NOTES (UNLESS OTHERWISE SPECIFIED):

1. THIS DRAWING SPECIFIES THE REQUIREMENTS FOR A PRINTED WIRING BOARD IN ACCORDANCE WITH SPECIFICATION IPC-A-600 CLASS 2 (LATEST REVISION).

2. 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.

3. BASE MATERIAL - LAMINATE AND PREPREG SHALL MEET IPC-4101B-26, 83 or 98
   Tg - MUST BE GREATER THAN OR EQUAL TO 150 DEGREES CELSIUS.
   Td - MUST BE GREATER THAN OR EQUAL TO 330 DEGREES CELSIUS.
   Er - MUST BE FROM 4.2 TO 4.4

4. COPPER FOIL WEIGHT - SEE STACKUP DETAIL 'A'

5. CHARACTERISTIC IMPEDANCE - SEE DETAIL "B"

6. MINIMUM CONDUCTIVE WIDTH/SPACING TO BE .006"/.005"

7. 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.

△8 ALL THROUGH HOLE VIAS MAY BE PLATED SHUT.

9. SOLDERMASK - GREEN COLOR BOTH SIDES.
   MODIFICATION OF SOLDERMASK IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM FREESCALE.

10. SILKSCREEN - WHITE EPOXY INK, BOTH SIDES. NO SILK ON PADS.

11. ELECTRICAL TEST - 100% IPCD356.

12. PRINTED WIRING BOARD IS TO BE INDIVIDUALLY BAGGED.

13. DRC'S MUST BE RUN ON THE GERBER BEFORE BUILDING BOARDS, UNLESS PRIOR APPROVAL IS GIVEN IN WRITING BY FREESCALE.

14. TEARDROPS MAYBE ADDED AT THE FAB HOUSE TO ALL SIGNAL LAYERS.

15. 2 SOLDER SAMPLES TO BE PROVIDED.

△16 BASIC GRID INCREMENT AT 1:1 IS .0001.

△17 SUPPLIER MARKINGS - ON SOLDER SIDE ONLY, WHERE SHOWN.
   - MUST BE UL RECOGNIZED AND MUST HAVE AN ID THAT CONFORMS TO UL94V-0

~~18. THE PWB WILL BE MARKED AS LEAD FREE BY USE OF AN INK STAMP (PB)~~

19. THE PWB WILL BE MARKED AS LEAD FREE PROCESS COMPATIBLE BY USE OF AN INK STAMP (260°C)

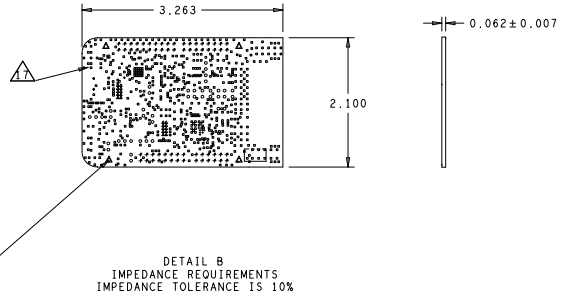
20. ALL PLATED AND NON-PLATED THROUGH HOLES ARE TO BE DRILLED AT PRIMARY DRILL STEP. ALL HOLE LOCATION TOLERANCES ARE TO BE +/-.002 IN REFERENCE TO THE PRIMARY DATUM.

21. 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.

22. INTENTIONAL SHORTS AT:
   SH1 N23941637 & PTA0/SWD_CLK
   SH3 N23941631 & PTE16/SPI0_PCS0
   SH6 N23941622 & PTE17/SPI0_SCK
   SH7 N23941634 & PTA3/SWD_DIO
   SH8 N23943103 & PTD7
   SH9 N23943106 & PTC2
   SH10 N23943109 & PTC1
   SH12 N23943115 & PTB2/UART0_RTS
   SH13 N23736069 & N23952324
   SH14 N23943118 & PTB17/UART0_CTS
   SH15 N23943121 & PTA1/UART0_RX
   SH16 N23943124 & PTA2/UART0_TX
   SH40 PTC3 & DIO0
   SH41 PTC4 & DIO1
   SH42 N24125287 & V_MCU
   SH43 N24125299 & GND
   SH44 N23353504 & XTAL_32M
   SH45 PTA18 & DIO5/CLKOUT
   J10 PTD4 & DIO4
   J11 RESET_B_TGTMCU & SDA_RST_TGTMCU-J_B
   J40 N23977915 & V_RF
   J45 N23977915 & P3V3_BRD
   J46 N23977915 & P3V3
   J47 N23977915 & V-RF

△23 OVERALL PCB DIELECTRIC THICKNESS ARE TARGETED (A) 10 MILS+/-10%, (B) 38 MILS +/-10% AND (C) 10 MILS +/- 10%. AS SHOWN IN DETAIL 'A'. ADJUSTMENT IN SUBSTRATE B IS ALLOWED TO MEET OVERALL HEIGHT REQUIREMENT.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL RELEASE	06/29/15	A.Q
	A1	SILK UPDATES, INITIAL PRODUCTION	01/20/16	A.Q



DETAIL B
IMPEDANCE REQUIREMENTS
IMPEDANCE TOLERANCE IS 10%

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	5.50	90			
L4_SS			11.5	5.50	90			

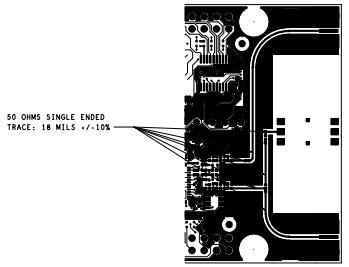
DRILL CHART: TOP to BOTTOM ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
△8	8.0	+0.0/-8.0	PLATED	8
▫	10.0	+2.0/-10.0	PLATED	653
▪	18.0	+2.0/-18.0	PLATED	2
▲	31.0	+2.0/-2.0	PLATED	20
○	40.0	+3.0/-3.0	PLATED	41
◆	42.0	+3.0/-3.0	PLATED	64
■	63.0	+3.0/-3.0	PLATED	1
•	35.0	+3.0/-3.0	NON-PLATED	2
△	125.0	+3.0/-3.0	NON-PLATED	4

△23 0.062 +/- 10%

		FINISHED Cu WEIGHT
LAYER 1	TOP SIDE	1 oz.
LAYER 2	GROUND PLANE	1 oz.
LAYER 3	POWER PLANE	1 oz.
LAYER 4	BOTTOM SIDE	1 oz.

DETAIL A
LAYER STACKUP
SCALE: NONE

DETAIL B



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___ FIUO (FREESCALE INTERNAL USE ONLY)
___ FCP (FREESCALE CONFIDENTIAL PROPRIETARY)

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UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DECIMALS ANGLES
.XX .01 ±1-30'
.XXX .005
✓ RMS ALL MACHINED SURFACES
BREAK ALL SHARP EDGES AND CORNERS. REMOVE BURRS.
UNDERLINED DIM. NOT TO SCALE.
THIRD ANGLE ORTHOGRAPHIC PROJECTION IS USED.

APPROVALS	DATE
DRAWN B. KUHAR	08/26/15
CHECKED A. QUIROZ	08/26/15
DESIGN ENGINEER A. QUIROZ	08/26/15

PART NO. 170-28745

FREESCALE
6501 WILLIAM CANNON DRIVE WEST AUSTIN, TEXAS 78735 USA

TITLE: PRINTED WIRING BOARD
FRDM-KW019032

SIZE	CAD FILE NAME	DWG. NO.	REV
D	LAY-28745	FAB-28745	A1

SCALE 1/1 DO NOT SCALE DRAWING SHEET 1 OF 1