

EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB) specifications	EFF/RDL/R-019
	QMS. Std. Ref: 7.3	REVISION: 3

PCB No: EFF-1702 VER1.0

Version No: 1.0

PCB Description: RF REMOTE TESTING PCB
Group: TEMC

S.No	Comment	Record no.
1	Specifications	EFF/RDL/R-019
2	Schematic Diagram	EFF/RDL/R-020
3	Bill of Materials	EFF/RDL/R-021
4	Position Diagram	EFF/RDL/R-022
5	Design Record	EFF/RDL/R-023

SPECIFICATION:

- PCB:**
1. PCB Size : X -82mm, Y-85mm
 2. Material : Glass Epoxy-FR4
 3. Copper clad thickness : 35 microns
 4. Type : Double side
 5. PCB Thickness : 1.0mm
 6. Masking : GREEN

PREPARED BY	VERIFIED BY	APPROVED BY	DATE: 29-10-2015
Technicians- Layouts Md.Shabana	Manager-Layouts R.Parvathi	Vertical Head K.BalaKrishna	

EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB) specifications	EFF/RDL/R-019
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Purpose: This PCB is a RF REMOTE Testing PCB.

Specifications:

1. Provision is given for 2pin VT/M Phoniex Connector for taking I/P supply.
2. Provision is given for 2pin VT/M Molex connector for taking CC2592 I/P supply.
3. Provision is given for Reverse & Surge Protection.
4. Provision is given for two LD1117S33 3.3V SOT-223 Regulators for converting +5V to +3.3V
5. Provision is given for CC2545RGZR SYSTEM ON CHIP RF TRANSCEIVER.
6. Provision is given for CC2592 2.4GHZ RF FRONT END POWER AMPLIFIER.
7. Provision is given for 10pin BOX connector for Serial Wire Debugging.
8. Provision is given for 8pin VT/M Molex type connector for terminating KEY BOARD connections.
9. Provision is given for two 3pin VT/M Molex connector for UART Terminations.
10. Provision is given for RIGHT ANGLE SMA FEMALE CONNECTOR.
11. Provision is given for one Small Tact Switch for CC2545RGZR Reset.
12. Provision is given for 4PIN VT MALE 0533750410 MOLEX for ISP terminations.
13. Provision is given for 9PIN RT FEMALE D-TYPE for data retrieving.
14. Provision is given for TRS3232EIPW.

LED Indications:

- | | | |
|----------------|---|-----------------------------|
| SMD YELLOW LED | - | +3.3V-D POWER ON INDICATION |
| SMD GREEN LED | - | HEALTH INDICATION |

Currents Details:

S.NO	Line	Required current in (mA)	Given current in (mA)
1	+5V & GND	300	600
2	+3.3V	100	600

EFFTRONICS

EFF-1702 VER1.0 (RF REMOTETESTING PCB).SCH

EFF/RDL/R-020

QMS Std. Ref.:7.3

REVISION:3

PCB NO.: EFF-1702 VER1.0

VERSION:1.0

TYPE: Double Side

PCB DESCRIPTION: RF TESTING PCB

GROUP: GENERAL

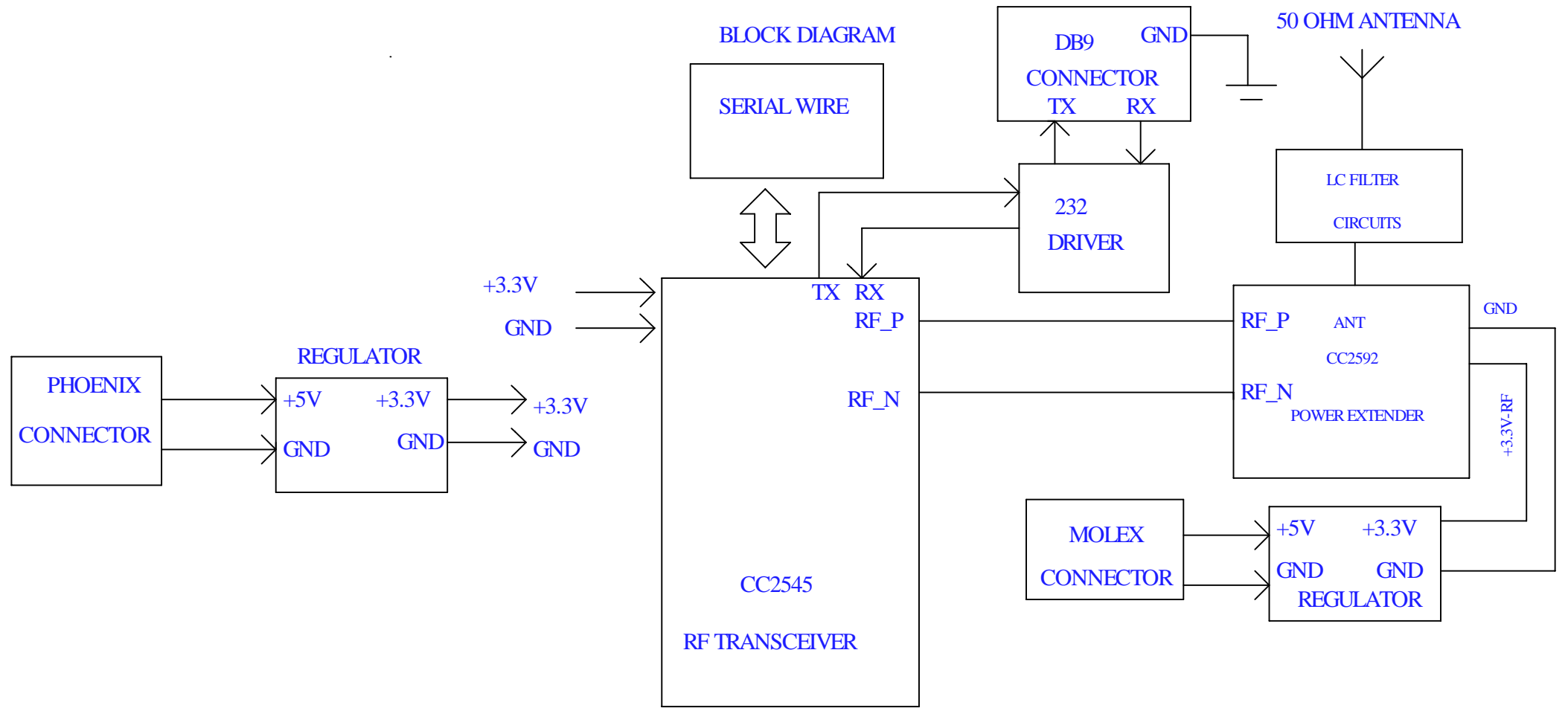
PCB Specifications:

