1 GENERAL SPEC

MODEL NO : MJ-600PLUS
FEATURE

*** FUNCTION**

1. FUNCTION(FC) SELECTION SW
2. AM/FM SELECTION SW
3. TL(TONE LOW) // ROGER BEEP SW
4. SUB CHANNEL(SCH) // BEEP SW
5. SUB WEARCH(SW) // SCAN SEARCH SW
6. AUTO SQUELCH(ASQ) // MEMORY 1 SW
7. FREQUENCY(FRQ) // MEMORY 2 SW
8. EMG(CH9) // MEMORY 3 SW

*** CONTROLS**

1. AF VOLUME CONTROL W/ ON/OFF SW
2. SQUELCH CONTROL (NOISE DET)
3. CHANNEL UP/DOWN CONTROL

*** LCD DISPLAY(VFD DISPLAY)**

1. CHANNEL / FREQUENCY 5 SEGMENT DISPLAY
2. RB / BP / TL
2. SW/ SC /
3. MEMORY CHANNEL 1-3 1SEGMENT DISPLAY
4. FM / AM /
5. 6 BAR SRF LEVEL METER
6. 6 BAR MIC LEVEL METER

*** 3.5 PIE EXT SPEAKER JACK**
*** M-TYPE ANT CONNECTOR**
*** BILT-IN NOISE BLANK and AUTOMATIC NOISE LIMIT**
*** LED BACK LIGHTING<BLUE COLOR>**
*** NOISE SQUELCH.**

*** 8 PIN MIC JACK**

1. **MIC UP / DOWN SWITCH**
2. **DY - MICROPHONE**
3. **ASQ SWITCH**
4. **EXT 13.8V B+ TERMINAL**

*** DIMENSION : D-140mm . W-125mm . H-41mm.**
*** WEIGHT :780 g.(gift total : 1250g)**

ELECTRICAL

*** GENERAL**

@ TRANSMITTER..... CRSTAL CONTROLLED PLL SYNTHESIZER
@ RECEIVER..... DOUBLE CONVERSION, SUPERHETERODYNE SYSTEM
@ VOLTAGE OPERATION..... DC 13.8 V
@ TEMPERATURE..... -10 ℃ ~ +50 ℃
@ CHANNEL STEP ..... 10 Khz

*** TRANSMITTER**

@ OUTPUT POWER.....
* FM/AM : 4WATTS
* FM 10W , AM 8W
@ FREQUENCY RANGE.....
* 40CH 26.965 ~ 27.405 MHz
*240CH 25.615 ~ 28.305 MHz
@ FREQUENCY TOLERANCE..... +-600 Hz
@ MODULATION SENS..... 3mV(1.25KHz INPUT)
@ MODULATION CAPABLITY..... AM : 90 %
FM : 2 KHz

***RECEIVER**

@ FREQUENCY RANGE.....
* 40CH 26.965 ~ 27.405 MHz
*240CH 25.615 ~ 28.305 MHz
@ SENSITIVITY..... AM : 0.5 uV(S/N 10dB)
FM : 0.3 uV (SINAD12dB)
@ SQUELCH..... 0.5 uV
@ AUTO SQUELCH..... 0.3 uV
@ S/N RATIO..... 45 dB
@ DISTORTION..... 3 %
@ MAX POWER..... 4 WATTS
@ S/METER(S-9)..... 100 uV

*** TEST CONDITION**

@ POWER SOURCE..... DC 13.8 VOLTS
@ ANT LOAD IMPEDANCE..... 50 ohm NON-INDUCTIVE
@ AUDIO LOAD IMPEDANCE..... 8 ohm

|MJ-600PLUS FRONT UNIT PARTS LIST Apr 11 10:40:15 2006 |

Item	Qty	Reference	Part Name	Manufacturer	Description
1	1	C402	C-SMD,0.001		
2	1	C413	C-SMD,0.0047B		
3	3	C410-411	C-SMD,0.022		
		C414			
4	1	C409	C-SMD,0.022B		
5	5	C401	C-SMD,0.1		
		C405-408			
6	2	C403-404	C-SMD,20PCH		
7	1	D408	D-A,KDR357		
8	12	D401-407	D-A,S160		
		D410			
		D414-417			
9	1	D409	DZ-R,5.1VB		
10	1	IC401	IC80TFP,		
			S3C8245&8249		
11	1	IC402	ICP08,S21AC		
12	1	LCD401	LCD25PA		
13	4	LD401-404	LED-S,BLUE		
14	1	LD405	LED-S,		
			RED/GREEN		
15	1	D14	LED-S,RX-GREEN		
16	1	DY1	MIC-D6,		
			150/30PIE		
17	2	MIC2	MIC-E,DIN		
		MIC401	SOCKET		
18	1	R413	R-SMD,1 KJ		
19	1	MR1	R-SMD,1 KJ/AX		
20	9	R406-407	R-SMD,100KJ		
		R409			
		R415-417			
		R419-421			
21	3	R403-404	R-SMD,10KJ		

		R410			
22	1	R402	R-SMD,15KJ		
23	1	R1	R-SMD,22 KJ		
24	2	R405 R408	R-SMD,220KJ		
25	1	R2	R-SMD,22KJ		
26	1	R428	R-SMD,4.7K		
27	1	R414	R-SMD,4.7KJ		
28	1	R418	R-SMD,		
			470(2012)X4		
29	5	R422-426	R-SMD,47KJ		
30	1	R401	R-SMD,6.8KAX		
31	2	R411-412	R-SMD,680J		
32	1	SW1000	SW-2,POWER		
33	1	MSW1	SW-6A,PTT-SW		
34	1	MSW3	SW-DIP,M-DOWN		
35	1	MSW4	SW-DIP,M-SCH		
36	1	MSW2	SW-DIP,M-UP		
37	1	SW401	SW-ENCD,		
			CH-UP/DOWN		
38	1	SW402	TACT,		
			AM/FM/TL(LCR)		
39	1	SW403	TACT,ASQ/M1		
40	1	SW412	TACT,CH19		
41	1	SW409	TACT,CH9/M3		
42	1	SW410	TACT,FC		
43	1	SW7	TACT,FRQ/M2		
44	1	SW413	TACT,LCR		
45	1	SW404	TACT,LCR/BEP		
46	1	SW406	TACT,SCH/BP		
47	1	SW407	TACT,SW/SC		
48	1	SW405	TACT,T-SQ/RB		
49	1	SW411	TACT,TL/RB		
86	1	Q401	TR,A102S		
87	2	Q1-2	TR,A110		
88	1	Q403	TR,C102S		
89	1	Q402	TR,C110S		
90	1	SQ401	VR-10X10,10KB		

|91 |1 |VR401 |VR-10X10,50KA | | |
|92 |1 |X401 |XTL-11X4.5, | | |
		|8.0MCL20P		

|MJ-600PLUS-MAIN EU part list.sch May 26 12:38:28 2006 |

Item	Qty	Reference	Part Name	Manufacturer	Description
1	1	J2	ANT,ANT		
2	2	C60 C105	C-SMD,0.001B		
3	7	C1 C56 C74 C86 C109 C113 C118	C-SMD,0.001B		
4	1	C20	C-SMD,0.0022B		
5	2	C64 C107	C-SMD,0.0047B		
6	10	C8 C14 C16 C33 C36 C38 C62 C70 C81 C85	C-SMD,0.01B		
7	1	C34	C-SMD,0.015B		
8	18	C2 C13 C30 C35 C58 C65 C69 C75 C77-78 C84 C103-104 C108 C112 C114 C116 C144	C-SMD,0.01B		
9	11	C7 C24 C29 C32 C46 C57 C59 C71-72 C80 C111	C-SMD,0.022B		
10	2	C90 C142	C-SMD, 0.022B(2012)		

11	1	C61	C-SMD,0.022B		
12	1	C68	C-SMD,0.068B		
13	3	C19	C-SMD,0.1		
		C21-22			
14	8	C3 C23	C-SMD,0.1B		
		C27 C31			
		C54 C63			
		C110 C117			
15	5	C136-139	C-SMD,0.33B		
		C146			
16	1	C28	C-SMD,100PCH		
17	1	C93	C-SMD,		
			100PCH(3216)		
18	1	C41	C-SMD,10PCH		
19	1	C102	C-SMD,12PCH		
20	2	C44 C73	C-SMD,150PCH		
21	1	C97	C-SMD,		
			150PCHD/50V		ANT CON
22	1	C76	C-SMD,180PCH		
23	1	C96	C-SMD,		
			180PCH(3216)		
24	1	C145	C-SMD,18PCH		
25	4	C4 C6	C-SMD,1uFB		
		C121 C147			
26	1	C120	C-SMD,		
			2.2uFB(2012)		
27	4	C39 C53	C-SMD,220PCH		
		C55 C106			
28	1	C43	C-SMD,270PCH		
29	3	C95	C-SMD,		
		C130-131	270PCH(3216)		
30	2	C11 C17	C-SMD,27PCH		
31	1	C98	C-SMD,		
			27PCH(3216)		
32	1	C42	C-SMD,30PCH		
33	3	C26 C79	C-SMD,330PCH		
		C83			

34	3	C25 C40	C-SMD,33PCH		
		C51			
35	1	C94	C-SMD,		
			390PCH(3216)		
36	1	C119	C-SMD,3PCH		
37	3	C122	C-SMD,		
		C134-135	4.7uFB(2012)		
38	1	C140	C-SMD,		
			4.7uFB(3216)		
39	1	C50	C-SMD,470PCH		
40	1	C88	C-SMD,		
			470PCH(2012)		
41	1	C89	C-SMD,		
			470PCH(3216)		
42	3	C47-49	C-SMD,47PCH		
43	1	C5	C-SMD,		
			47PCH(2012)		
44	2	C18 C45	C-SMD,5PCH		
45	1	C67	C-SMD,680PCH		
46	1	C87	C-SMD,68PCH		
47	2	C91 C115	C-SMD,		
			68PCH(2012)		
48	1	C15	C-SMD,7PCH		
49	1	C82	C-SMD,8PCH		
50	1	C12	C-SMD,820PCH		
51	2	MCF1-2	CF-A,10.7MHZ		
52	1	CF2	CF-A,455HTW		
53	1	TK1	COIL,L6		
54	1	CORD	GND,13.8V		POWER CORD W/ FUSE5A
55	1	CN1	CON-2B,IN-SP		SP TWIN 160mm assy
56	1	CT1	CV-SMD,20P		
57	1	D20	D-A,1N4002		
58	2	D23-24	D-A,1N5401		
59	1	D11	CHIP KDR357		
60	2	D2 D17	CHIP KDR357		
61	4	D9 D13	CHIP KDS160		
		D15 D25			

62	4	D1 D3 D6	SOT23,KDS226		
		D10			
63	2	D5 D18	SOT23,KDS181		
64	1	D4	SOT23,KDS184		
65	2	D8 D14	SOT23,KDV251Y		
66	1	D27	SOT23,ZD3.0VB		
67	2	D12 D22	SOT23,ZD5.6VB		
68	1	D7	SOT23,ZD9.1VB		
69	1	CE35	TANTAL,1/16		
70	1	CE8	TANTAL,10/16		
71	1	CE26	TANTAL,10/16		
72	2	CE10 CE27	E-A,100/16		
73	1	CE11	E-A,1000/16		
74	4	CE16-17	CHIP 22/16		
		CE19 CE28			
75	1	CE1	TANTAL3.3/16A		
76	3	CE7 CE14	CHIP 33/16		
		CE18			
77	1	CE9	EL 330/16		
78	3	CE13 CE20	CHIP 47/16		
		CE30			
79	1	CE32	EL,470/16		
80	1	Q45	FET,K211GR		
81	1	IC6	78LO5 REG		
82	2	IC5	IC5,KIA4558F		
83	1	IC4	IC10,KIA7217		
84	1	IC2	IC14,MC4066		
85	1	IC3	IC24 LC7152M		
86	1	IC1	ICP16,MC3361		
87	1	T3	IFT,047		
88	1	T4	IFT,048		
89	1	T6	IFT,81450A		
90	1	T7	IFT,81460N		
91	1	T1	IFT6,81410A		
92	1	T2	IFT6,81420		
93	2	T9-10	IFT6,81480		
94	1	T11	IFT6,LX18		

