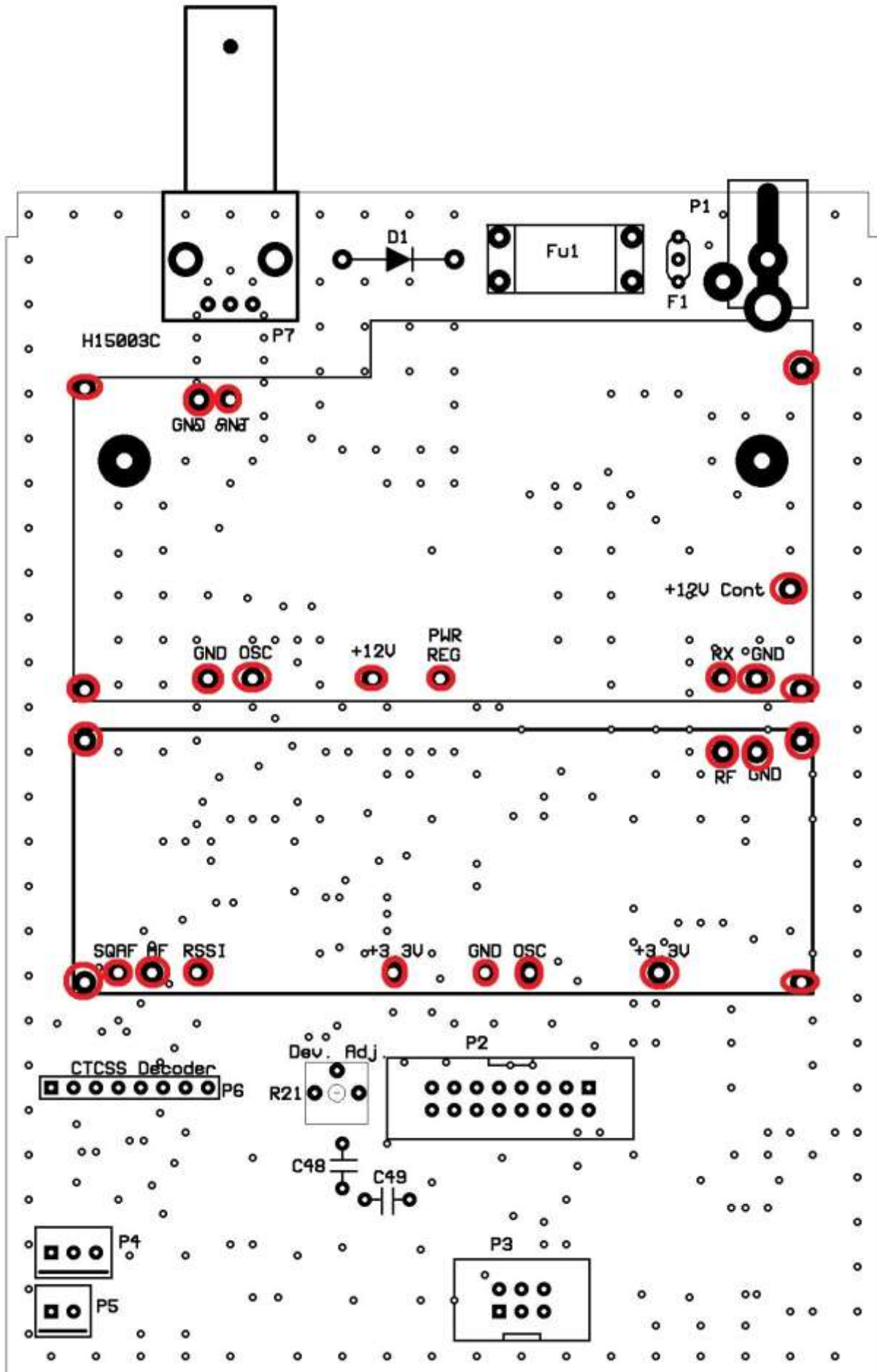


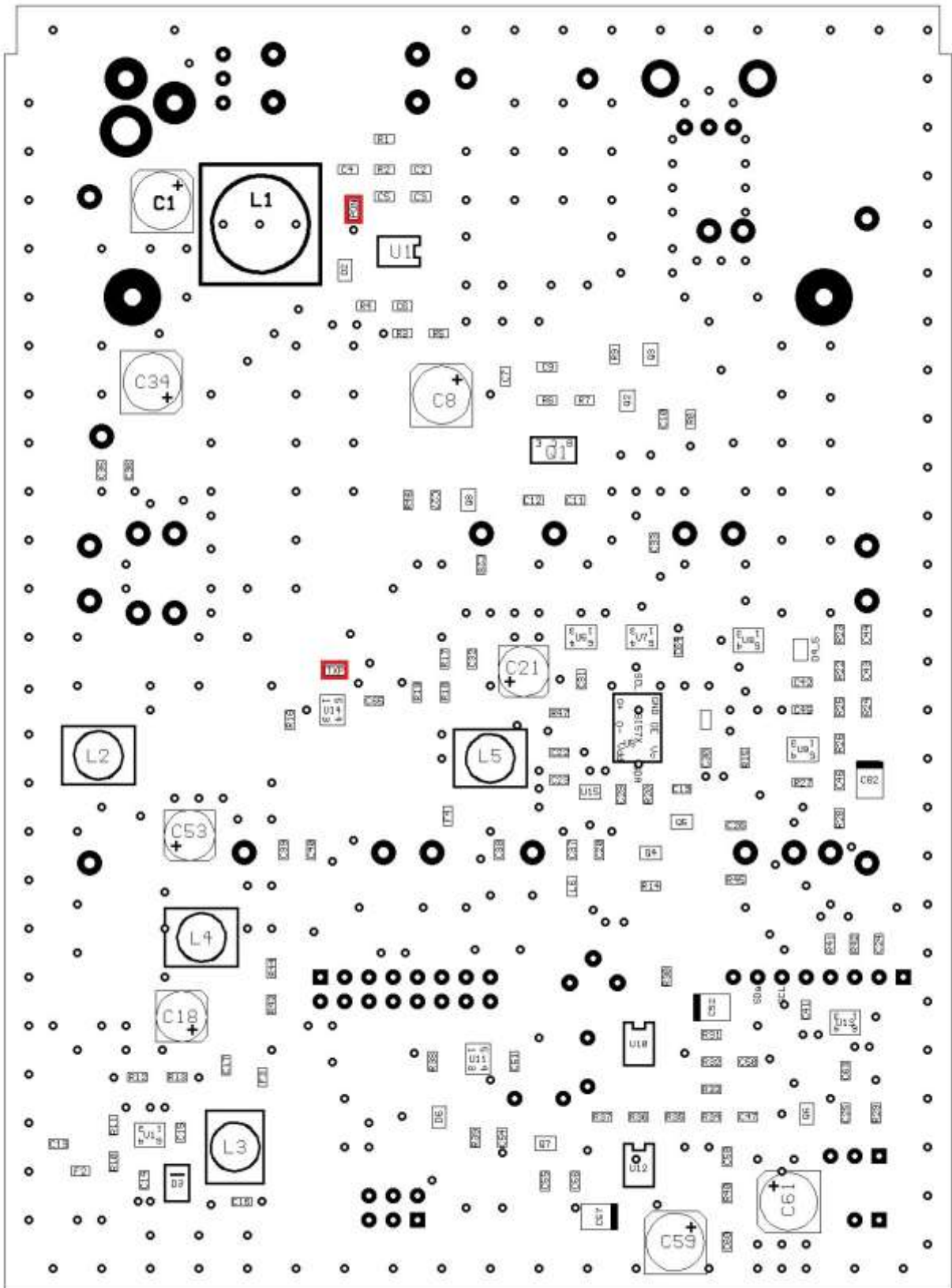
OZ4HZ FM Transceiver for 29 MHz Board layout and part lists