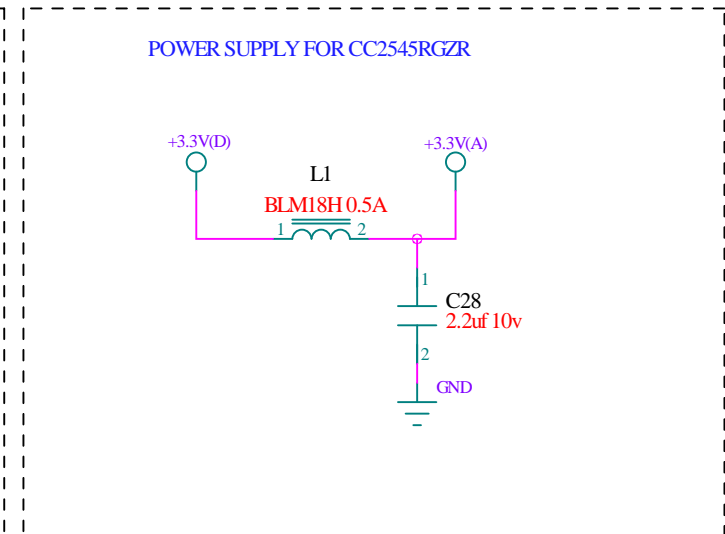
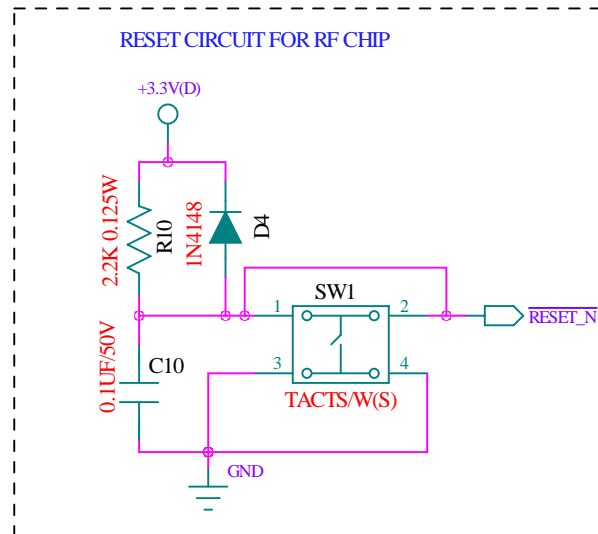
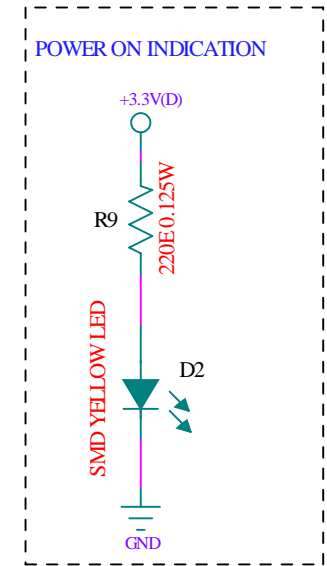
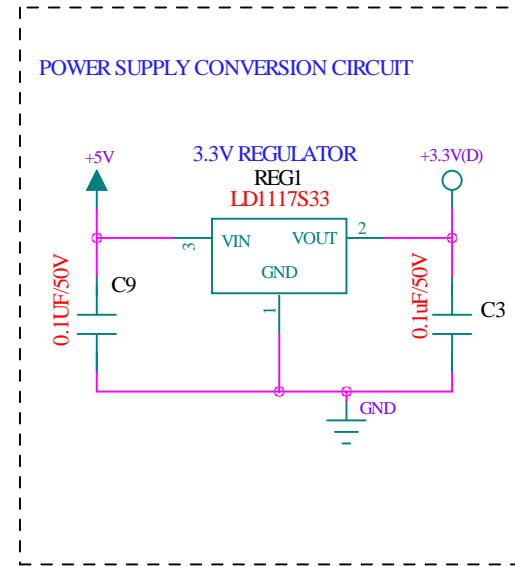
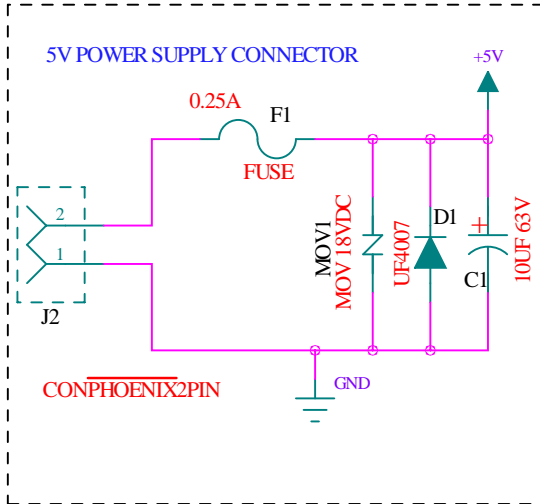
- 1.PCB Size - X-82mm & Y-85mm
- 2.Material - Glass Epoxy-FR4
- 3.Copper clad thickness - 35 Microns Base Copper
- 4.Type - Double Side
- 5.PCB Thickness - 1.0mm
- 6.Masking - Green Masking

Prepared by	Verified by	Approved By	Reviewed By	Date:
R&D K.Manikanta	Asst.Project Manager K.Karuna Kumari	Vertical Head K.Bala Krishna	DQA	17-10-2015