95	1	T5	IFT-5,036		
96	1	J1	J-SP,3.5JACK		
97	1	L4	PACKING COIL		
98	1	L11	CHIP		
			220nH(2012)		
99	1	L3	CHIP		
			6.8uH(2012)		
100	1	L1	L-D,6T		
101	1	L9	L-D,7-1/2T		
102	4	L6-8 L10	L-D,8-1/2T		
103	2	R121 R141	R-SMD,0		
104	1	R58	R-SMD,1.5KJ		
105	1	R28	R-SMD,1.5MJ		
106	1	R126	R-SMD,1.8KJ		
107	1	R70	R-SMD,10(2102)		
108	6	R19 R63	R-SMD,100J		
		R84			
		R100-101			
		R133			
109	9	R15 R45	R-SMD,100KJ		
		R49 R88			
		R114 R128			
		R138			
		R151-152			
110	1	R44	R-SMD,10KJ		
111	19	R7 R13	R-SMD,10KJ		
		R23 R48			
		R51 R59			
		R67 R75			
		R77-79			
		R92 R98			
		R119 R129			
		R139 R147			
		R154 R163			
112	1	R107	RES 1/2W		
			120J		
113	1	R117	RES,150J/1W		

114	1	R42	R-SMD,150KJ		
115	3	R27 R66	R-SMD,15KJ		
		R94			
116	1	R85	R-SMD,180KJ		
117	9	R18 R30	R-SMD,1KJ		
		R54 R93			
		R95 R125			
		R127			
		R134-135			
118	2	R5 R150	R-SMD,1MJ		
119	1	R52	R-SMD,1OKJ		
120	1	R10	R-SMD,1KJ		
121	9	R2 R4 R16	R-SMD,2.2KJ		
		R36 R46			
		R65 R71			
		R91 R137			
122	5	R1 R20-21	R-SMD,2.7KJ		
		R96 R123			
123	2	R22 R33	R-SMD,220J		
124	3	R53 R57	R-SMD,220KJ		
		R99			
125	1	R72	R-SMD,22J		
126	1	R31	R-SMD,22KJ		
127	7	R11 R25	R-SMD,22KJ		
		R68			
		R73-74			
		R130 R142			
128	1	R120	R-SMD,270J		
129	2	R89 R132	R-SMD,27KJ		
130	2	R82-83	R-SMD,3.3KJ		
131	4	R32 R97	R-SMD,330J		
		R140 R145			
132	1	R86	R-SMD,33KJ		
133	3	R37 R41	R-SMD,33KJ		
		R90			
134	1	R29	R-SMD,33KJ		
135	2	R118 R124	R-SMD,390J		

136	1	R69	RES,4.7/2W		
137	2	R102-103	R-SMD,4.7KJ		
138	1	R144	R-SMD,		
			4.7KJ(2012)		
139	5	R14 R115	R-SMD,4.7KJ		
		R131 R136			
		R156			
140	2	R26 R116	R-SMD,470J		
141	1	R146	R-SMD,470KJ		
142	3	R35	R-SMD,47J		
		R105-106			
143	8	R3 R6	R-SMD,47KJ		
		R38-39			
		R43 R55			
		R80-81			
144	1	R104	R-SMD,5.6KJ		
145	4	R87	R-SMD,5.6KJ		
		R148-149			
		R153			
146	1	R56	R-SMD,56J		
147	2	R24 R34	R-SMD,56KJ		
148	1	R61	R-SMD,6.8KJ		
149	1	R109	R-SMD68J(2012)		
150	1	R122	R-SMD,680J		
151	2	R64 R108	R-SMD,68J		
152	1	R40	R-SMD,68KJ		
153	1	R112	R-SMD,820J		
154	1	R17	R-SMD,82KJ		
155	2	Q21 Q25	SOT23,KRA101S		
156	2	Q35 Q38	T-92L,KTA1241Y		
157	2	Q29 Q43	SOT23,KTA1504Y		
158	1	Q34	T-220AB,B988Y		
159	10	Q6 Q12-14	SOT23,KRC102S		
		Q22 Q24			
		Q27 Q37			
		Q40-41			
160	1	Q26	SOT23,KRC110S		

161	1	Q33	T-220,		
			2SC2078E		
162	1	Q32	T-???,2SC2314F		
163	1	Q31	T-92,		
			C3199GR		
164	11	Q1 Q3	SOT23,KTC3875Y		
		Q10-11			
		Q15 Q20			
		Q23 Q28			
		Q36 Q39			
		Q44			
165	9	Q2 Q8-9	SOT23,KTC3880Y		
		Q16-17			
		Q19 Q30			
		Q42 Q47			
168	1	OPT1	TRANS,28MM		
169	1	CH1	TRANS,19MM		
170	1	VR4	VR-CHIP,1KB		
171	1	VR6	VR-CHIP,470B		
172	1	VR1	VR-CHIP,100KB		
173	1	VR3	VR-CHIP,5KB		
174	1	X1	XTL-49/U,8PPM		
			10.245MHZ		

MJ-600PLUS THEORY OF CIRCUITS , ALIGNMENT PROCEDURES

1. CIRCUIT DESCRIPTION

1-1. PLL PARTY

Main CPU IC does Kondeurol to serial data to PLL IC doing function and Display indication function at the same time.

Also, EEP ROM IC stores data in addition that increase and do memory

VCO AND REFERENCE FREQUENCY OSCILRATE AND THE PHASE DETECTER HAVE DESIGNATED PLL CIRCUIT, WHICH PHASE BOTH FREQUENCIES.

THE OUTPUT OF PHASE DETECTOR CONTROLLED VCO AND M AKE STABLIZED OF VCO OSCILATE FRQUENCY.
THE PLL WILL WORKING STABLY WHEN THE PHASE OF VCO AND REFERENCE FREQUENCY SHOULD BE EQUAL.

PLL BLOCK DIAGRAM

→ REFERENCE FREQUENCY -→
→ PHASE COMPARATOR → L.P.F → TO VCO OSC.
→ VCO. OSCILLATOR -→ (LOW PASS FILTER)

1-2. RECEIVER PARTY

1-2-1. HIGH FREQUENCY AMPLIFICATION PARTY.

Q2 IS HIGH FREQUENCY AMPLIFICATION TRANSISTOR AND APPLIED COMMON EMITTER METHOD.

THIS CIRCUIT HAS BEEN FEATURED AS HIGH SENSITIVITY AND LOW NOISE.

D6 IS WORKING AS WHEN INCOMING STRONG SIGNAL ON RECEIVER.

1-2-2. FIRST MIXER PARTY

Q8,Q9 IS MIXER PARTY. AND IT HAS OUTPUT 10.700㎒(MID RANGE) BY MIXE HIGH FREQUENCY AMPLIFICATED SIGANL AND 1ST LOCAL OSCILLATED FREQUENCY.

FOR EXAMPLE, IF THIS EQUIPMENT IS 19CH, THE FREQUENCY IS 27.185㎒ AND 1ST LOCAL FREQUENCY IS 16.485㎒.

SO, Fo - 1ST LOCAL FREQUENCY (V.C.O FREQ.) ARE 10.700㎒.

1-2-3. FILTER APRTY

WHEN THE 10.700㎒ WHICH MADE FROM THE FIRST MIXER PARTY PASSED MCF1,2 FILTER GETS REAL 10.700㎒ SIGNAL WHICH HAS BAND WIDTH -/+7.5㎑.

1-2-4. 2ND MIXER PARTY

WHEN THE 10.700㎒ AND 2ND LOCAL FREQUENCY (10.245㎒) ARE MIXED BY IC 1, THE MIDDLE FREQUENCY 455㎑ HAS OUTPUTED AND PASSING CF2 FILTER.

1-2-5. FM DETECTOR PARTY.

THE FM SIGNAL DETECTING BY IC 1 AND TURN TO VOICE SIGNAL ON IC2(SW IC).

1-2-6. AM FREQUENCY DETECTOR PARTY

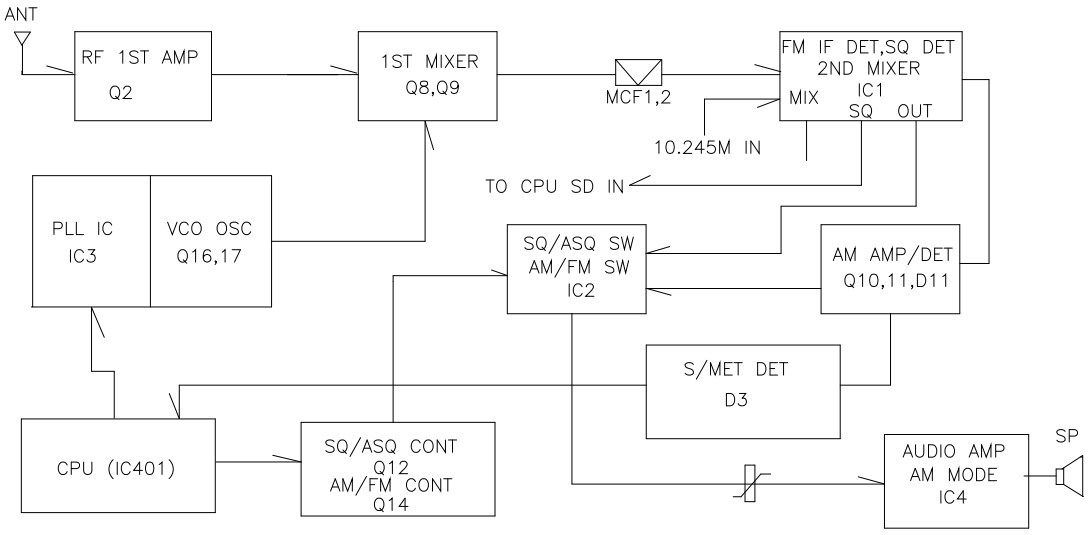
The AM detecting waves amplifies 455 KHzs sign that appear in FM DET IC in Q10, Q11, Boiseu signal that is detected by D11 is sent to IC2(SW IC).

1-2-7. AUDIO AMPLIFIER PARTY

MODIFIED VOICE SIGNAL WILL BE HEARED TROUGH SPEAKER BY PASSING VOLUME AND AUDIO POWER AMP (IC 4).

RECEIVER BLOCK DIAGRAM

RX BLOCK DIAGRAM



1-3. TRANSMITTER PARTY.

1-3-1. V.C.O PARTY (VOLTAGE CONTROL OSCILLATOR)

ACCORDING TO VCO VOLTAGE MODIFIED OF EACH CHANNEL,
FVCO X 2 FREQUENCY *(IN CASE IF 19CH, 27.185㎒) IS MADE
BY VCO FREQUENCY & DIVIDE RATIO (N) ARE MODIFYING.

AT THIS TIME, THE VCO FREQ (13.5925㎒ AT 19CH) IS FLOW IN Q30.
AND ON Q30, DOUBLLER THE FVCO X 2 ㎒ IS TURN TO 27.185㎒
FLOW IN Q31 BSAE.

THE Q31 ARE PRE-AMPLIFIER. AND IT AMPLIFICATE WEAK CARR-
IER OF 27.185㎒. THE 27.185㎒ FLOW IN TO Q32 AND IT AMPLIFICATE
ON THE Q33 (TX POWER AMP) AND RADIATE BY ANTENNA THROUCH L.P.F.

