21-148603 Microstrip Line Document

FCC ID:UZ7211486030A
FCC ID:UZ7211486030B

1. Trace layout and dimensions including rules for:
   Trace and parts isolation requirements;

USI: OEM should copy the original design of antenna length and shapes.

   Placement of passive parts traces, antenna and connectors;

USI: Please refer to Layout file of EVB, ***21-148603_CARRIER_M1_V31***

Boundary limits of size (thickness, length, width) and shape(s) of the trace must be clearly described for each type antenna;

PCB Specification of 21-148603 SiP Module Carrier Board

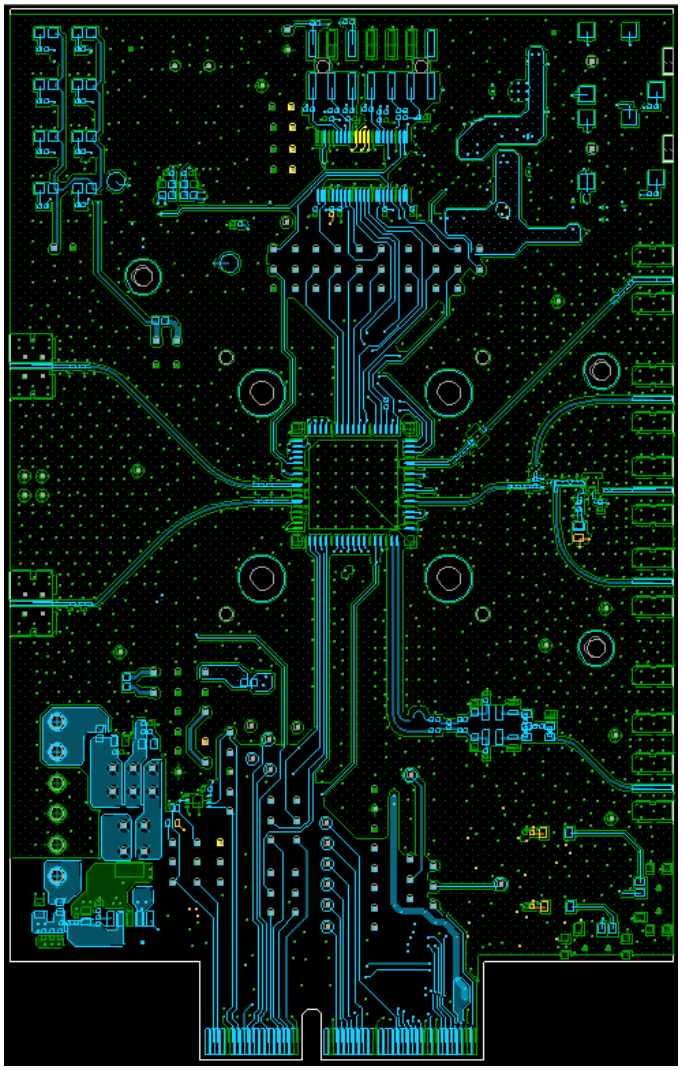
This PCB SPEC is for 21-148603 SiP module carrier board project. This document define the PCB (Printed Circuit Board) manufacturing SPEC. Due to this product are applied in wireless communication field, so all the SPEC defined in this document should be followed strictly in order to control the line impedance and parasitic effects. Any changes or modification must have been rechecked for all test results.

PCB design requirement		
PCB size: 85mm* 135 mm +/-0.127mm		
Eight Layer PCB, Any Layer Stack:		
PCB Material: FR4, TG150, Halogen-Free		
Solder Resister Color: Green		
The PCB stack is as follows: (unit :mil)		
Layer	Thickness	
Solder Mask	0.8	
Add Plating	0.9	
L1	0.6	Layer 1: Top
P.P	9.5	
L2	1.2	Layer 2: GND
P.P	3.4	
L3	1.2	Layer 3: Inner
P.P	27.95	
L4	1.2	Layer 4: GND
P.P	3.4	
L5	1.2	Layer 5: Power
P.P	9.5	
L6	0.6	Layer 6: Bot
Add Plating	0.9	
Solder mask	0.8	
Total	63.15	
Total Thickness: 1.6mm +/- 10%		
Surface finish : Immersion Nickel(118 micro inch)/Gold(2 micro inch)		

Minimum Trace width:4.5 mils, Minimum clearance: 5 mils, tolerance: +/-20%

Boundary limits of the size

Please refer to the PCB specification stack-up, and all the transmitted transmission lines have the 50ohm.



The critical transmitted microstrip lines are the RF2, RF1, BT_RF.

Components on the trace of RF2, RF1, BT_RF

EVB BOM:

RF2's components: L12, L23.
RF1's components: L11, L21.
BT_RF's components: L15, FLT2, L13.