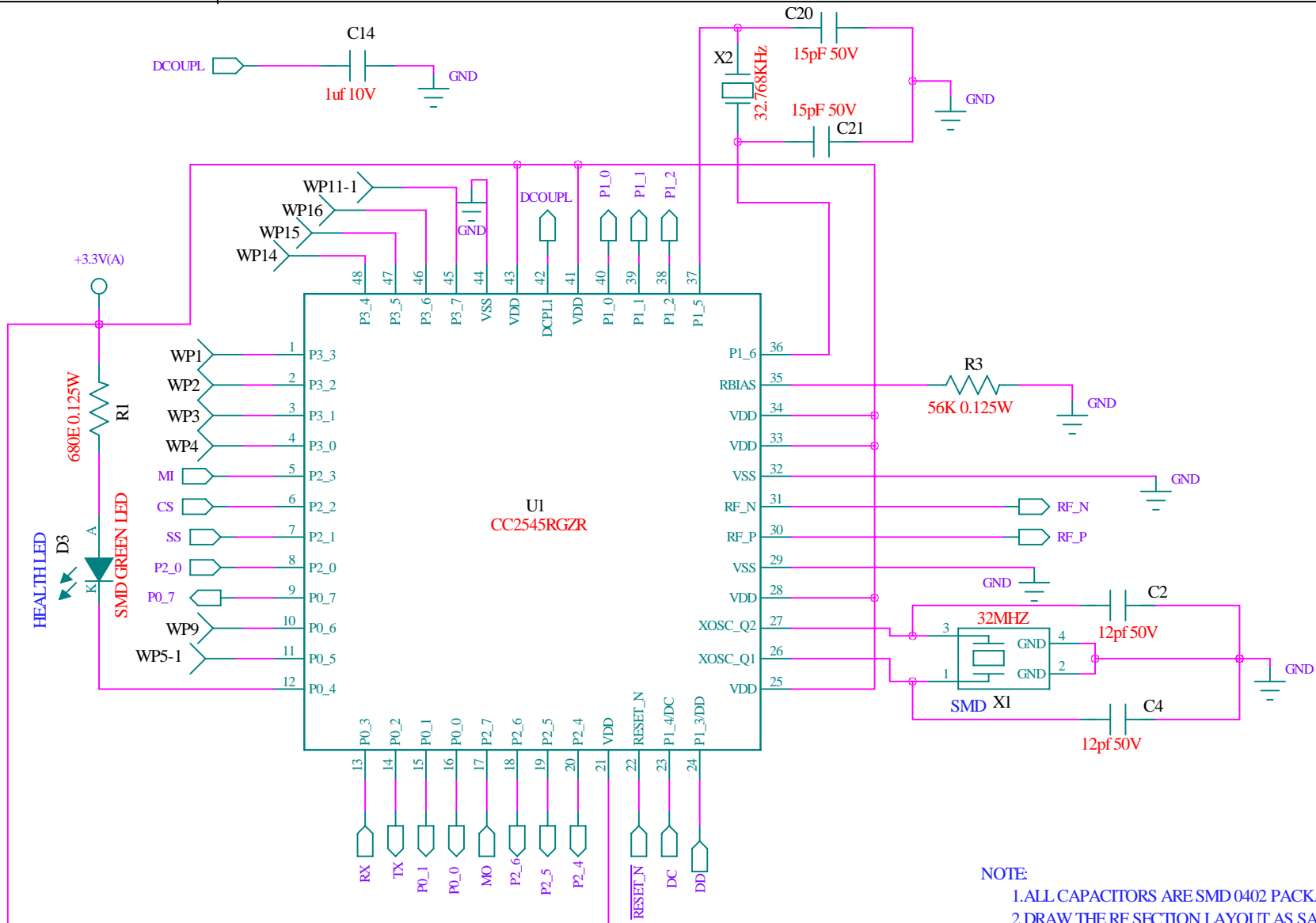
Sl.No	Description of change	Reason for change	Supercedes version

1ST SHEET - CAIRO
2ND SHEET - INDEX
3RD SHEET - BLOCKDIAGRAM
4TH SHEET - POWERSUPPLY
5TH SHEET - CC2545 RFCHIP
6TH SHEET - CC2545 RFCHIP2
7TH SHEET - CC2592RGVT Circuit
8TH SHEET - CONNECTORS
9TH SHEET - RS232 Transceiver