Mainboard Layout Top



Red circle marking Connector AP102

Mainboard Layout Bottom



0 Ohm jumper POW and TXP marked with red are used for initial TEST only

Partlist Mainboard pcb H15003C OZ4HZ 29MHz RXTX

Qty.

4	C1,C18,C21,C53	100u /16V SMD ELLYT
25	C2,C5,C7,C11,C13,C15,C17, C20,C23,C24,C26,C28,C35, C37,C39,C41,C42,C46,C51, C54,C58,C60,C63,C64,C65	100n X7R 50V 10% Size 0805
13	C3,C10,C12,C19,C22,C25, C27,C31,C32,C33,C36,C38, C40	10n X7R 50V 10% Size 0805
8	C4,C9,C30,C43,C44,C45, C50,C55	1u X7R 50V 10% Size 0805
1	C6	10u 25V 10% X5R Size 0805
4	C8,C34,C59,C61	220u /16V SMD ELLYT
2	C14,C16	22u X5R 25V 20% Size 0805
2	C29,C47	4.7u X5R 25V 10% Size 0805
1	C48	4.7n 63V 5% EPCOS B32529C0472J
1	C49	1.5n 63V 5% EPCOS B32529C0152J
2	C52,C62	22u /16V TANTAL SMD Type B
1	C56	1n NP0 or X7R 50V 10% Size 0805
1	C57	10u /16V Tantal SMD Type B
1	D1	BZV85C16
3	D2,D6,D4_5	BAV99
1	D3	B230A
1	F1	10n T-FILTER TDK CZ5101-103TA
3	F2,F3,F4	22n T-FILTER MURATA NFM21CC223R1H3D
1	Fu1	Fuse 3AT + Fuseholder
1	L1	47u Coiltronics DR125-470-R
3	L2,L4,L5	100u Coiltronics DR73-101-R
1	L3	10u Coiltronics DR73-100-R
1	L6	100u 20% TDC MLZ2012N101LT
1	M1	OZ4HZ 29MHz RX
1	M2	OZ4HZ 29MHz TX
26		Connector ASSMANN AP102BZ-T for RX and TX modules
1	P1	DC Connector

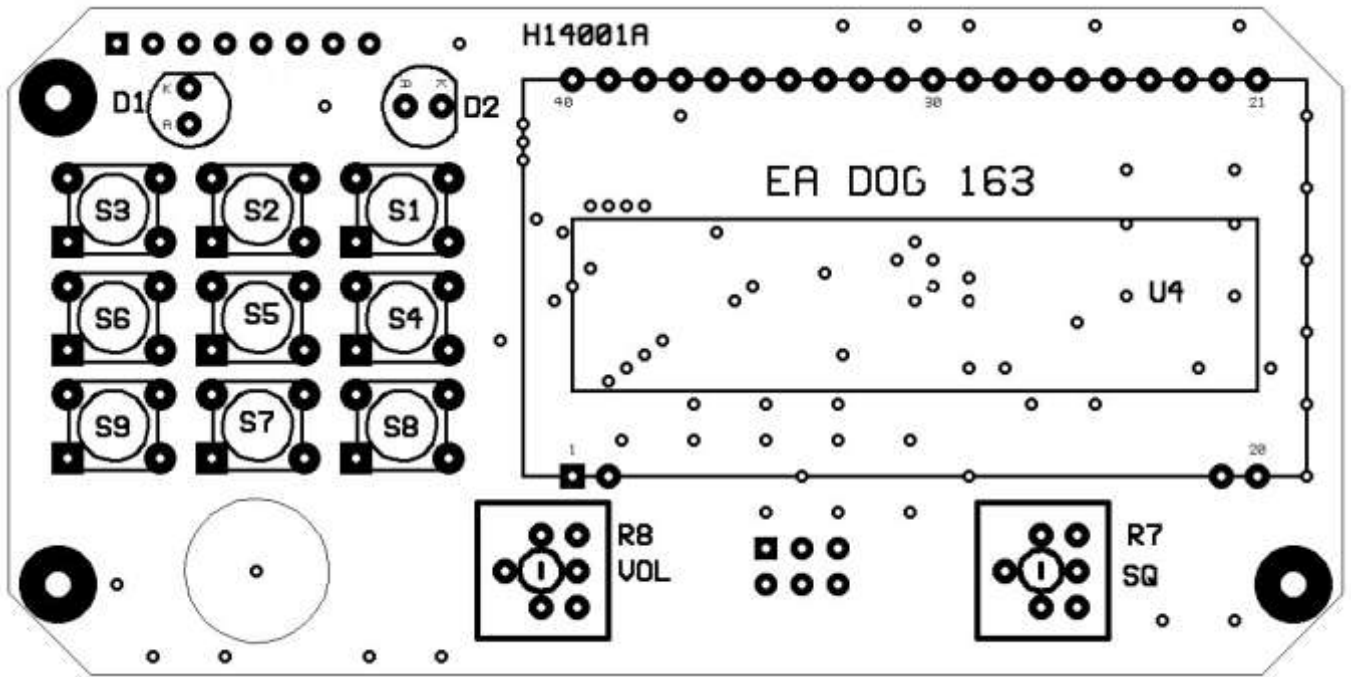
Qty.