1-3-2. L.P.F (LOW PASS FILTER)

TK1, L6, L7, L8.L9,L10 & C94,C95,C139,C131,C96,C97 ARE L.P.F CIRCUIT. AND THIS CIRCUIT DEPRESS THE NEEDLESS HARMONICS TO UNDER 90dB EXCEPT THE 27㎒.

1-3-4. AM MODULATION

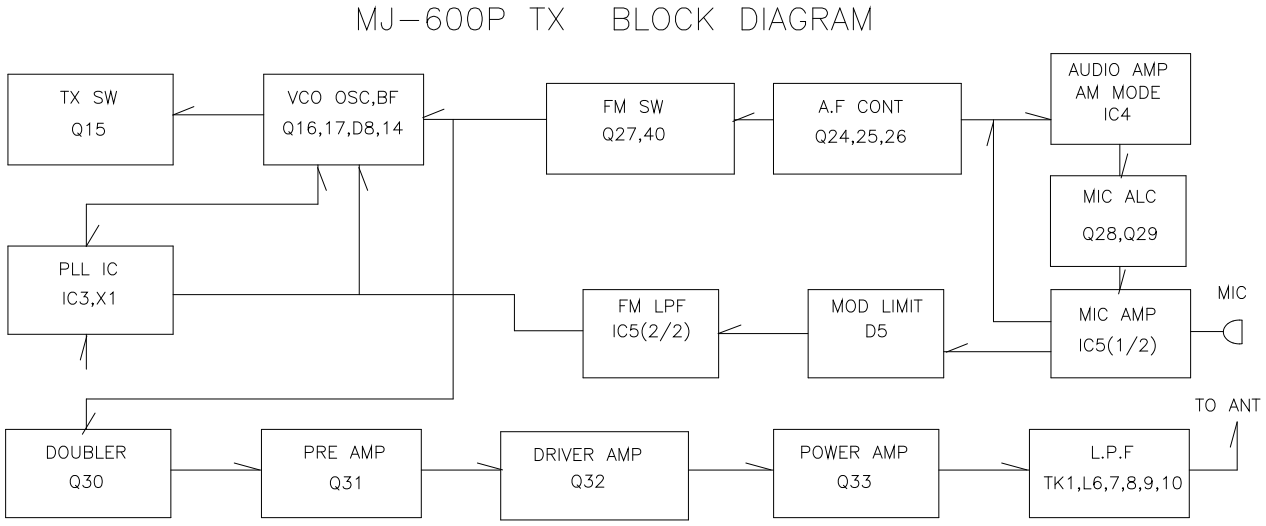
A) THE AMPLIFICATED SIGNAL ON IC5(1/2) FLOW IN TO IC4. AND THIS SIGNAL MODULATED ON IC4, OPT1 THROUGH D24.

B) AMC CONTROLLED BY Q28 AFTER DETECT ON Q29,D15.

1-3-5. FM MODULATION

THE AMPLIFICATED SIGNAL ON IC5(1/2) FLOW IN TO LIMIT DIODE D6 AND LPF IC5(2/2) FLOW IN TO MODULATED UNDER CONTROL OF FVCO WHICH MODIFIDE VARIABLE CAPACITOR D14 THROUGH FILTER.

TX BLOCK DIAGRAM



2. HOW TO ADJUST

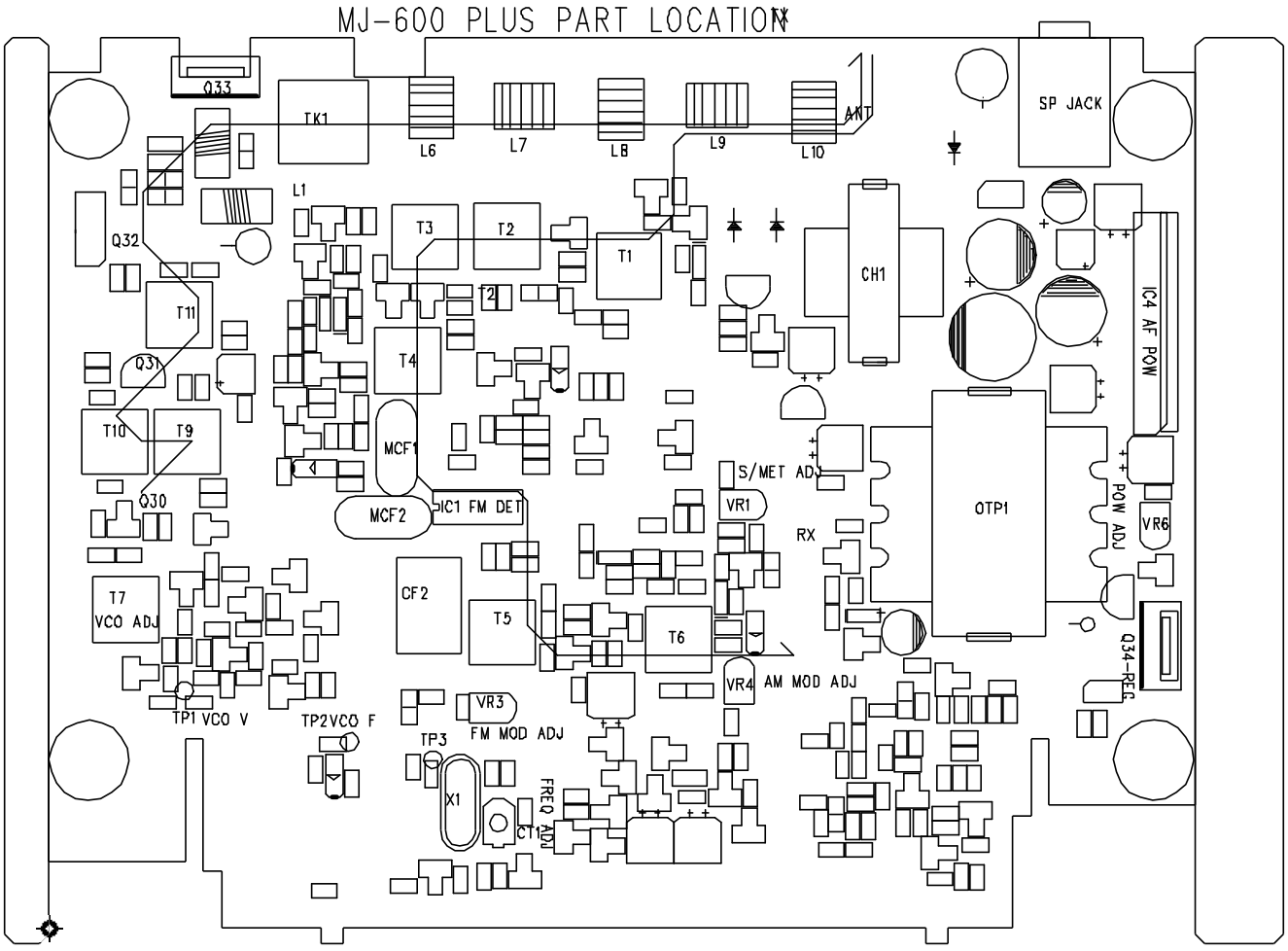
2-1. PREPARATION

2-1-1. HOW TO DISASSEMBLE

TAKE OFF 8 PCS OF SCREWS ON SDIE PART OF BOTTOM COVER.

2-2. ADJUST & TEST POINT

PARTS LOCATION DIAGRAM



2-3. PASHE LOCKED LOOP & VCO PARTY

A) TEST EQUIPMENTS

1) FREQUECY COUNTER

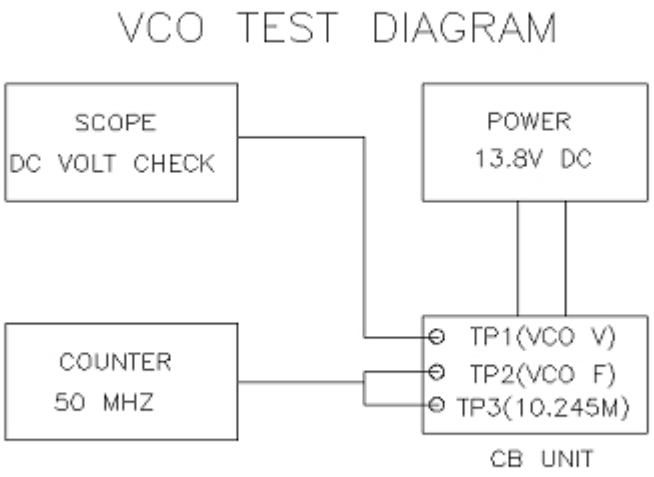
2) D.C POWER SUPPLY (13.8 VOLT. 3 Amp)

3) DC VOLTMETER

4) OSCILLOSCOPE

B) ADJUST ORDER

ORDER	PREPARATION	CONNECTION	POINT	ADJUST
1	10.245㎒ ADJUST 1) PTT S/W : RX 2) VR/SQ : TX 3) CH : FM 1CH	CONNECT ON TP3 WITH PROBE AND CHECK THE FREQ COUTER	CT1	10.245㎒ +/- 100Hz
2	RX VCO ADJUST 1) PTT S/W : RX 2) VR/SQ : MORMAL 3) CH : FM 1CH	CONNECT ON DC VOLTMETER TO TP1	T7	2.5V
3	TX VCO CHECK 1) PTT S/W : TX 2) VR/SQ : NORMAL 3) CH : FM 1CH	SAME AS ABOVE	T7	2.5~3.0V
4	F VCO CHECK 1) PTT S/W : RX 2) VR/SQ : NORMAL 3) CH : FM 1CH	CONNECT ON PROBE TO TP2. FREQ.COUNTER		16.2625㎒



2-4. TRANSMITTER PARTY

A) TEST INSTUMENTS

1) RF POWER METER
2) 50 ohm LOAD
3) RF ATTENUATOR
4) OSCILOSCOPE
5) AUDIO GENERATOR
6) DC POWER METER (13.8V 3A)
7) SPECTRUM ANALYZER
8) FREQUENCY COUNTER
9) COUPER
10) DUMMY LOAD
11) MODULATION METER

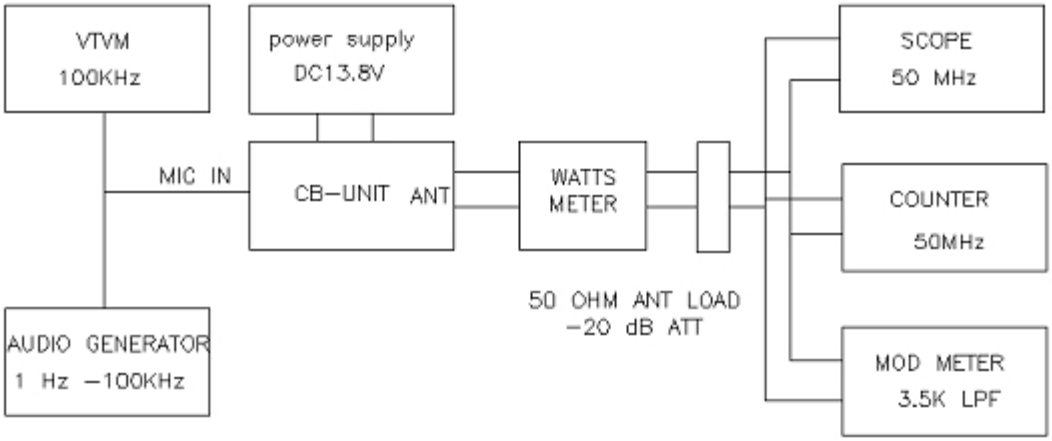
B) CONTROL ORDER

№	PREPARATION	CONNECTION	POINT	ADJUST
1	RF DRIVER & CURRENT ADJUST 1) PTT S/W : TX 2) VR/SQ : NORMAL 3) BAND: AM/FM 4) CH : 19CH	ADASHIVE 50ohm DUMMY LOAD ON RF POWER METER AND CONNECT ON ANTENNA JACK ON EQUIPMENT. TX TEST2	*T9,T10,,T11, L1, TK1 (AM:NO MOD)	*CONTROL UPTO MAXIM -UM RF DRIVER LEVEL MAXIMUM OUTPUT
2	ADJUST RF POWER 1)PTT S/W : TX MODE 2)VR/SQ : NORMAL 3)BAND:FM/AM 4)CH : 19CH	SAME AS ABOVE	*FM/AM:VR6	*ADJUST 4WATTS
3	2ND HRAMONIC CONFIR-MATION 1) PTT S/W:TX MODE 2) VOLUME: NORMAL 3) SQUELCH : NORMAL 4) CH: FM/AM 19CH	CONNET THE RF ATTENUATOR(-60dB) TO ANT JACK OF EQUIP AND CONNECT TO SPECTRUM. TX TEST2		CONFIRMATION DISPLAYED BASIC FRE -QUENCY AND 2ND,3RD FREQ.UNDER NONMOD -ULATE CONDITION