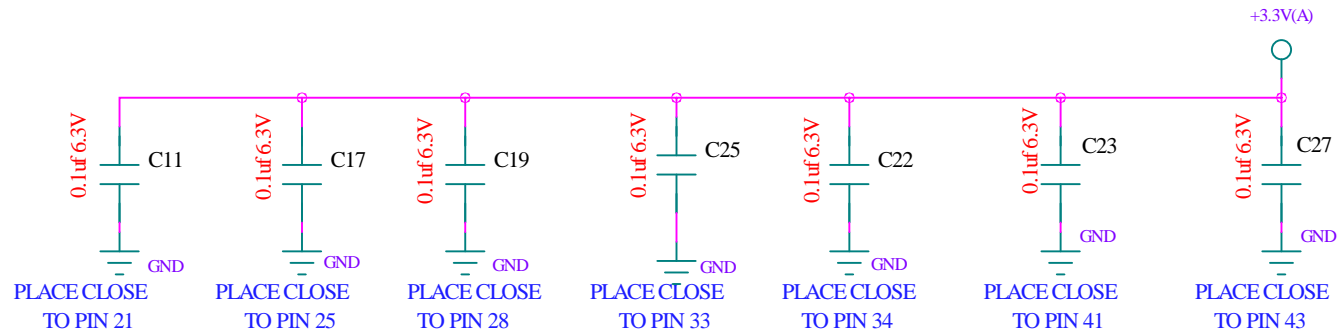


NOTE:
CAPACITORS C37 WAS SMD 0603 PACKAGE
ALL RESISTORS ARE SMD 0805 PACKAGE

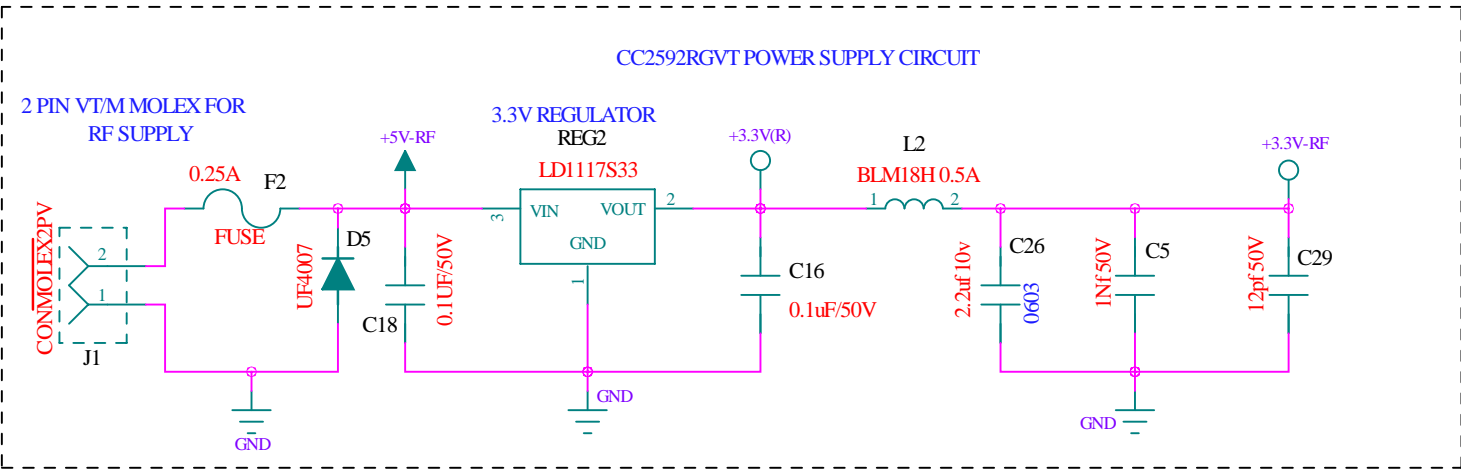
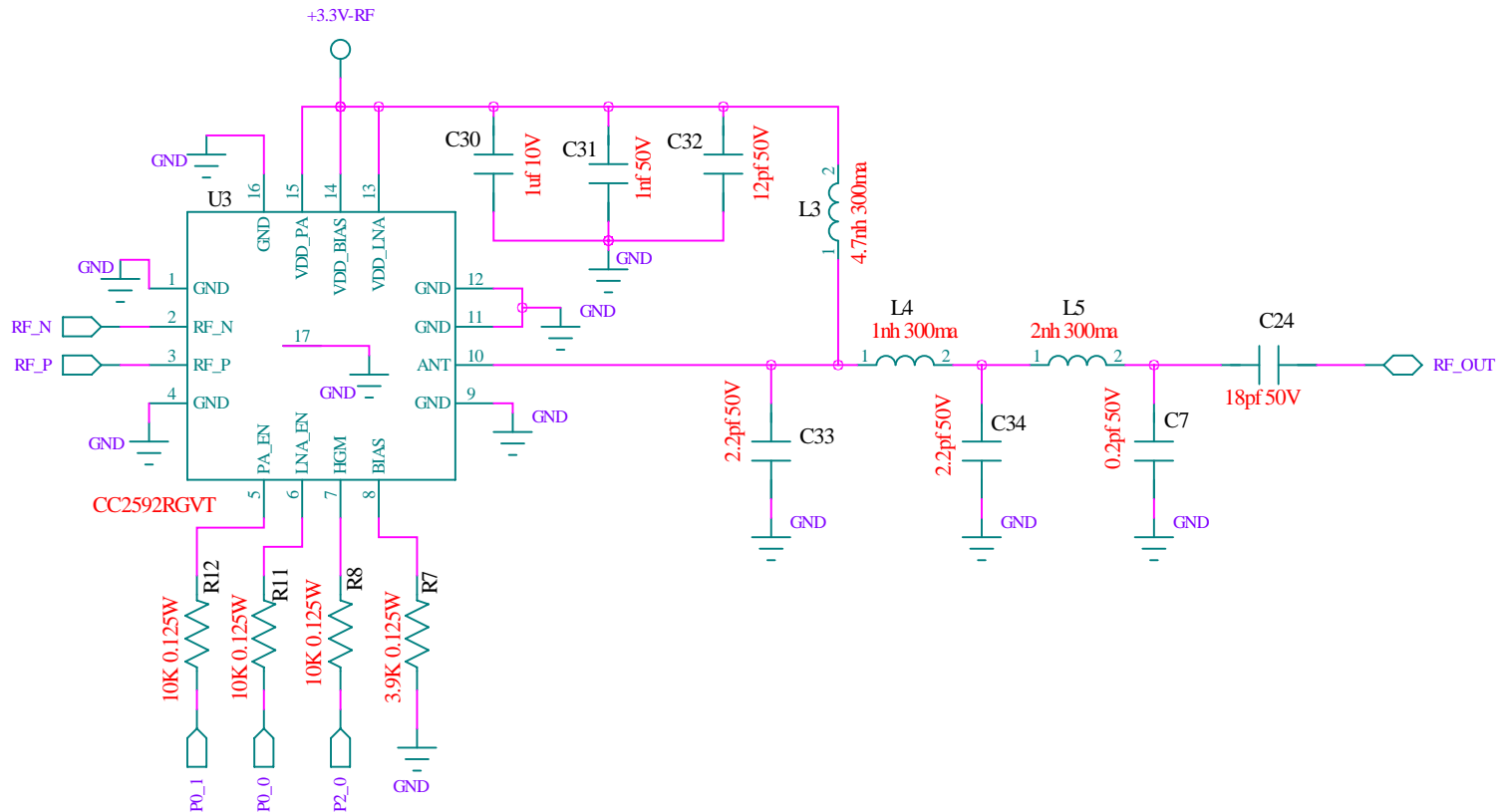