1	P2	IDC 16 Male Harting 09185166324 + Flat cable 90 mm with 2 IDC 16 Female Harting 09185167803
1	P3	IDC 6 Male Harting 09185066324
1	P4	3 pole Pin header with lock YY3N03 + housing YY2C03 + crimp-contacts YY2CT
1	P5	2 pole Pin header with lock YY3N02 + housing YY2C02 + crimp-contacts YY2CT
1	P6	8 pin Female Socket Harwin D01-9973242 (32 pin)
1	P7	BNC for PCB
1	Q1	BCX53
4	Q2,Q5,Q6,Q8	BC847, BC848 or BC849
2	Q3,Q7	BSS138
1	Q4	IRLML6401
9	R1,R7,R11,R13,R15,R25,R27,R29,R44	10K Resistor type RC12H Size 0805
8	R2,R4,R6,R14,R16,R24,R41,R42	100K Resistor type RC12H Size 0805
1	R3	270K Resistor type RC12H Size 0805
4	R5,R9,R26,R39	1M Resistor type RC12H Size 0805
6	R8,R22,R23,R32,R33,R46	47K Resistor type RC12H Size 0805
1	R10	56K Resistor type RC12H Size 0805
1	R12	33K Resistor type RC12H Size 0805
1	R17	22 Resistor type RC12H Size 0805
1	R18	150 Resistor type RC12H Size 0805
1	R19	68 Resistor type RC12H Size 0805
3	R20,R35,R38	22K Resistor type RC12H Size 0805
1	R21	10K Potmeter BOURNS 3362P
2	R28,R30	100 Resistor type RC12H Size 0805
1	R31	1K Resistor type RC12H Size 0805
1	R34	2.2K Resistor type RC12H Size 0805
1	R36	13K Resistor type RC12H Size 0805
1	R37	20K Resistor type RC12H Size 0805
1	R40	10 Resistor type RC12H Size 0805
1	R43	82K Resistor type RC12H Size 0805
1	R45	38.6K Resistor type RC12H Size 0805

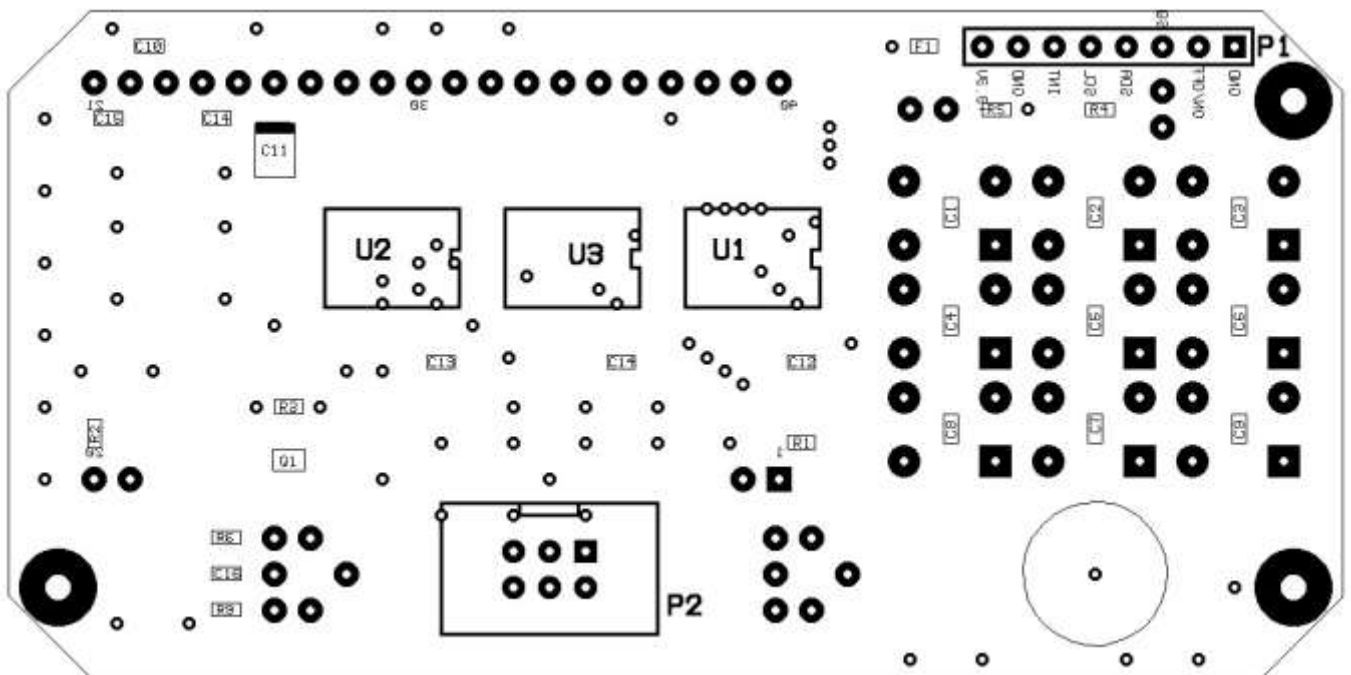
Qty.