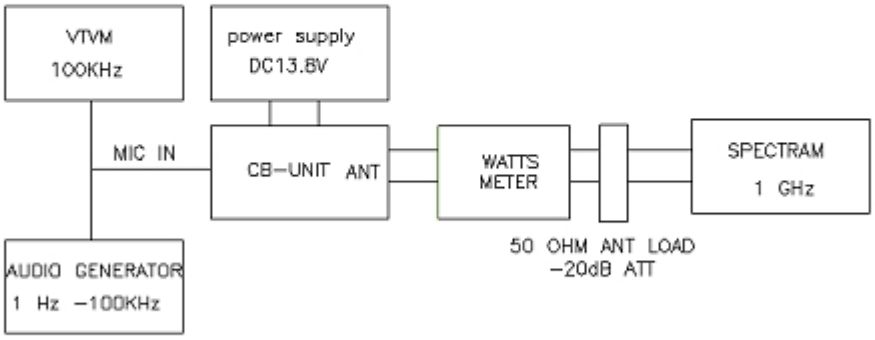
№	PREPARATION	CONNECTION	POINT	ADJUST
4	TX FREQUENCY CONFIR-MATION 1) PTT S/W: TX MODE	CONNECT FRQUENCY COUNTER TO ON OUTPUT OF DUMMY LOAD.	CT1	ADJUST FREQUENCY AS 27.185MHZ +/-200HZ WHICH DISPLAY ON

	2) VOLUME: NORMAL 3) SQUELCH: NORMAL 4) CH: FM/AM 19CH	TX TEST1		FREQ. COUNTER
5	AM MODULATION CONFIR-MATION 1) PTT S/W : TX MODE 2) VOLUME : NORMAL 3) SQUELCH : NORMAL 4) CH : 19CH 5) BAND S/W : AM	CONNECT THE OUTPUT TO OSCILOSCOPE. INSERT TO 1KHZ SIGNAL OF AUDIO GENERATOR TO BOTH TERMINAL OF MIC OF SET.TX TEST1	VR4	ADJUST 85~ 90% MODULATE ON OSCILOSCOPE IN MODULATION SITUATION.
6	FM MODULATION CONFIR-MATION 1) PTT S/W : TX MODE 2) VOLUME : NORMAL 3) SQUELCH : NORMAL 4) CH : 19CH 5) BAND S/W : FM	CONNECT THE RF OUT POWER METER TO DEV METER. INSERT THE 1.25KHZ 20mV SIGNAL OF AUDIO GENERATOR TO BOTH TERMINAL OF MIC OF SET. TX TEST1	VR3	ADJUST 2.0KHZ ON DEV.METER UNDER CONDITION OF MODULATION.

TX TEST DIAGRAM 1



TX TEST DIAGRAM 2



2-5 RECEIVER PARTY

A) TEST EQUIPMENTS

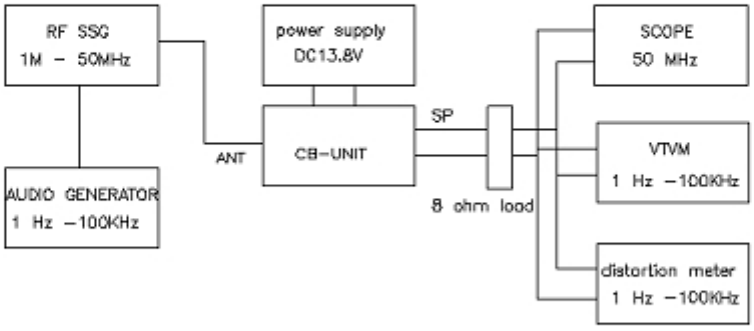
1) S.S.G
2) V.T.V.M
3) DISTORTION METER
4) DC POWER SUPPLY
5) 8 ohm DUMMY LOAD

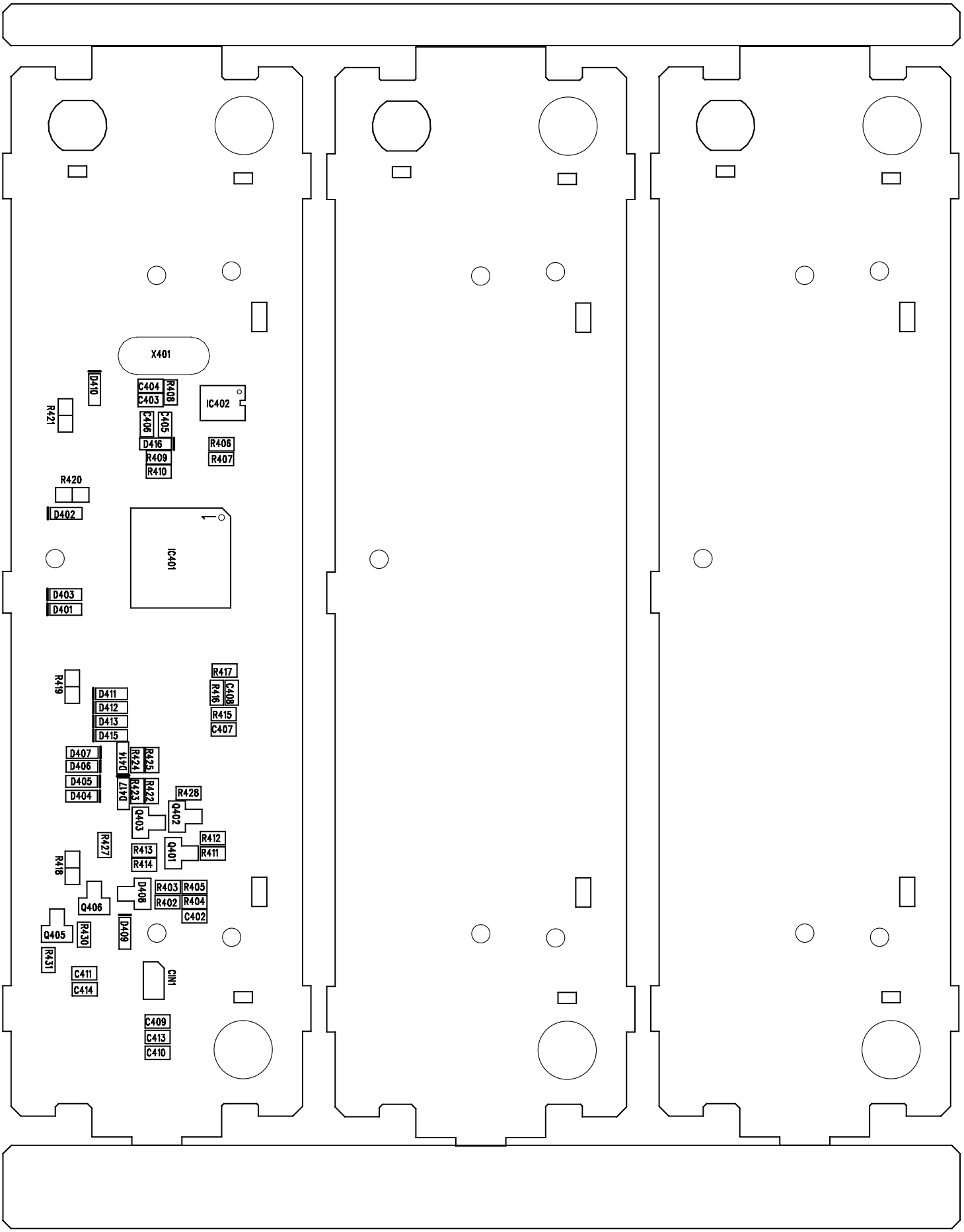
B) ADJUST ORDER

NO	PREPARATION	CONNECTION	POINT	ADJUST
1	RF DRIVER/ 1F PARTY 1) PTT S/W : RX MODE 2) VOLUME : MINIMUM	CONNECT SSG TO ANT JACK AND CONNECT VTVM & DISTORTION	T1,T2,T3,T4, T6.	ADJUST VTVM TO MAXIMUM

	3) SQUELCH : MINIMUM 4) CH : 19CH 5) S.S.G : 27.185MHZ 1KHZ. ATT 30% MODE 6) BAND S/W : AM	METER TO 8ohm. RX TEST		
2	FM/DET PARTY 1) PTT S/W : RX MODE 2) VOLUME : STANDARD 3) SQUELCH : MINIMUM 4) CHANNEL : 19 CH 5) S.S.G : 27.185MHZ 1 KHZ, 1mV, 1.25 KHZ, DEV 6) BAND SW : FM	SAME AS ABOVE RX TEST	T5	SAME AS ABOVE
3	SQ ACTIVITY SITUATION 1) PTT S/W : RX MODE 2) VOLUME : STANDARD 3) SQUELCH : MAXIMUM 4) CH : 19 CH 5) S.S.G : 27.185MHZ ATT 0.5~1uV 1 KHZ 30% MOD 6) BAND S/W : AM	INSERT THE SSG TO ANT JACK AND CONNECT VTVM & DISTORTION METER TO 8 ohm LOAD. RX TEST	-	SQ VR MAXIMUM CHECK 1KHZ WILL APPEAR.
4	RX SIGNAL METER ADJUST 1) PTT S/W :RX MODE 2) VOLUME :STANDARD (2V) 3) SQUELCH : MINIMUM 4) CH : 19CH 5) S.S.G : 27.185MHZ 1 KHZ,1000uV30% MOD 6) BAND S/W : AM	CONNECT THE ANT JACK TO SSG AND CONNECT VTVM & DISTORTION METER TO 8 ohm LOAD. RX TEST	VR1	ADJUST UNTILL LIGHT ON LCD FULL