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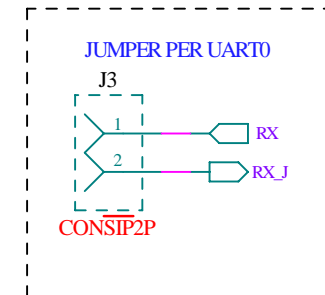
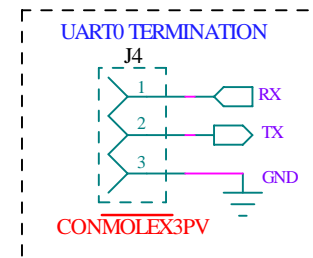
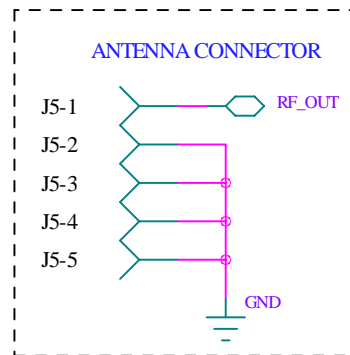
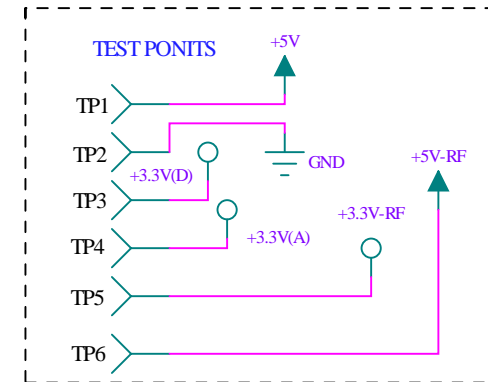
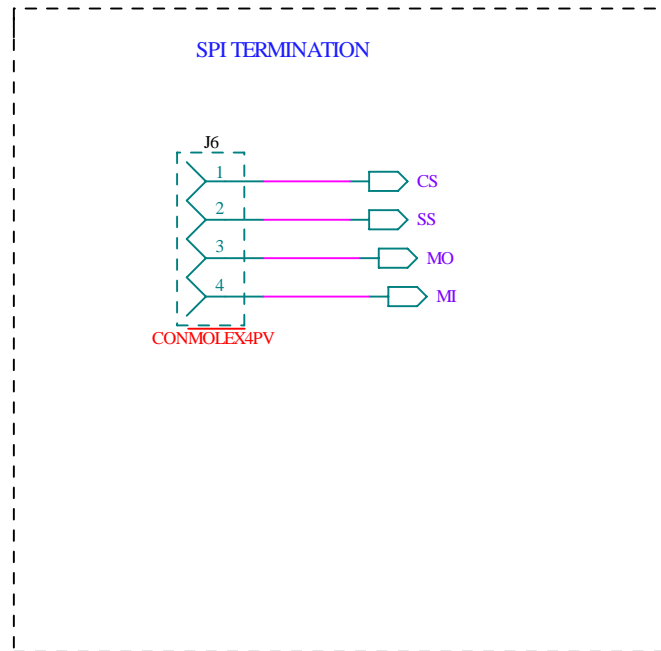
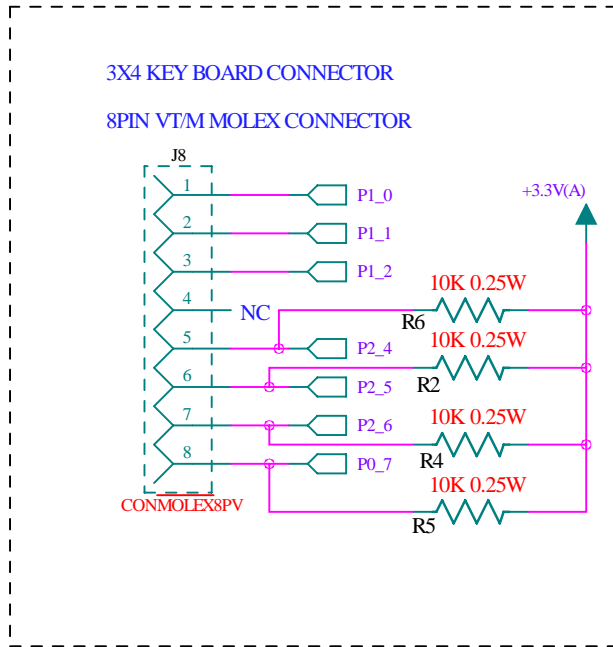
1. ALL CAPACITORS ARE SMD 0402 PACKAGE.
2. DRAW THE RF SECTION LAYOUT AS SAME AS ATTACHED REFERENCE SCHEMATIC GERBER FILES.
3. THE TRACK IMPEDENCE FROM RF_OUT TO THE ANTENNA CONNECTOR MATCH TO 50OHM.
4. DO NOT TERMINATE THE PTH POINTS IN THE RF TRACK

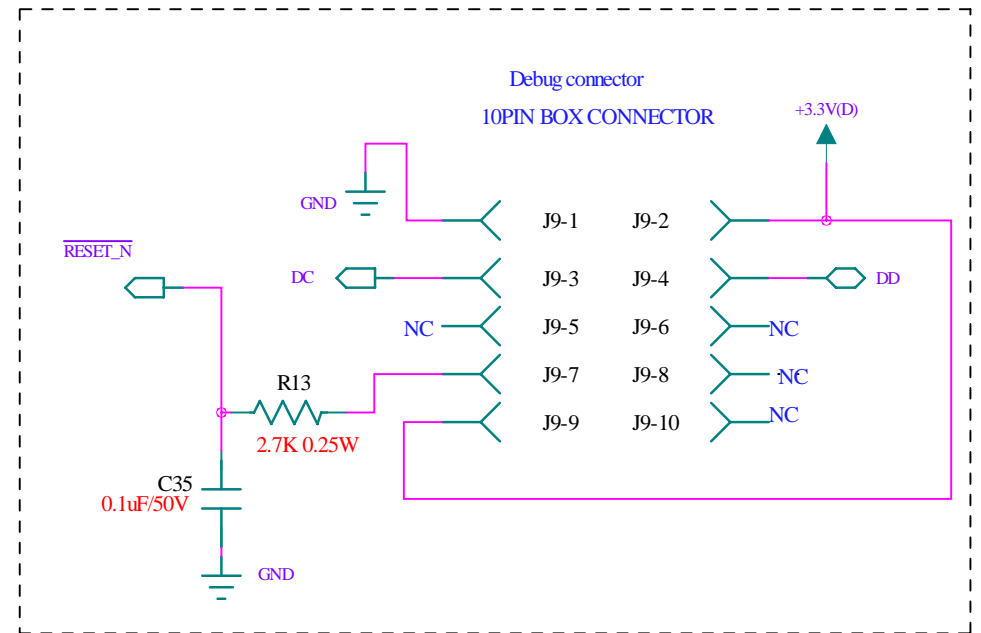
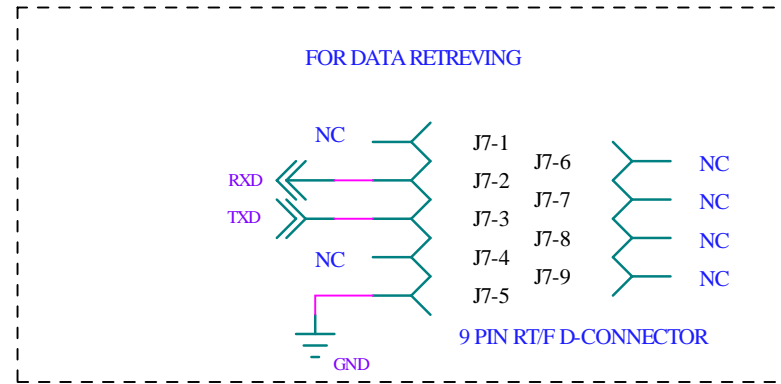
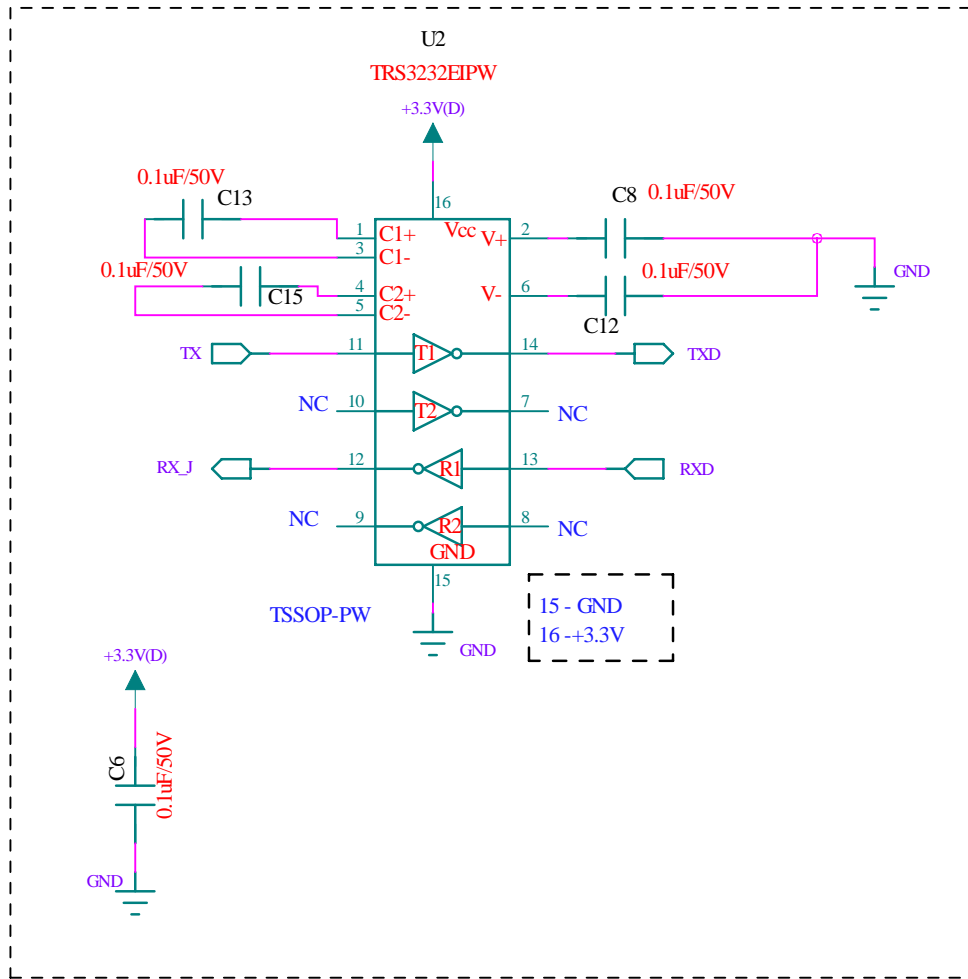
**NOTE:**