1	R47	Not used
1	U1	IRF7319PbF
1	U2	ADP2300AUJZ
1	U5	SI571
1	U6	AS169-73
2	U7,U8	74LVC1G14
1	U9	LMV331IDBVR
1	U10	LMV358M SOIC 8L
1	U11	SN74LVC1G66DBVR
1	U12	LM386M-1
1	U13	74LVC1G97GV
1	U14	74LVC1G34GV
1	U15	ISL21010-15

Front pcb Layout Top



Front pcb Layout Bottom

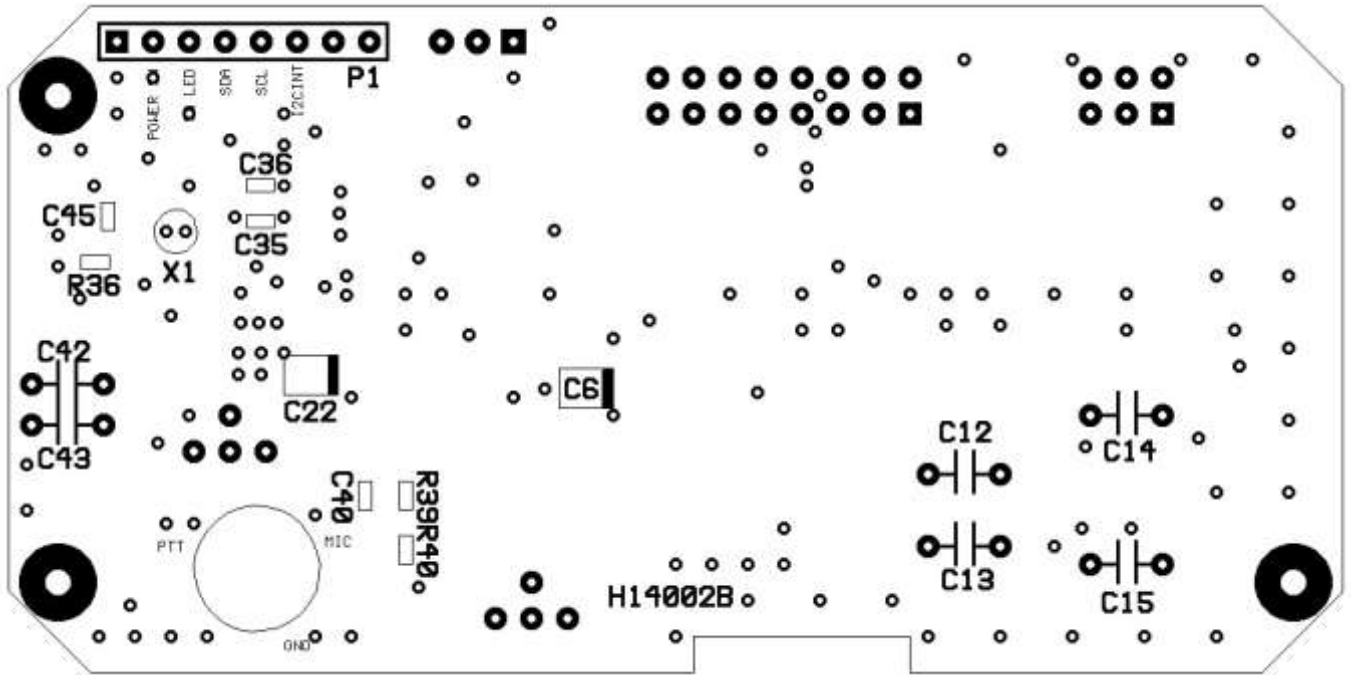


Partlist front pcb H14001A OZ4HZ RXTX

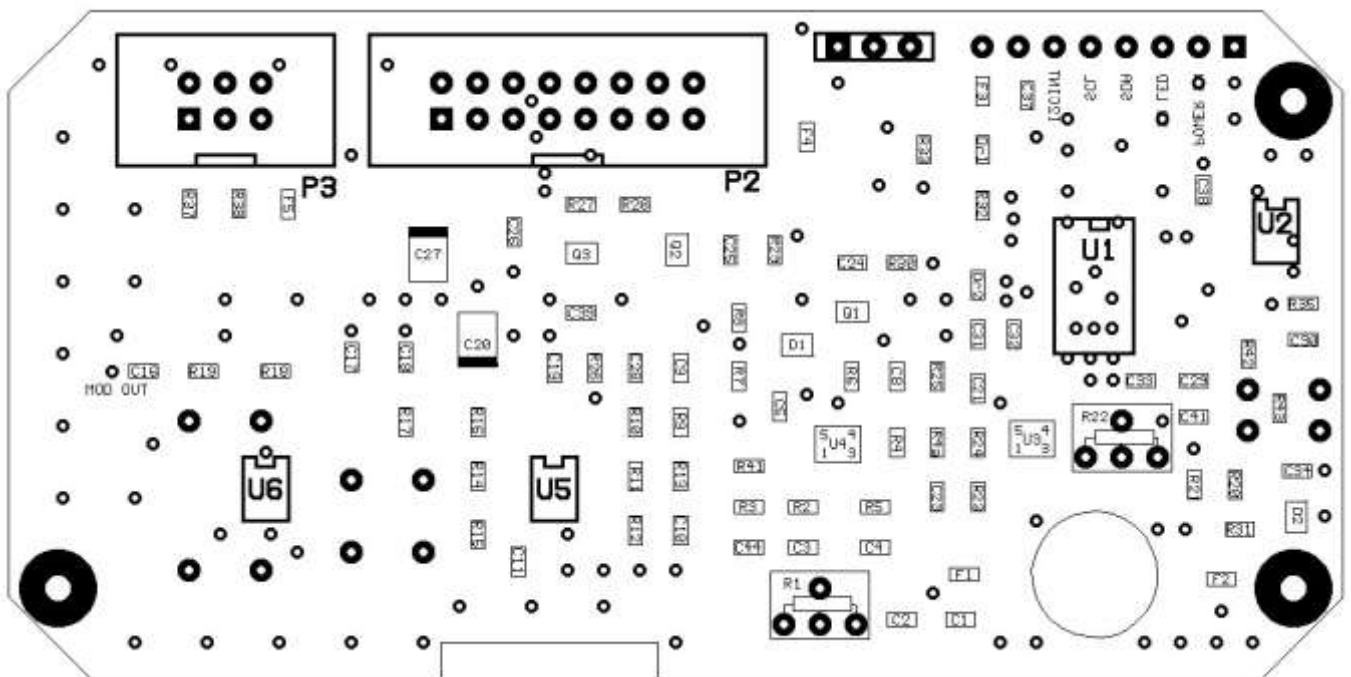
Qty.