RX TEST DIAGRAM




X401
D410
C404
C403
R408
IC402
R421
C406
C405
D416
R406
R407
R409
R410
R420
D402
IC401
D403
D401
R419
R417
C408
R416
R415
C407
D411
D412
D413
D415
D407
D406
D405
D404
D414
D417
R425
R424
R423
R422
R428
Q402
Q403
R427
R412
R411
Q401
R413
R414
R418
D408
R403
R405
R402
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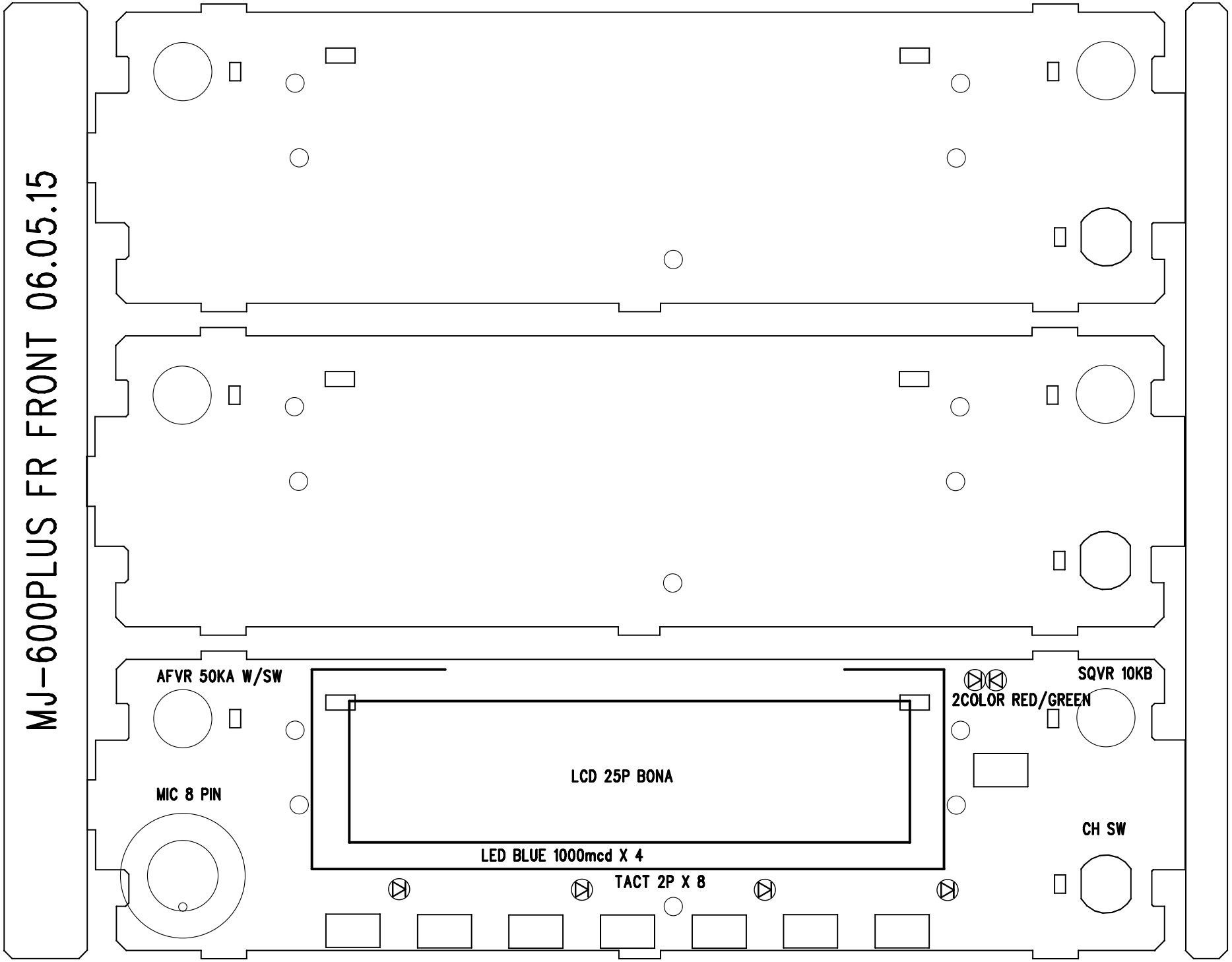
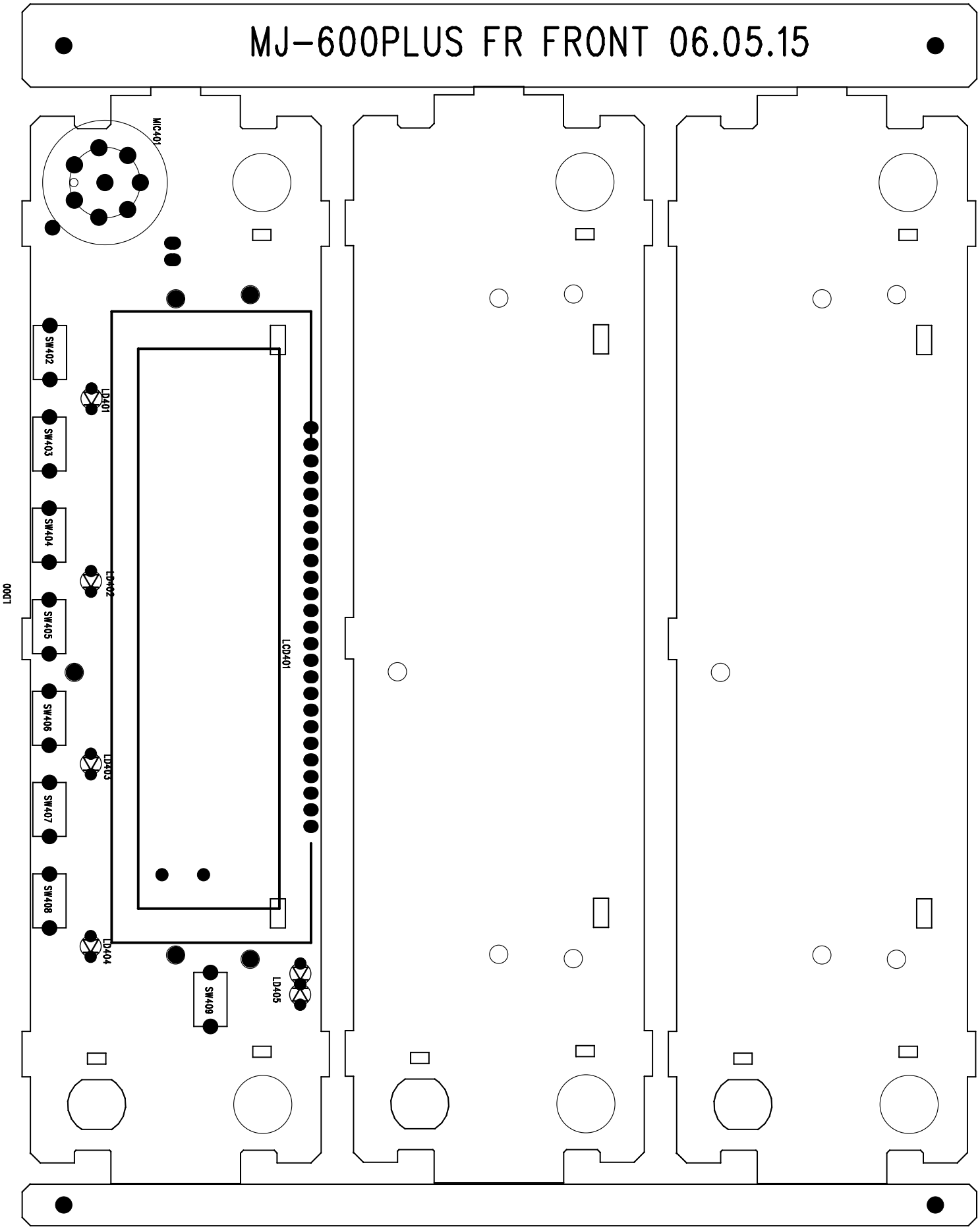
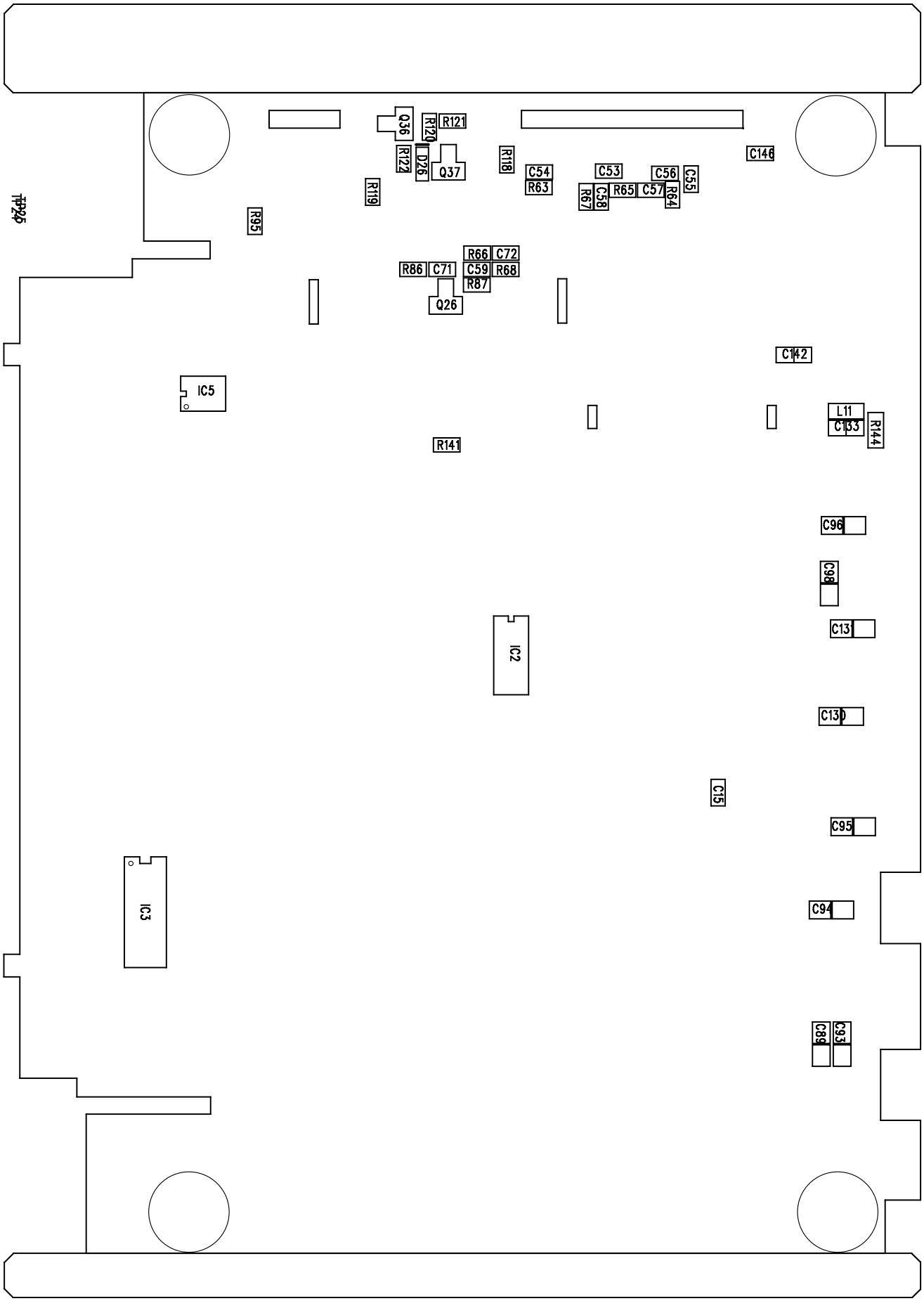
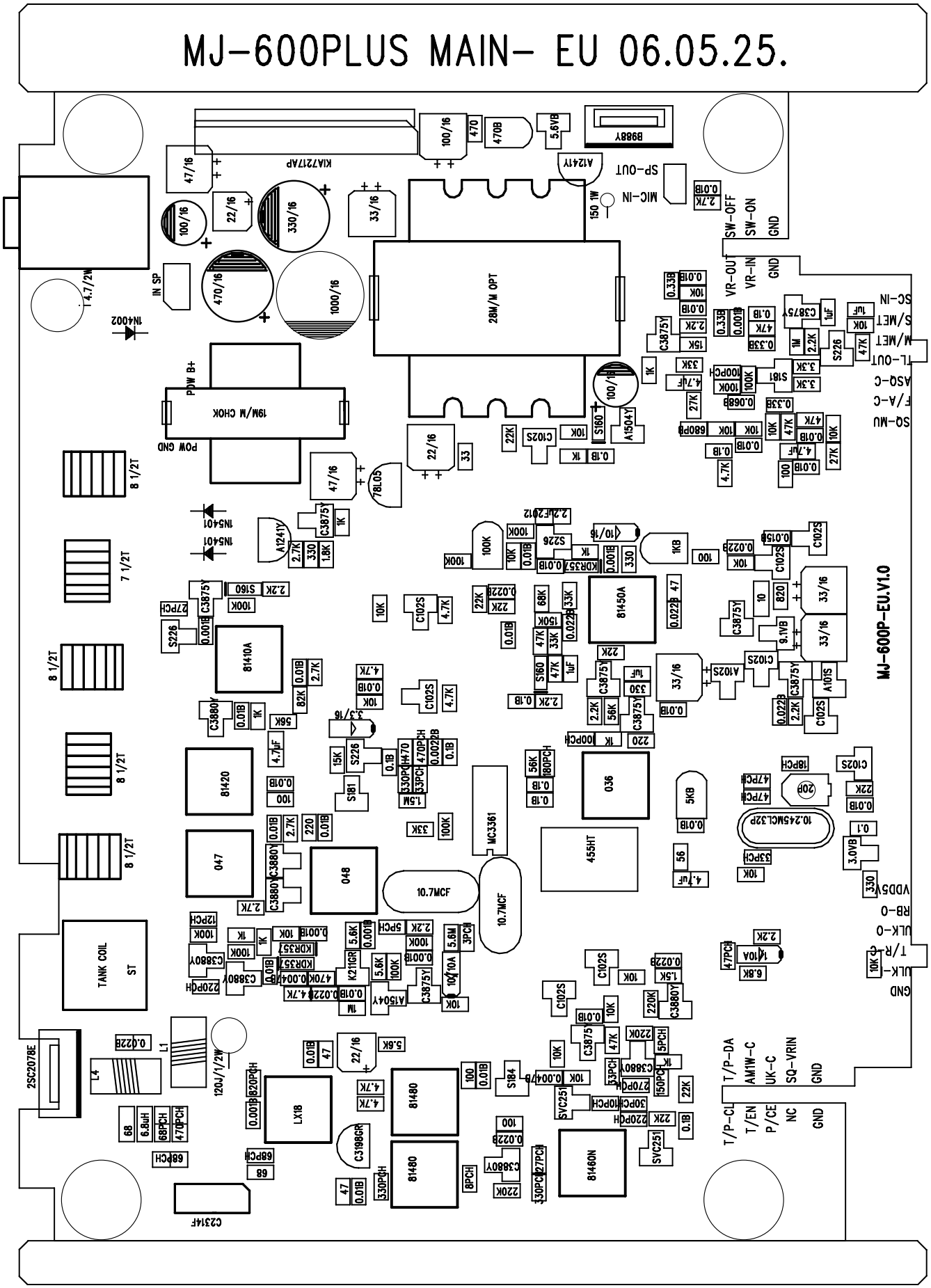
C402
Q406
Q405
R430
D409
R431
C411
C414
CIN1
C409
C413
C410