1. THE ABOVE MENTIONED PIN NO.S ARE CC2545 RF CHIP PINS
2. ALL THE CAPACITORS ARE SMD 0402 PACKAGE
3. PLEASE REFER THE PCB REQUIREMENT DOCUMENT AND FOLLOW THOSE GUIDELINES



NOTE:
 1. ALL CAPACITORS ARE SMD 0402 PACKAGE
 2. ALL INDUCTORS ARE SMD 0402 PACKAGE
 3. ALL RESISTORS ARE SMD 0805 PACKAGE





EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB) Bill of material	EFF/RDL/R-021
	QMS. Std. Ref: 7.3	REVISION: 3

PCB No.: EFF-1702 VER1.0

Version: 1.0

PCB Description: RF REMOTE TESTING PCB

Group: GENERAL

S.NO	ITEM CODE	DESCRIPTION	REF	QTY	PACKAGE	MAKE
1	ECCAPEL00078	10UF 63V 105DEGREE ELECTROLYT	C1	1	5X11MM - 2MM	INCAP
2	ECCAPCE00135	0.1UF 6.3V 0402 SMD CERAMIC CAPACITOR	C11 C17 C19 C22 C23 C25 C27	7	402	MURATA
3	ECCAPCE00130	1uF 10V 0402 SMD CERAMIC CAPACITOR	C14 C30	2	402	MURATA
4	ECCAPCE00132	12PF 50V 0402 SMD CERAMIC CAPACITOR	C2 C4 C29 C32	4	402	MURATA
5	ECCAPCE00117	15PF 50V SMD CERAMIC CAPACITOR	C20 C21	2	805	KEMET
6	ECCAPCE00139	18pf 50V 0402 SMD CERAMIC CAPACITOR	C24	1	402	MURATA
7	ECCAPCE00138	2.2uf 10V 0603 SMD CERAMIC CAPACITOR	C26 C28	2	603	MURATA
8	ECCAPCE00018	0.1uF 50V SMD CERAMIC	C3 C6 C8-C10 C12-C13 C15-C16 C18	10	805	AVX
9	ECCAPCE00133	2.2PF 50V 0402 SMD CERAMIC CAPACITOR	C33-C34	2	402	MURATA
10	ECCAPCE00119	1NF 50V SMD CERAMIC CAPACITOR	C35	1	805	AVX
11	ECCAPCE00134	0.2PF 50V 0402 SMD CERAMIC CAPACITOR	C7	1	402	MURATA
12	ECCAPCE00131	1nf 50V 0402 SMD CERAMIC CAPACITOR	C5 C31	2	402	MURATA
13	ECDIOPN00034	UF 4007 CDIL DIODE	D1 D5	2	DO-41P	CDIL
14	ELEDISM00004	SMD YELLOW LED	D2	1	1206	EVER LIGHT
15	ELEDISM00002	SMD GREEN LED	D3	1	1206	EVER LIGHT
16	ECDIOPN00003	4148 GLASS SMD DIODE	D4	1	SOD-80C	NXP
17	ECFUSGLAL0001	1A AXIAL LEAD SMALL SLOW BLOW FUSE	F1 F2	2	5X20MM	RELIANCEELECTRONICS
18	HACONMOL0001	XH-2A 2PIN VT/M 2.5MM PITCH MOLEX TYPE CONNECTOR	J1	1	DIP	BOYU
19	HACONPH00018	2PIN MSTBVA VT/MALE PHOENIX	J2	1	DIP	PHOENIX
20	HACONBE00005	40PIN 11MM VT MALE BERGESTIC	J3 (2 PIN)	0.05	DIP	ESSEN
21	HACONMOL0010	XH-3A 3PIN VT/M 2.5MM PITCH MOLEX TYPE CONNECTOR	J4	1	DIP	BOYU
22	HACONGE00066	REVERSE POLARITY RT FEMALE	J5	1		AMP
23	HACONMOL0002	XH-4A 4PIN VT/M 2.5MM PITCH MOLEX TYPE CONNECTOR	J6	1	DIP	BOYU
24	HACONDT00003	9PIN RT FEMALE D-TYPE	J7	1	DIP	FCI
25	HACONMOL0012	XH-8A 8PIN VT/M 2.5MM PITCH MOLEX TYPE CONNECTOR	J8	1	DIP	BOYU
26	HACONBO00001	10PIN VT MALE BOX-TYPE	J9	1	DIP	FCI
27	ECINDSM00019	BLM18H 0.5A 1500E 0603 FERRITE BEAD	L1 L2	2	603	MURATA
28	ECINDSM00020	4.70nH 300mA 0.18E 0402 SMD INDUCTOR	L3	1	402	MURATA
29	ECINDSM00018	1nH 300mA 0.07E SMD INDUCTOR	L4	1	402	MURATA
30	ECINDSM00017	2nH 300mA 0.1E 0402 SMD INDUCTOR	L5	1	402	MURATA
31	ECVARAX00026	MOV 14VAC/18VDC 1000A , 4J 15.5MM DIA RADIAL	MOV1	1	7.5MMX15MM(PX D)	EPCOS
32	ECRESSD00187	680E 0.125W 1% SMD RESISTOR	R1	1	805	WATTS
33	ECRESSD00036	2.7K 0.25W 1% SMD RESISTOR	R13	1	1206	WATTS
34	ECRESSD00152	2.2K0.125W1% 0805 SMD RESISTOR	R10	1	805	WATTS
35	ECRESSD00017	10K 0.25W 1% SMD RESISTOR	R2 R4-R6	4	1206	WATTS
36	ECRESSD00153	56K0.125W 1% 0805 SMD RESISTOR	R3	1	805	WATTS
37	GEN000451	3.9K 0.125W 1% SMD 0805 FIXED	R7	1	805	WATTS
38	ECRESSD00015	10K 0.125W 1% SMD RESISTOR	R8 R11 R12	3	805	WATTS
39	ECRESSD00160	220E 0.125W 1% SMD RESISTOR	R9	1	805	WATTS
40	ECREGPV00041	LD1117S33 3.3V SOT-223	REG1 REG2	2	SOT-223	HTC KOREA
41	ELSWITS00002	SMALL TACT SWITCH	SW1	1	DIP	PRAN ELECTRONIC
42	ECICSDI00709	CC2545 8051 SYSTEM ON CHIP RF TRANSCEIVER	U1	1	VQFN-48	TEXAS