14	C1,C2,C3,C4,C5,C6,C7,C8, C9,C10,C12,C13,C14,C16	100n X7R 50V 10% Size 0805
1	C11	22u /16V SMD TANTAL type B
2	C14,C15	1u X7R 50V 10% Size 0805
1	D1	LED Yellow 3mm
1	D2	LED Red 3mm
1	F1	22n FILTER Murata NFM21CC223R1H3D
1	P1	8 pin Contact strip Harwin D01-9923246 (32 pin)
1	P2	IDC 6 for pcb Harting 09181069622 + Flat cable 60 mm with IDC 6 Male connector Harting 09185067803
1	Q1	BSS138
2	R1,R2	39 Resistor type RC12H Size 0805
1	R3	1M Resistor type RC12H Size 0805
2	R4,R5	47 Resistor type RC12H Size 0805
1	R6	30K Resistor type RC12H Size 0805
1	R9	4.7K Resistor type RC12H Size 0805
1	R7,R8	10K Potmeter BOURNS 3310P-001-103L
9	S1,S2,S3,S4,S5,S6,S7,S8, S9	TACT Switch Diptronics DTS-644R-V
4		Button KTSC-62K black for DTS-644R-V
2		Button KTSC-62B blue for DTS-644R-V
1		Button KTSC-62R red for DTS-644R-V
1		Button KTSC-62Y yellow for DTS-644R-V
3	U1,U2,U3	PCF8574AT
1	U4	EA DOGM163E-A + Backlight EA LED55x31-G

CPU pcb Layout Top



CPU pcb Layout Bottom



Partlist CPU pcb H14002B OZ4HZ RXTX

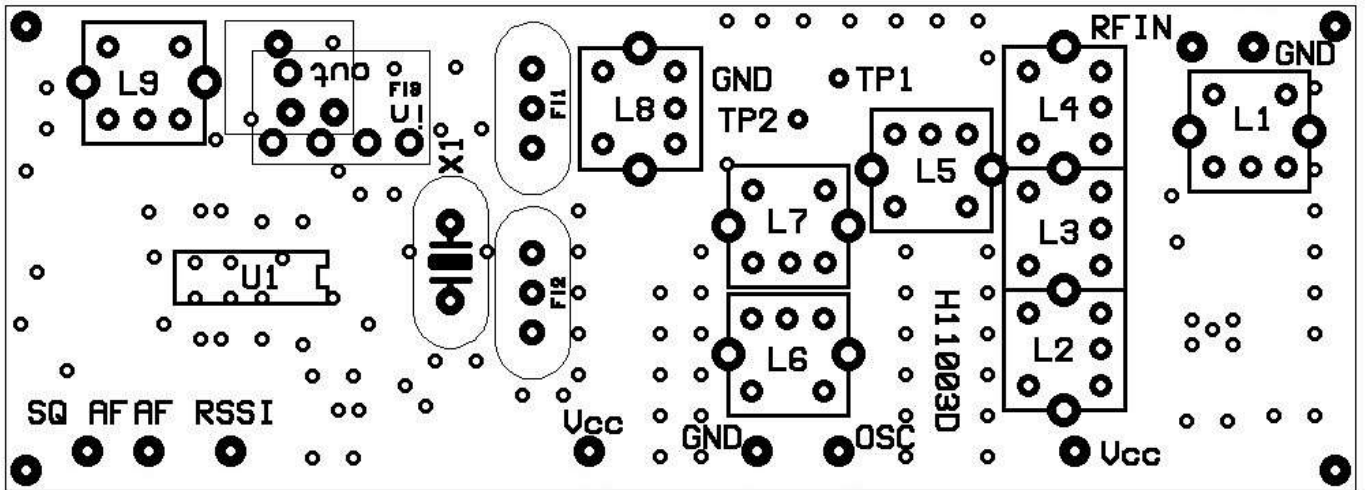
Qty.