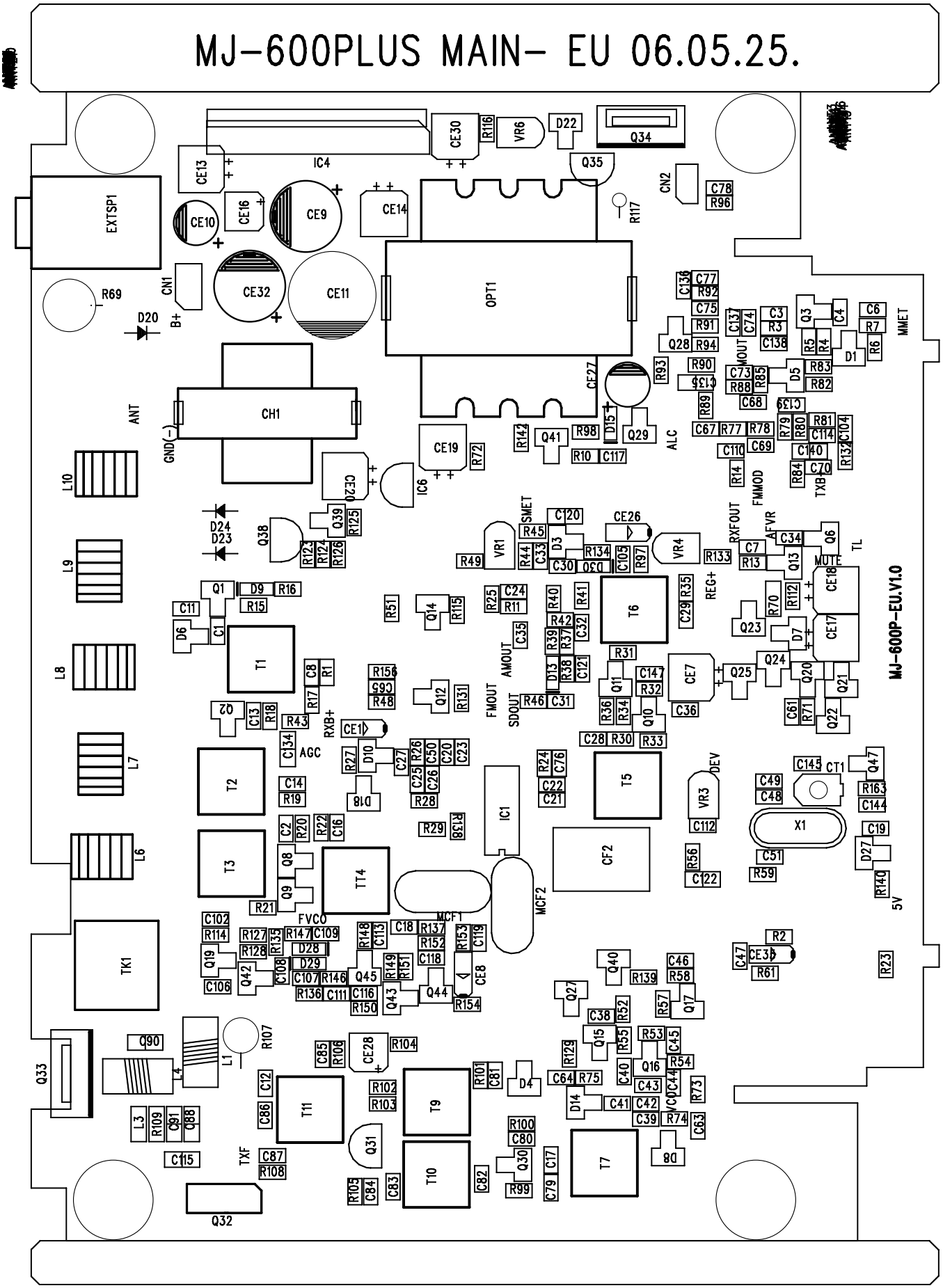

MJ-600PLUS FR FRONT 06.05.15
AFVR 50KA W/SW
SQVR 10KB
2COLOR RED/GREEN
LCD 25P BONA
MIC 8 PIN
CH SW
LED BLUE 1000mcd X 4
TACT 2P X 8


MJ-600PLUS FR FRONT 06.05.15
MIC401
SW402
LD401
SW403
SW404
LD402
SW405
LCD401
SW406
LD403
SW407
SW408
LD404
SW409
LD405

C3875
270
XXX
680
S860
C102S
390
0.1B
100
220PCH
0.001B
10K
0.01B
2.2K
0.022B
68
220PCH
0.33B
10K
1K
0.022B 15K
0.022B
22K
0.022B
33K
5.6K
C102S
0.022B
KIA4558
XXX
XX
XX
4.7K
180PCH
47PCH
270PCH
MC4066
180PCH
7PCH
270PCH
LC7153M&7152M
390PCH
470PCH
100PCH


TP26
R95
Q36
R121
R120
R122
D26
Q37
R119
R118
C54
R63
C53
R67
C58
R65
C57
C56
R64
C55
C146
R66
C72
R86
C71
C59
R68
R87
Q26
C142
IC5
L11
C133
R144
R141
C96
C98
C13
IC2
C130
C15
C95
IC3
C94
C89
C93


MJ-600PLUS MAIN- EU 06.05.25.
MJ-600P-EU.V1.0
SP-OUT
MIC-IN
SW-OFF
SW-ON
GND
VR-OUT
VR-IN
GND
SC-IN
S/MET
M/MET
TL-OUT
ASQ-C
F/A-C
SQ-MU
VDD5V
RB-O
ULK-O
T/R
ULK-
GND
T/P-DA
AM1W-C
UK-C
SQ-VRIN
GND
T/P-CL
T/EN
P/CE
NC
GND
IN SP
PDW B+
PDW GND
19M/M CHOK
28M/M OPT
TANK COIL
ST
81450A
81410A
81420
81480
81460N
LX16
036
047
048
455HT
MC3361
10.7MCF
10.7MCF
10.245MCL32P
5KB
B988Y
A1241Y
A1504Y
78L05
KIA7217AP
2SC2078E
C2314F
IN4002
IN5401
IN5401


