential			Differential		
	Trace Width (Mils)	Impedance (Ohms)	Trace Width (Mils)	Trace Spacing "Airgap" (Mils)	Impedance (Ohms)	Trace Width (Mils)	Trace Spacing "Airgap" (Mils)	Impedance (Ohms)
L1_PS	18.00	50	11.5	6.00	90	8.50	6.00	100

FINISHED Cu WEIGHT		
0.062" +/- 10%	A - TARGET : 10 MILS	LAYER 1 TOP SIDE 1 oz.
	B - TARGET : 38 MILS	LAYER 2 GROUND PLANE 1 oz.
	C - TARGET : 10 MILS	LAYER 3 INTERNAL 1 1 oz.
		LAYER 4 BOTTOM SIDE 1 oz.

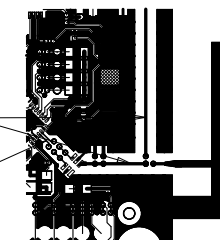
DETAIL A
LAYER STACKUP
SCALE: NONE

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL RELEASE	07-04-14	A.O
	B	RE-SPIN PER ECO	11-12-14	A.O
	B1	UPDATE SHORT LIST	12-02-14	A.O
	B2	UPDATE SHORT LIST	12-02-14	A.O
	C	Respin	07/31/15	

DRILL CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
+	8.0	+0.0/-8.0	PLATED	284
■	10.0	+0.0/-10.0	PLATED	564
•	12.0	+0.0/-12.0	PLATED	2
•	12.0	+2.0/-2.0	PLATED	2
▲	28.0	+2.0/-2.0	PLATED	20
■	35.0	+2.0/-2.0	PLATED	57
•	40.0	+3.0/-3.0	PLATED	8
+	42.0	+3.0/-3.0	PLATED	64
■	63.0	+3.0/-3.0	PLATED	1
•	73.0	+3.0/-3.0	PLATED	2
•	125.0	+3.0/-3.0	NON-PLATED	4
•	34.0x26.0	+2.0/-2.0	PLATED	2
•	60.0x33.0	+2.0/-2.0	PLATED	2

DETAIL B

50 OHMS SINGLE ENDED
TRACE: 18 MILS +/- 10%
100 OHMS DIFF PAIR
TRACE: 8.5 MILS WIDTH
SPACING: 6 MILS



PART NO. 170-28379		FREESCALE	
PUBI (PUBLIC INFORMATION) X FIUO (FREESCALE INTERNAL USE ONLY) FCP (FREESCALE CONFIDENTIAL PROPRIETARY)		THIS DOCUMENT CONTAINS INFORMATION PROPRIETARY TO FREESCALE AND SHALL NOT BE USED FOR ENGINEERING DESIGN PROCUREMENT OR MANUFACTURE IN WHOLE OR IN PART WITHOUT THE CONSENT OF FREESCALE.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS ANGLES .XX .01 .0-90° .XXX .005 ✓ RMS ALL MACHINED SURFACES BREA/K ALL SHARP EDGES AND CORNERS. REMOVE BURRS. UNDERLINED DIM. NOT TO SCALE. THIRD ANGLE ORTHOGRAPHIC PROJECTION IS USED.		6501 WILLIAM CANNON DRIVE WEST AUSTIN, TEXAS 78735 USA TITLE: PRINTED WIRING BOARD FRDM-KW40Z	
APPROVALS DRAWN AVID TECH CHECKED A. QUIROZ DESIGN ENGINEER A. QUIROZ		DATE 07/31/15 07/31/15 07/31/15	
SCALE 1/1		DO NOT SCALE DRAWING	
SHEET 1 OF 1		REV C	