1	C1	1n NP0 or X7R 50V 10% Size 0805
10	C2,C3,C8,C9,C10,C16,C23, C28,C44,C45	1u X7R 50V 10% Size 0805
15	C4,C5,C17,C18,C19,C21, C29,C30,C32,C33,C35,C37, C38,C39,C41	100n X7R 50V 10% Size 0805
3	C6,C20,C22	10u /10V Tantal SMD type B
1	C11	4.7u X5R 25V 10% Size 0805
2	C12,C14	10n 63V 5% EPCOS B32529C103J
2	C13,C15	1n 63V 5% EPCOS B32529C102J
4	C24,C25,C26,C34	10n X7R 50V 10% Size 0805
1	C27	22u /10V Tantal SMD type B
3	C31,C36,C40	10u X5R 25V 10% Size 0805
2	C42,C43	22n 63V 5% EPCOS B32529C223J
1	D1	BAW56
1	D2	BXZ84C4V3
2	Dr1,Dr2	47u 20% TDK MLZ2012M470WT
1	F1	1n SMD FILTER Murata NFM21CC102R1H3D
4	F2,F3,F4,F5	22n SMD FILTER Murata NFM21CC223R1H3D
1	J1	3 pin 2.54 mm + 1 jumper
1	P1	8 pin Socket Harwin D01-9973242 (32 pin)
1	P2	IDC 16 Harting 09185166324
1	P3	IDC 6 Harting 09185066324
1	P4	Jack Lumberg KLB 4
2	Q1,Q2	BC847, BC848 or BC849
1	Q3	BC857,BC858 or BC859
1	R1	1K Potmeter Bourns 3362W-1-102LF
1	R22	10K Potmeter Bourns 3362W-1-103LF
6	R2,R3,R12,R13,R23,R24	47K Resistor type RC12H Size 0805

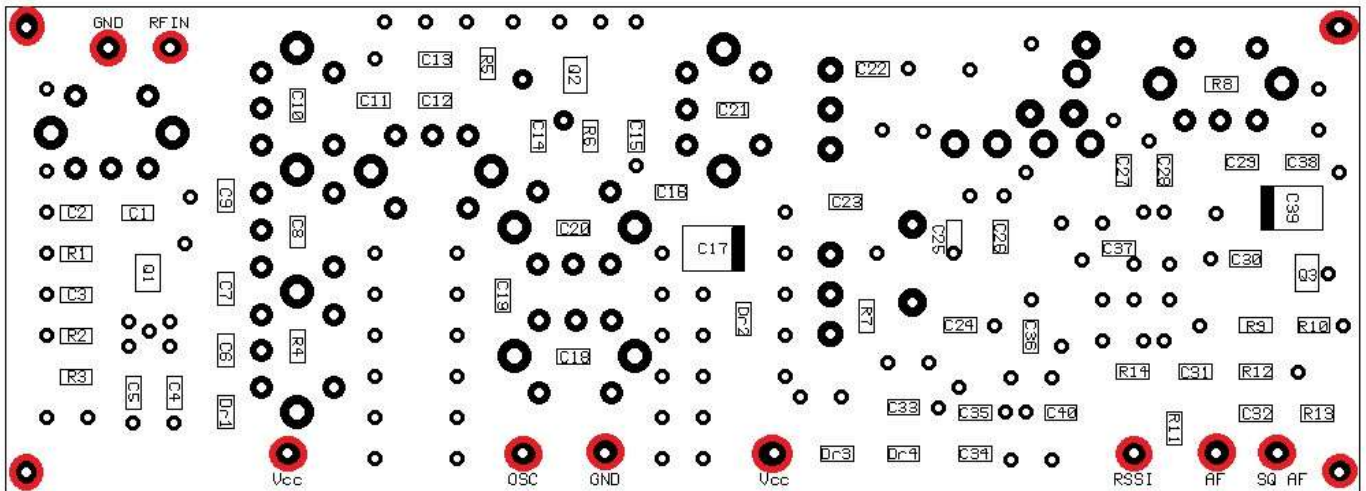
Qty.

2	R4,R27	100K Resistor type RC12H Size 0805
5	R5,R25,R26,R37,R38	100 Resistor type RC12H Size 0805
12	R6,R9,R10,R14,R21,R28, R29,R30,R32,R35,R36,R4a	10K Resistor type RC12H Size 0805
1	R7	15K Resistor type RC12H Size 0805
4	R8,R20,R42,R43	22K Resistor type RC12H Size 0805
2	R11,R40	2.2K Resistor type RC12H Size 0805
4	R15,R31,R33,R41	1K Resistor type RC12H Size 0805
1	R16	8.2K Resistor type RC12H Size 0805
2	R17	33K Resistor type RC12H Size 0805
1	R18	2.7K Resistor type RC12H Size 0805
1	R19	91K Resistor type RC12H Size 0805
1	R39	470 Resistor type RC12H Size 0805
1	U1	ADUC814ARU or ADuC814BRU
0	U2	24C04 Not used
2	U3,U4	LMV321M5 SOT23 5L
2	U5,U6	LMV358 SOIC 8L
1	X1	32.768KHz x-tal

RX pcb Layout Top



RX pcb Layout Bottom



Red circle marking Terminal AL33G

Partlist RX pcb H11003D OZ4HZ 29MHz RX

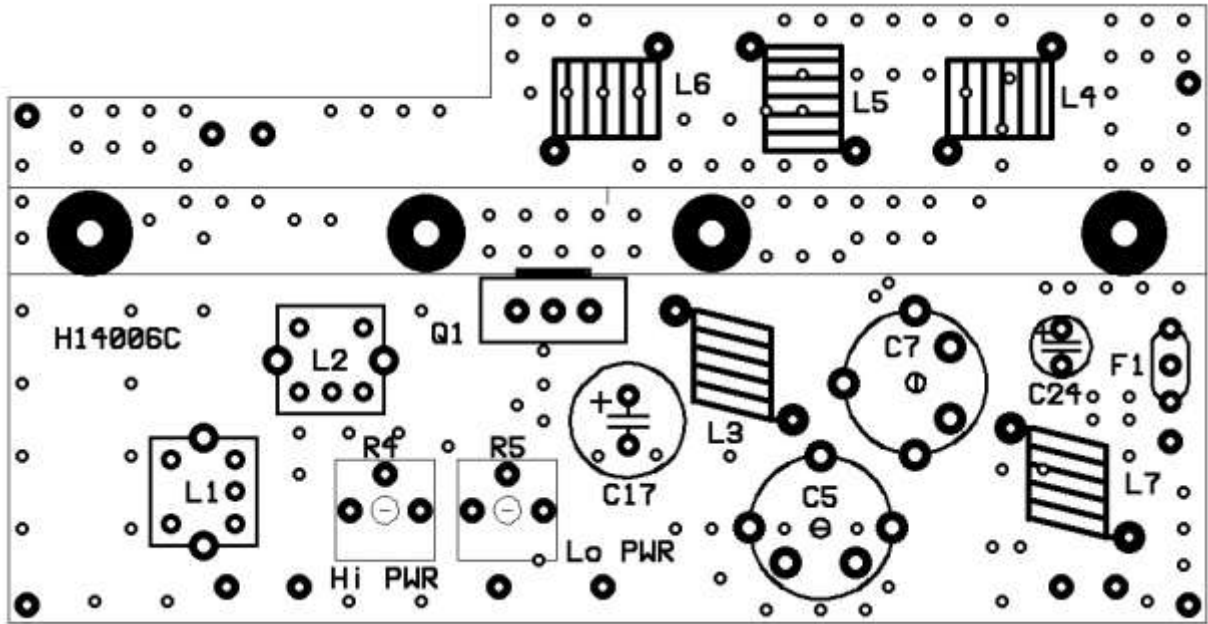
Qty.