MJ-600PLUS MAIN- EU 06.05.25.
MJ-600P-EU.V1.0
EXTSP1
CN1
CN2
OPT1
CH1
ANT
GND(-)
B+
IC4
IC6
IC1
CF2
MCF1
MCF2
X1
CT1
VR1
VR3
VR4
VR6
T1
T2
T3
TT4
T5
T6
T7
T9
T10
T11
TK1
Q1
Q2
Q3
Q4
Q5
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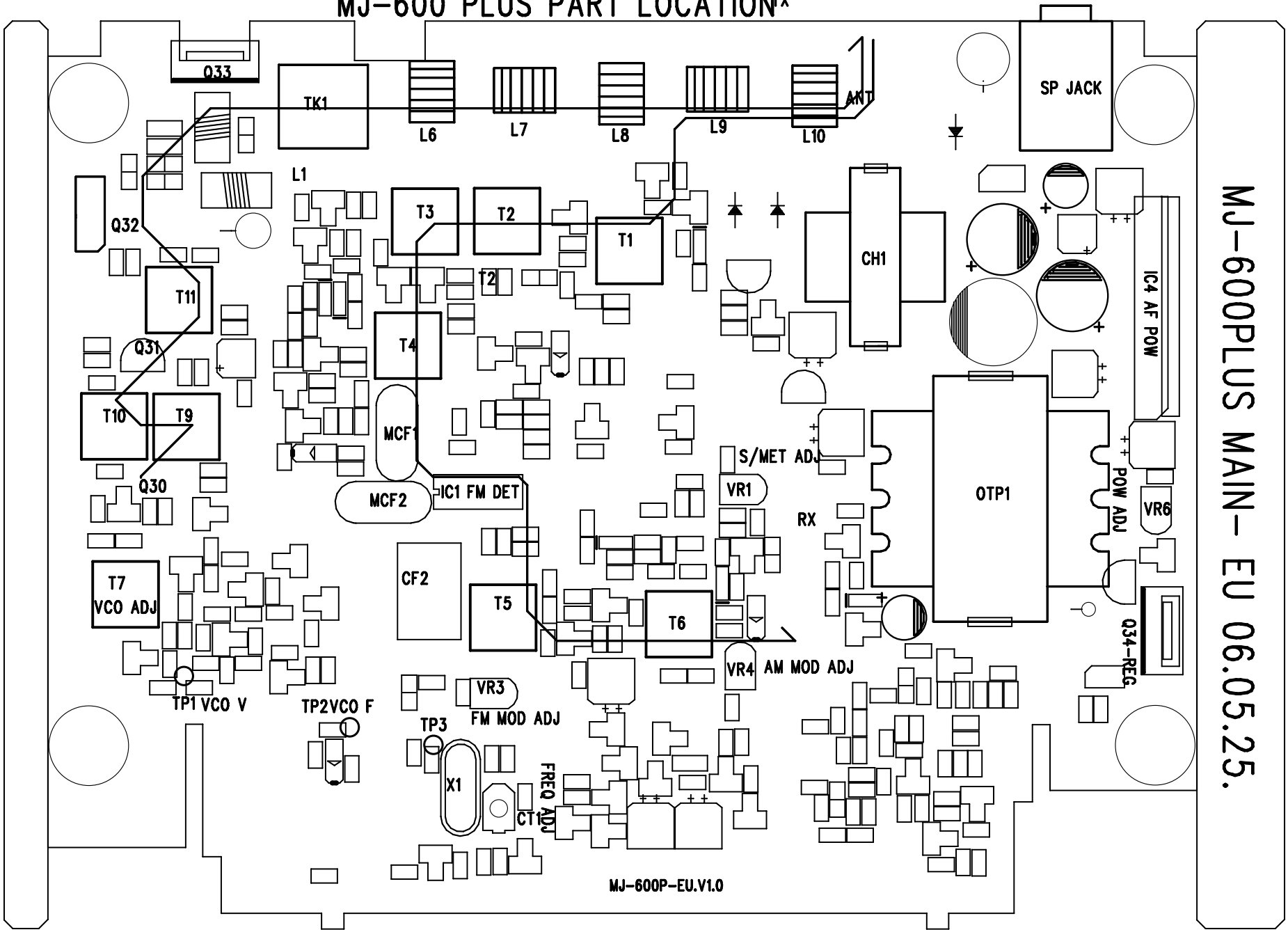
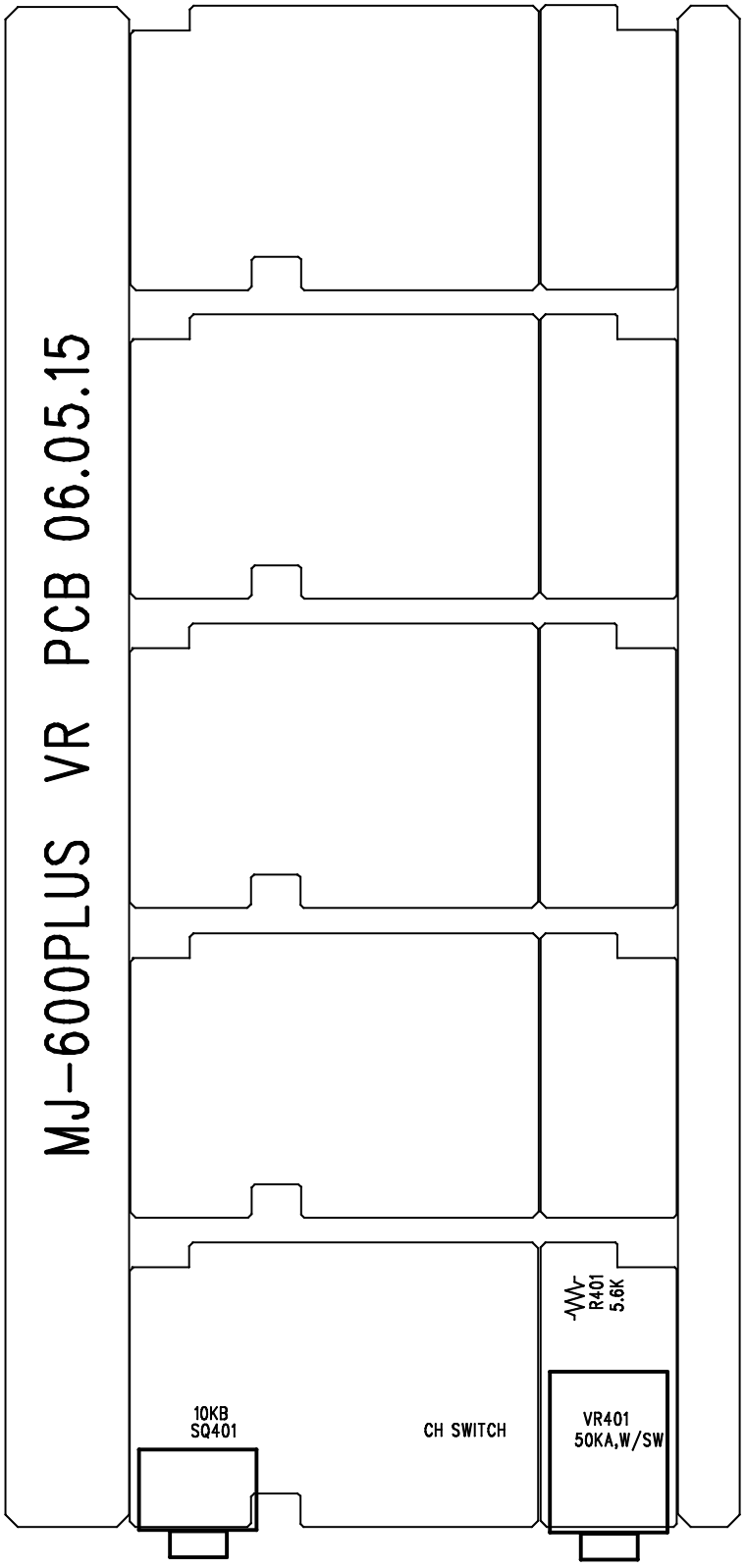
CE9
CE10
CE11
CE13
CE14
CE16
CE17
CE18
CE19
CE20
CE26
CE27
CE28
CE30
CE32
CE35
L1
L3
L4
L6
L7
L8
L9
L10
AGC
AFVR
AMOUT
ALC
DEV
FMOUT
FMMOD
FVCO
MMET
MOUT
MUTE
REG+
RXB+
RXFOUT
SDOUT
SMET
TL
TXB
TXF
VCO
5V

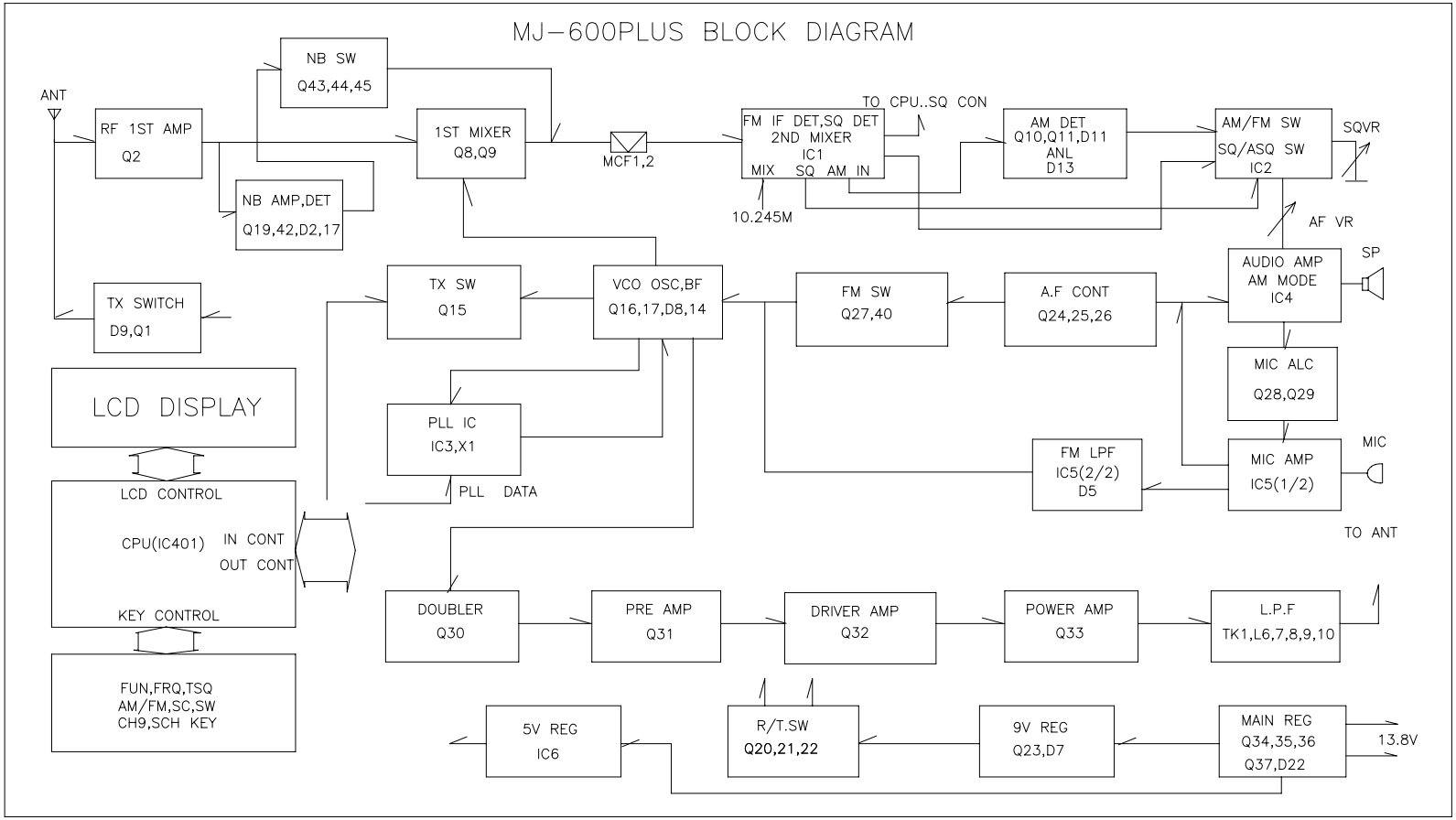
MJ-600 PLUS PART LOCATION TX

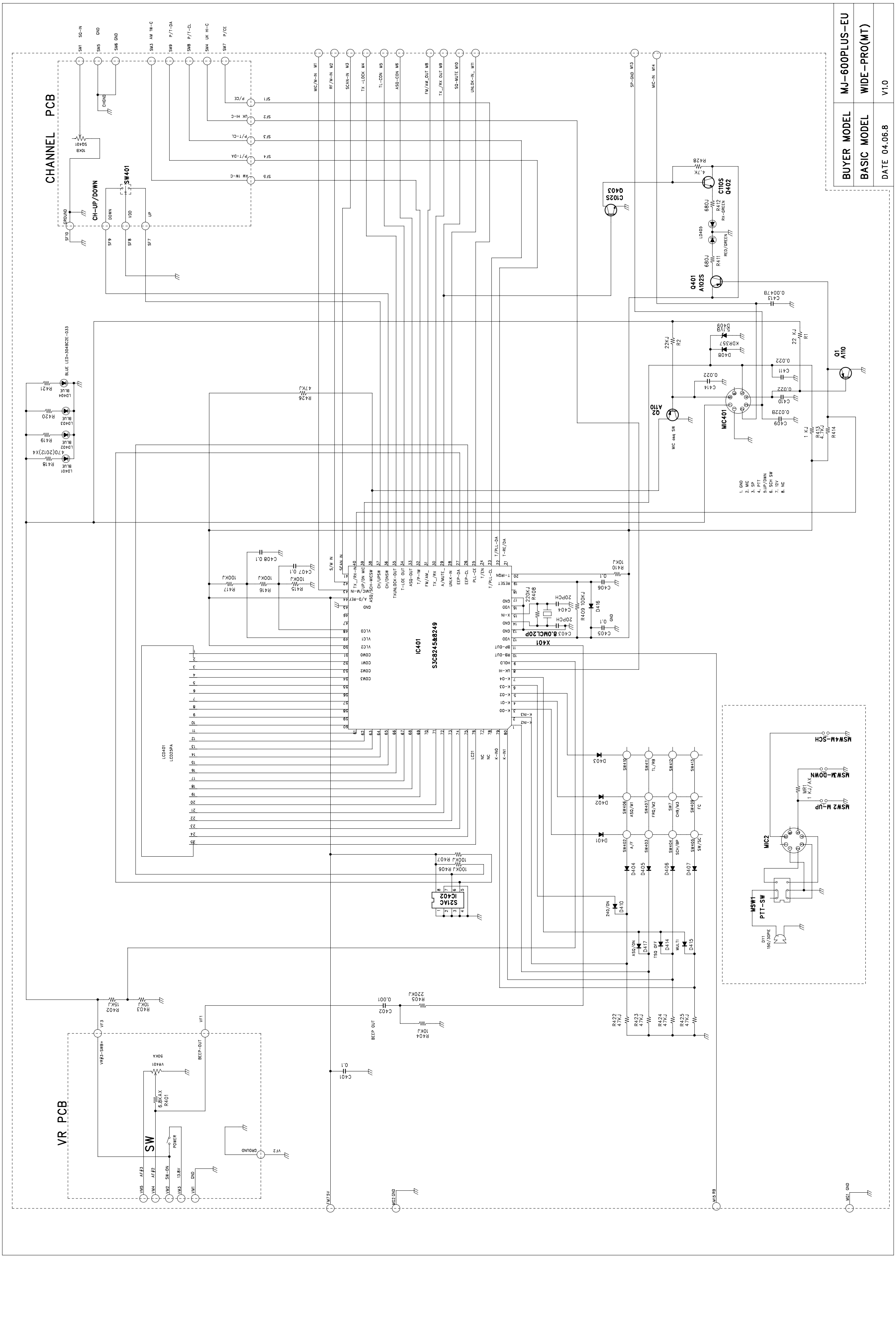


MJ-600PLUS MAIN- EU 06.05.25.