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43	ECICSAN00083	TRS3232EIPW RS-232 LINE DRIVER	U2	1	TSSOP	TEXAS
44	ECICSDI00705	CC2592 2.4GHZ RF FRONT END POWER AMPLIFIER	U3	1	VQFN-16	TI
45	ECCRYOS00045	32MHZ 10PF 10PPM MINI SMD CRYSTAL	X1	1	2.0 × 1.6 × 0.5MM	SEIKO EPSON
46	ECCRYQU00011	32.768KHz QUARTZ CRYSTAL	X2	1	DIP	ANDHRA ELECTRONICS
47	ECPCBDS01889	1702 VER1.0 PCB		1		

Verified by	Verified by	Approved by	Date
Manager-Layouts Parvathi R	R&D K.Manikanta	Asst. Project Manager K.Karuna Kumari	30-10-2015

EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB).POSITION DIAGRAM	EFF/RDL/R-022
	QMS Std.Ref.:7.3	Revision:3

PCB No.:EFF-1702 VER1.0

Version:1.0

Type:Double Side

PCB Description: RF REMOTE TESTING PCB

Group:General

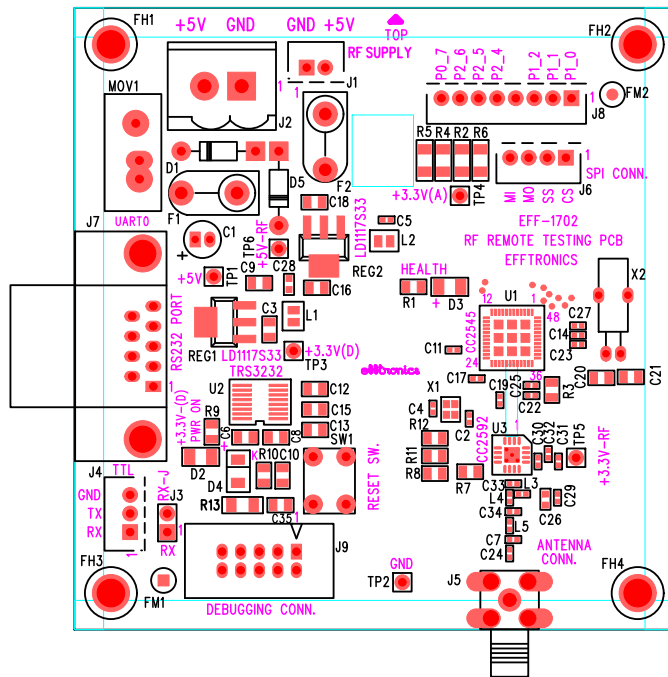
PCB Specifications:

- 1.PCB Size -X= 82MM, Y= 100MM
- 2.Material -GLASS EPOXY FR-4
- 3.Copper clad thickness -35microns
- 4.Type -Double Side
- 5.PCB Thickness -1.0MM
- 6.PCB Masking -Green

Verified By	Verified By	Verified By	Approved By	Reviewed By	Date
Manager-Layouts Parvathi R	Asst.Project Manager Karunai Kumari K	Manager-Mechanical Ubedulla SK	Vertical Head	DQA	31-10-2015

EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB) POSITION DIAGRAM	EFF/RDL/R-022
	QMS. Std.Ref.:7.3	Revision:3

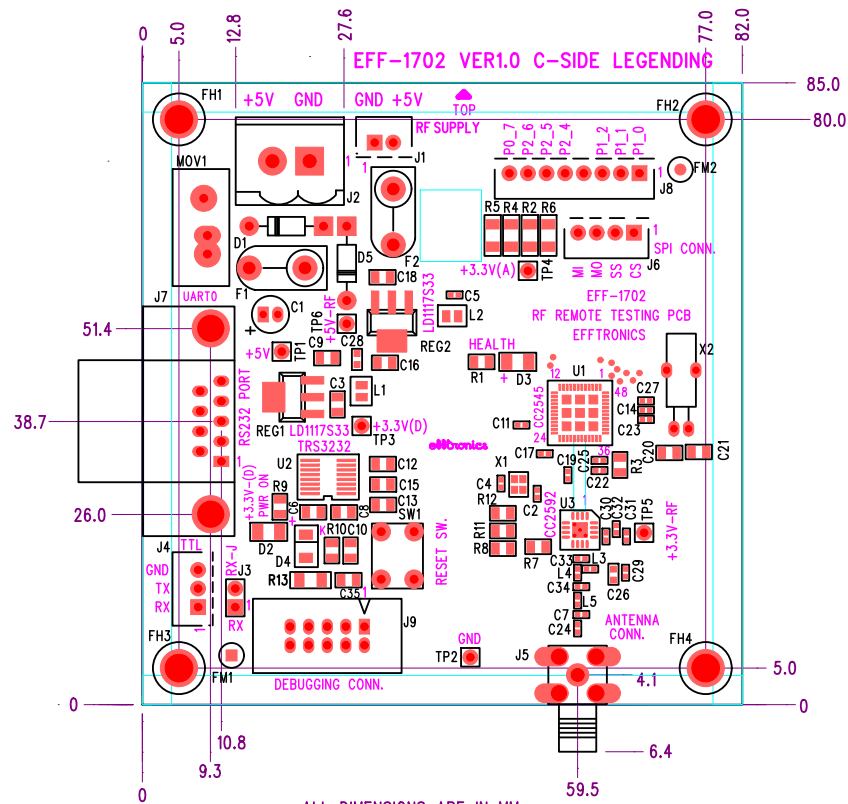
EFF-1702 VER1.0 C-SIDE LEGENDING



PCB DETAILS EFF-1702 VER1.0:

1. Double sided PCB.
 2. Type of material for PCB is Glass Epoxy - FR4. DE104ML/FR4 or Equivalent Substrate (Resin contents around 45%, which gives $E_r=4.42@2.4\text{GHz}$, $\text{TanD}=0.016$)
 3. PCB Thickness is 1.0mm
 4. Copper Clad thickness must be 35 Microns Base copper.
 5. Surface finish -HASL
 6. C-Side & S-Side Solder Coating, Green Masking are needed.
 7. C-Side White Silk Screen is needed.
 8. PCB sizes must be X=82mm Y=85mm
 9. Films are in 1:1 ratio.
 10. Drill according to Drilling details
 11. Electrical Test required.
 12. Via filling - Not required
 13. Minium Design trace width - 9mil
 14. Minium Design trace spacing - 9mil
- NOTE: Please send back all the films along with PCB's.

EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB) POSITION DIAGRAM	EFF/RDL/R-022
	QMS. Std.Ref.:7.3	Revision:3



Maximum Height of the component is Axial fuse(F1 & F2) 23mm

PCB DETAILS EFF-1702 VER1.0:

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	QMS Std.Ref.:7.3	Revision:3

PCB No.:EFF-1702 VER1.0

Version:1.0

Type:Double Side

PCB Description: RF REMOTE TESTING PCB

Group:GENERAL

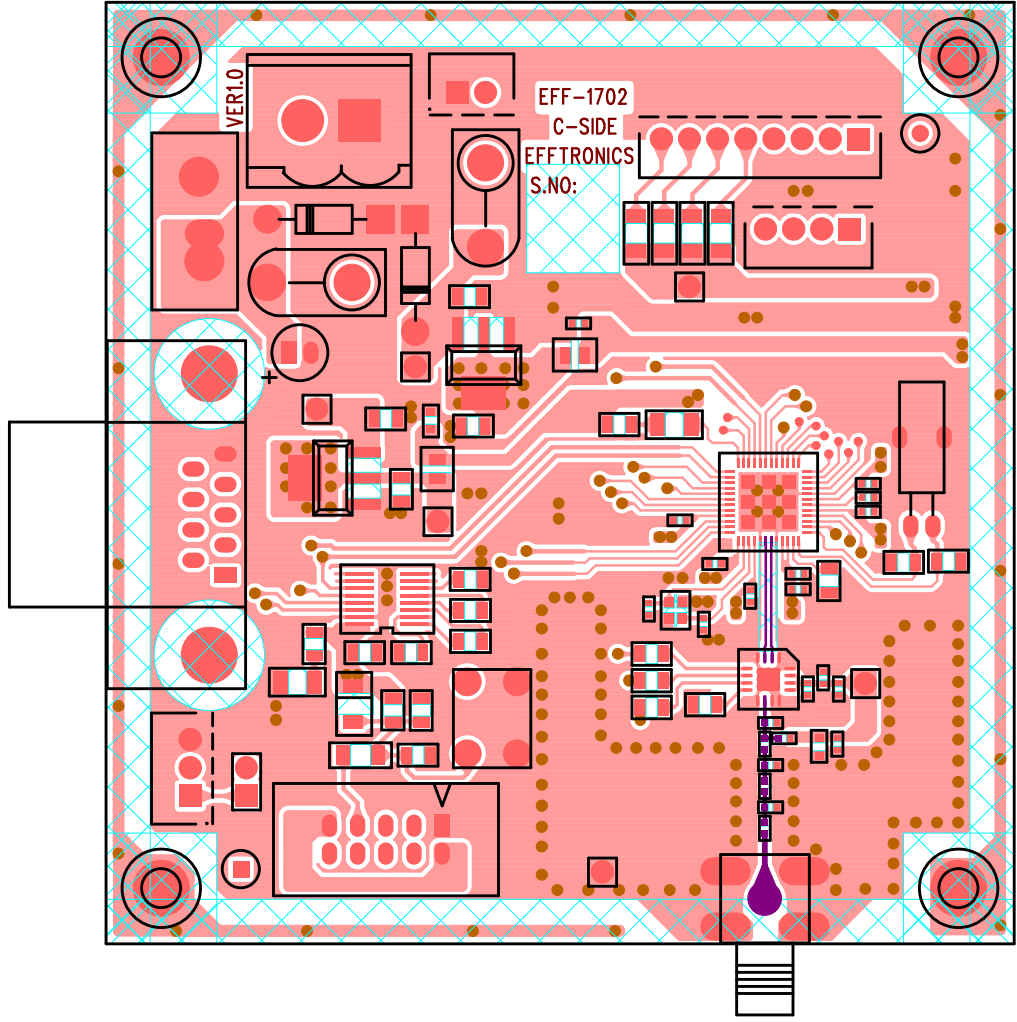
PCB Specifications:

- | | |
|-------------------------|--------------------|
| 1.PCB Size | -X= 82MM, Y= 100MM |
| 2.Material | -GLASS EPOXY FR-4 |
| 3.Copper clad thickness | -35microns |
| 4.Type | -Double Side |
| 5.PCB Thickness | -1.0MM |
| 6.PCB Masking | -Green |

Prepared By	Verified By(Layouts)	DATE
Md.Shabana	Parvathi.R	31-10-2015

EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB) DESIGN	EFF/RDL/R-023
	QMS Std.Ref.:7.3	Revision: 3

EFF-1702 VER1.0 C-SIDE TRACKING



EFFTRONICS	EFF-1702 VER1.0 (RF REMOTE TESTING PCB) DESIGN	EFF/RDL/R-023
	QMS Std.Ref.:7.3	Revision: 3

EFF-1702 VER1.0 S-SIDE TRACKING