2	C1,C12	82p NPO 50V 5% Size 0805
1	C2	68p NPO 50V 5% Size 0805
2	C3,R11	Not used
7	C4,C14,C15,C24,C33,C34,C37	10n X7R 200V 10% Size 0805
8	C5,C16,C27,C28,C35,C36,C38,C40	100n X7R 100V 10% Size 0805
3	C6,C8,C10	39p NPO 50V 5% Size 0805
1	C7	3.9p NPO 50V 5% Size 0805
1	C9	2.2p NPO 50V 5% Size 0805
1	C11	2.7p NPO 50V 5% Size 0805
2	C13,C25	47p NPO 50V 5% Size 0805
2	C17,C39	10u /16V TANTAL SIZE B
2	C18,C20	18p NPO 50V 5% Size 0805
1	C19	1.8p NPO 50V 5% Size 0805
1	C21	180p NPO 50V 5% Size 0805
1	C22	220p NPO 50V 5% Size 0805
1	C23	15p NPO 50V 5% Size 0805
1	C26	120p NPO 50V 5% Size 0805
1	C29	470p NPO 50V 5% Size 0805 (See L9)
1	C30	22n X7R 50V 10% Size 0805
1	C31	1n NPO 50V 5% Size 0805
1	C32	100p NPO 50V 5% Size 0805
1	Dr1	2.2u 20% TDK MLZ2012A2R2WT
1	Dr2	47u 20% TDK MLZ2012M470WT
2	Dr3,Dr4	100u 20% TDC MLZ2012N101LT
2	Fi1,Fi2	10M7.5B RALTRON
1	Fi3	MURATA CFWLA455KGFA-B0
3	L1,L6,L7	NEOSID 7.1S F40 or TOKO 113KNS-2K241DC
4	L2,L3,L4,L5	NEOSID 7.1S F40 or TOKO 113KNS-2K241DC
1	L8	NEOSID 7.1S F10b + F10b Cup core or TOKO 113CN2255

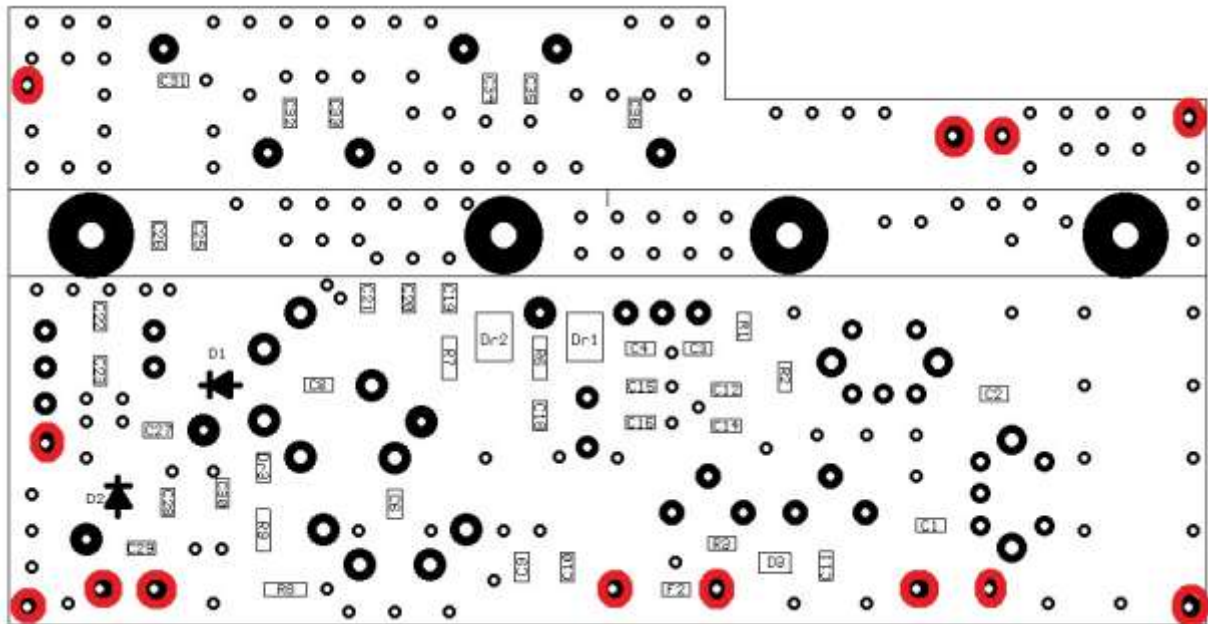
Qty.

