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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
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
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.

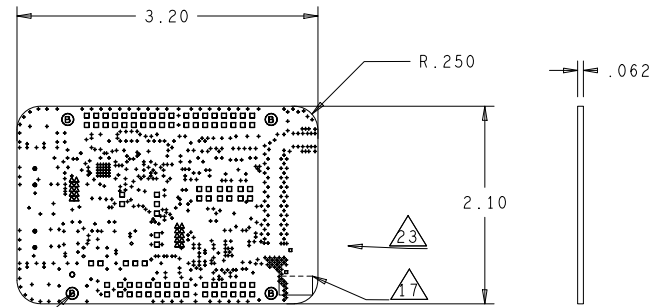
21. FINISHED PCB MUST BE PANELIZED FOR ASSEMBLY ACCORDING TO CONTRACT MANUFACTURERS REQUIREMENTS.
THE ADDITION OF RAILS AND .125" NON-PLATED TOOLING HOLES ARE AT THE DISCRETION OF CONTRACT MANUFACTURER. PANELIZATION MUST BE APPROVED BY CONTRACT MANUFACTURER.

22. INTENTIONAL SHORTS AT:

SH1 D8/INT & PTA19
SH3 D10/SPI_SS & PTC4_SPI_SS
SH4 D11/MOST & PTC6_SPI_SOUT
SH5 D12/MISO & PTC7_SPI_SIN
SH6 D13/SCK & PTC5_SPI_CLK
SH7 D14/ANA/INT & PTD3_I2C_SDA
SH8 D15/ANA/INT & PTD2_I2C_SCL
SH9 DO/RX/INT & PTD7_TX
SH10 D1/TX/INT & PTD6_RX
SH11 D2/INT & PTD5_CTS
SH12 D3/PWM/INT & PTD4_RTS
SH13 RST_TGTMCU_B & RST_B
SH14 UART1_RTS & PTE3_RTS
SH15 UART1_CTS & PTE2_CTS
SH16 UART1_RX & PTE1_RX
SH17 UART1_TX & PTE0_TX
SH18 P3V3 & N23265141
SH19 P3V3_BRD & N23265141
SH24 SPI0_SOUT & PTC6_SPI_SOUT
SH30 SPI0_SCK & PTC5_SPI_CLK
SH31 SPI0_PCS0 & PTC4_SPT_SS
SH32 SPI0_SIN & PTC7_SPI_SIN
SH33 V_MCU & V_RF
SH34 N23360966 & V_MCU
SH35 N23340195 & GND
SH36 D7/CMP/INT & PTD1
SH37 D6/PWM/INT & PTE4
SH38 D5/PWM/INT & GP101:
SH39 D4/INT & GP102
J35 PTA0 & SWD_CLK_TGTMCU
J40 V_MCU & N29265141

23. INTENTIONAL SHORT ON TOP LAYER BETWEEN RF_ANTENNA AND GND

24. OVERALL PCB DIELECTRIC THICKNESS ARE TARGETED (A & C) 10 MILS +/-10% AND (B) 30 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 (Mils)	Impedance (Ohms)	Trace Width (Mils)	Trace Spacing (Mils)	Impedance (Ohms)
L1_PS	18.00	50	11.5	5.50	90	15.00	25.00	100
L4_SS			11.5	5.50	90			

.060	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

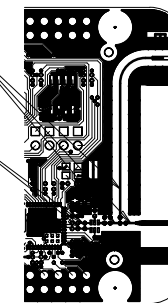
FINISHED Cu WEIGHT

DRILL CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
•	10.0	+2.0/-10.0	PLATED	613
▪	12.0	+2.0/-12.0	PLATED	2
•	18.0	+2.0/-18.0	PLATED	8
▲	31.0	+2.0/-2.0	PLATED	20
◻	40.0	+3.0/-3.0	PLATED	90
◉	63.0	+3.0/-3.0	PLATED	1
•	35.0	+3.0/-3.0	NON-PLATED	4
⊙	125.0	+3.0/-3.0	NON-PLATED	4

DETAIL B

50 OHMS SINGLE ENDED
TRACE: 18 MILS +/-10%

100 OHMS DIFF PAIR
TRACE: 15 MILS WIDTH
SPACING: 25 MILS



PART NO. 170-28684		FREESCALE	
THIS DOCUMENT CONTAINS INFORMATION PROPRIETARY TO FREESCALE AND SHALL NOT BE USED FOR ENGINEERING DESIGN OR IN PART WITHOUT THE CONSENT OF FREESCALE.		6501 WILLIAM CANNON DRIVE WEST AUSTIN, TEXAS 78735 USA	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS ANGLES .XX .01 .0-90° .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.		TITLES PRINTED WIRING BOARD FRDM-28684	
APPROVALS DRAWN AVID TECH CHECKED A. QUIROZ DESIGN ENGINEER A. QUIROZ		DATE 07/16/15 07/16/15 07/16/15	
SCALE 1/1		DO NOT SCALE DRAWING	
SHEET 1 OF 1		REV A	