Item Description	Ref Des	Mfr. Name	Mfr. Part Number
CHIP RES 0R MAX0.05R 1/20W 0201 L/F	L12, L23, L11, L21, L13	WALSIN	WR02X000PAL
BPF 2.45G LFB2H2G45CC1D005 SMD4 2.5*2mm	FLT2	MURATA	LFB2H2G45CC1D005

CER CHP C 8.2P +-0.25P C0G 0201 25V LF	L15	MURATA	GRM0335C1E8R2CD01D

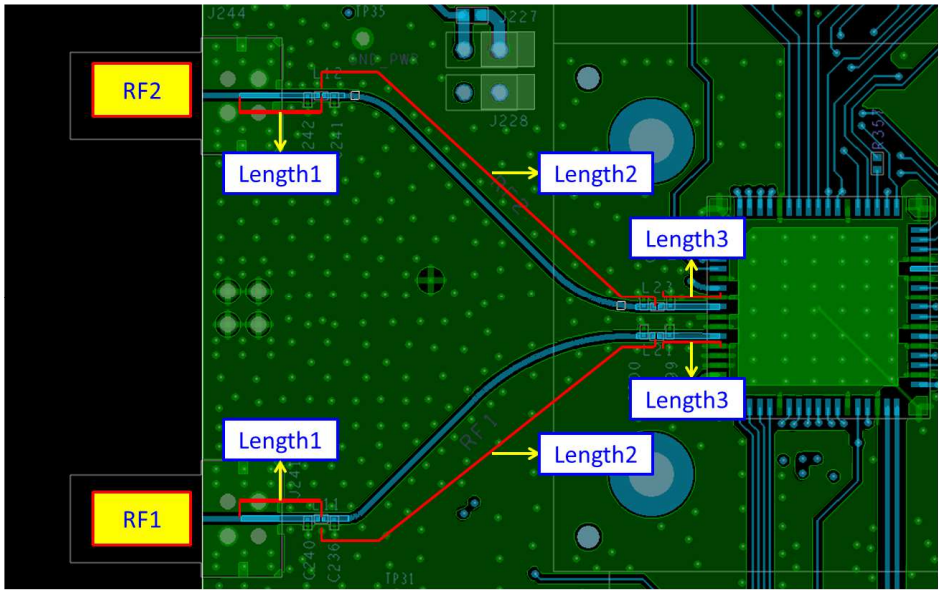
Micro-strip line description and limits for RF2, RF1, BT_RF

RF2:

Length1: 219 mil, Length2: 1052.78 mil, Length3: 166 mil. (+/- 5%)
Width: 15.5 mil. (+/- 5%)

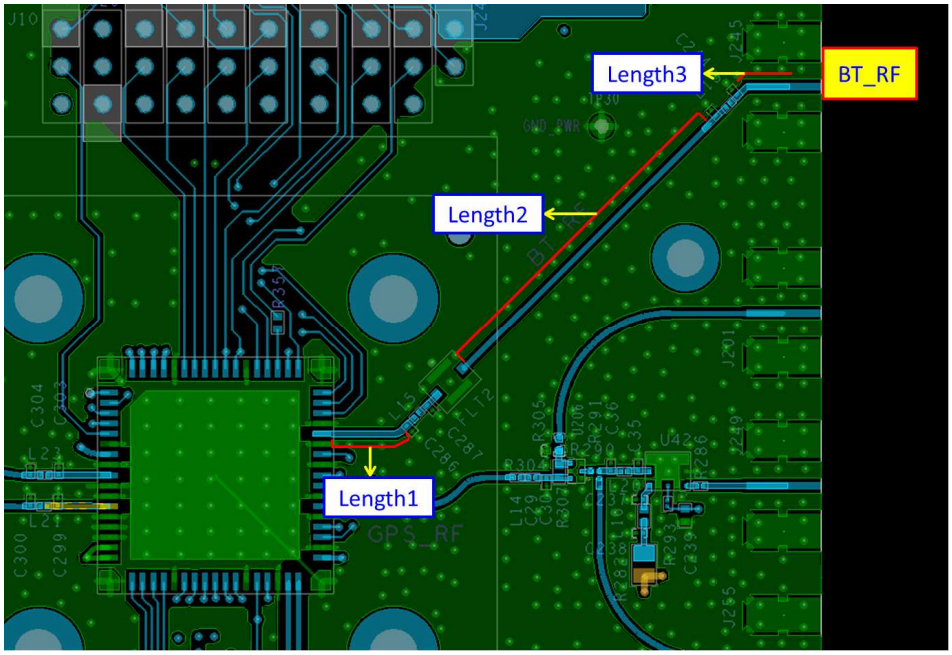
RF1:

Length1: 219.12 mil, Length: 1005.02 mil, Length3: 169.3 mil. (+/- 5%)
Width: 15.5 mil. (+/- 5%)



BT_RF:

Length1: 219 mil, Length2: 1052.78 mil, Length3: 166 mil. (+/- 5%)
Width: 15.5 mil. (+/- 5%)



Different antenna length and shapes affect radiated emissions and each design shall be considered a different type; e.g., antenna length in multiple(s) of frequency wavelength and antenna shape (traces in phase) can affect antenna gain and must be considered;

USI: OEM will verify the radiated emission when modifying antenna length and shapes which base on the original design as benchmark.

If the above data is to be provided by a Gerber file for PC layout, this should be specified in the filing.

USI: Yes. Above data is from Gerber file.

2. Test procedures for design verification.

OEM should copy the original design of antenna length and shapes.

3. Production test procedures for ensuring compliance.

OEM should copy the original design of antenna length and shapes.