1	L9	NEOSID 7.1S F2 + F2 Cup core or TOKO LMCS-4101A .TOKO LMCS-4101A has internal cap so C29 are not used.
13	P1,P2,P3,P4,P5,P6,P7,P8, P9,P10,P11,P12,P13	Solder terminal ASSMANN AL33G
1	Q1	BFS20
1	Q2	BF861
1	Q3	BC847, BC848 or BC849
1	R1	4.99K Resistor type RC12H Size 0805
1	R2	47 Resistor type RC12H Size 0805
2	R3,R13	10K Resistor type RC12H Size 0805
1	R4	1K Resistor type RC12H Size 0805
2	R5,R12	100K Resistor type RC12H Size 0805
1	R6	220 Resistor type RC12H Size 0805
1	R7	3.9K Resistor type RC12H Size 0805
1	R8	27K Resistor type RC12H Size 0805
1	R9	56K Resistor type RC12H Size 0805
1	R10	4.7K Resistor type RC12H Size 0805
1	R14	470K Resistor type RC12H Size 0805
1	U1	MC3371D
1	X1	10.245MHz

TX pcb Layout Top



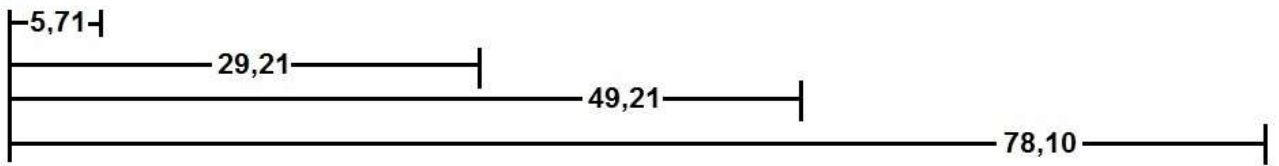
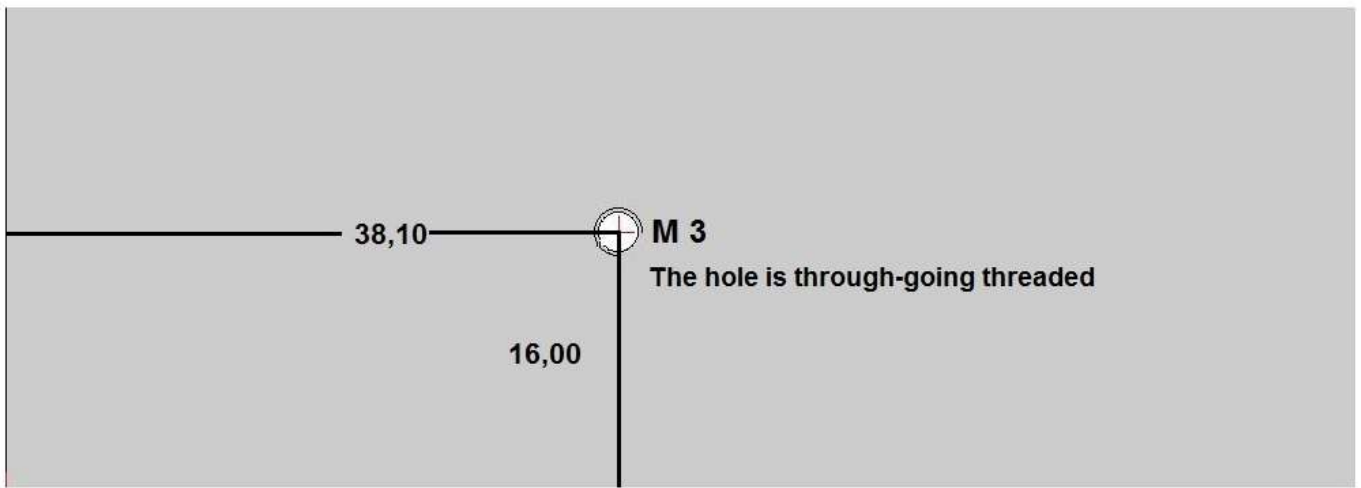
TX pcb Layout Bottom



Red circle marking Terminal AL33G

Qty.

1	C2	82p NPO 250V 5% Size 0805
7	C4,C6,C8,C27,C28,C33,C35	100p NPO 250V 5% Size 0805
2	C5,C7	60p Trimmer BFC2 808 31659
10	C1,C9,C12,C15,C19,C22, C25,C26,C29,C30	10n X7R 200V 10% Size 0805
6	C10,C11,C14,C16,C20,C23	100n X7R 100V 10% Size 0805
6	C3,C13,C18,C21,R6,R7	Not used
1	C17	220u /16V ELLYT
1	C24	47u /16V ELLYT
4	C31,C32,C34,C36	180p NPO 250V 5% Size 0805
1	F1	10n FILTER TDK ZJSR5101-103TA
1	F2	22n SMD FILTER Murata NFM21CC223R1H3D
2	D1,D2	MA4P7102F-1072T
1	D3	BZX84C6V2
3	Dr1,Dr2	2.2u 2.2A 20% KEMET L1210R2R2MDWIT Size 1210
1	Dr3	2.2u 1A 20% TAIYO YUDEN BRC2012T2R2MD Size 0805
1	L1	NEOSID 7.1S F40 or TOKO 113KNS-2K241DC
1	L2	NEOSID 7.1S F40 or TOKO 113SNS-2K256DC
1	L3	5 3/4 Turns 0.7mm CuL 6.5mm int.diameter
2	L4,L6	7 3/4 Turns 0.7mm CuL 6.5mm int.diameter
1	L5	7 3/4 Turns 0.7mm CuL 7.0mm int.diameter
1	L7	6 3/4 Turns 0.7mm CuL 7.0mm int.diameter
13	P	Solder terminal ASSMANN AL33G
1	Q1	RD16HHF1
1	R1	1 Resistor type RC12H Size 0805
1	R2	1K Resistor type RC12H Size 0805
1	R3	2.2K Resistor type RC12H Resistor type
2	R4,R5	10K Potmeter Bourns 3362P-1-103LF
1	R8	100 Resistor type RC02H Size 1206
1	R9	120 Resistor type RC02H Size 1206



Heatsink Al 84x30x6 mm . All holes in the bottom are threaded to a depth of 10 mm.