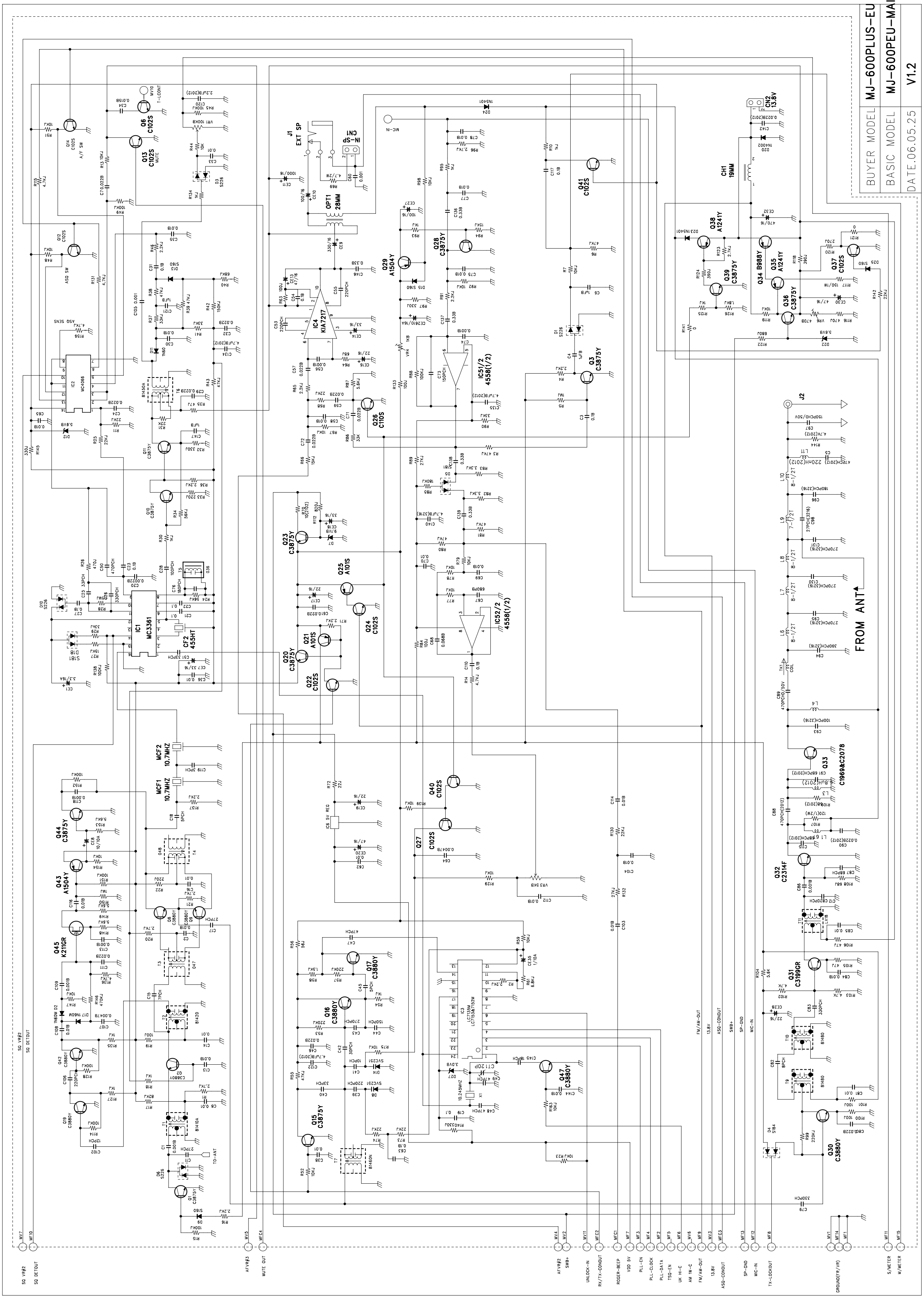

MJ-600PLUS VR PCB 06.05.15
R401
5.6K
10KB
SQ401
CH SWITCH
VR401
50KA,W/SW

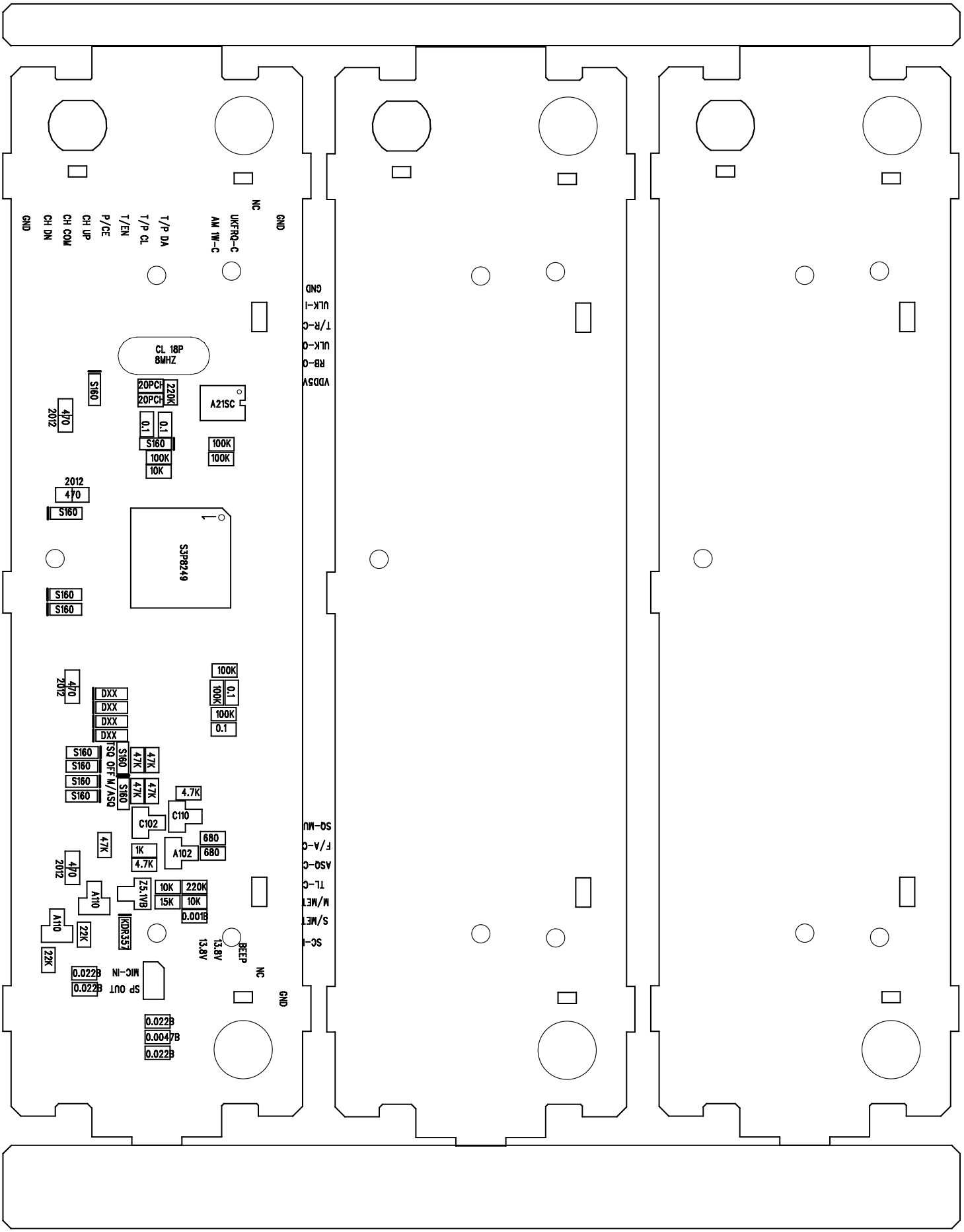
MJ-600PLUS BLOCK DIAGRAM




BUYER MODEL
MJ-600PLUS-EU
BASIC MODEL
WIDE-PRO(MT)
DATE 04.06.8
V1.0
CHANNEL PCB
CH-UP/DOWN
SW401
SO401
10KB
SM1 SQ-IN
SM5 GND
SM6 GND
SM3 AM 1W-C
SM9 P/T-DA
SM8 P/T-CL
SM4 UK HI-C
SM7 P/CE
SF1 P/CE
SF2 UK HI-C
SF3 P/T-CL
SF4 P/T-DA
SF5 AM 1W-C
SF10 GROUND
SF9 DOWN
SF8 VDD
SF7 UP
CHGND
MIC/M-IN M1
RF/M-IN M2
SCAN-IN M3
TX -LOCK M4
TL-CON M5
ASQ-CON M6
FM/AM_OUT M8
TX_/RX OUT M9
SQ-MUTE M10
UNLOK-IN_ M11
SP-GND M13
MIC-IN M14
Q403 C102S
Q402 C110S
R428 4.7K
R412 680J RX-GREEN
LD405
RED/GREEN
R411 680J
Q401 A102S
C413 0.0047B
BLUE LED=304BC2E-033
LD401 BLUE R418
LD402 BLUE R419 470(2012)X4
LD403 BLUE R420
LD404 BLUE R421
R426 47KJ
R2 22KJ
D409 5.1VB
D408 KDR357
R1 22 KJ
Q1 A110
C411 0.022
C414 0.022
C410 0.022
C409 0.022B
Q2 A110
MIC asq SW
MIC401
R413 4.7KJ 1 KJ
R414
1. GND
2. MIC
3. SP
4. PTT
5.UP/DWN
6. SCH SW
7. 12V
8. NC
IC401
S3C8245&8249
C408 0.1
C407 0.1
R417 100KJ
R416 100KJ
R415 100KJ
S/M IN
SCAN_IN
R410 10KJ
C406 0.1
R408 220KJ
C404 20PCH
C403 20PCH
X401 8.0MCL20P
R409 100KJ
D416
C405 0.1
GND
LCD401
LCD25PA
IC402
S21AC
R407 100KJ
R406 100KJ
D403
D402
D401
SW410
SW411 TL/RB
SW412
SW413
SW406 ASQ/M1
SW407 FRQ/M2
SW7 CH9/M3
SW409 FC
SW402 A/F
SW403
SW404 SCH/BP
SW405 SW/SC
D404
D405
D406
D407
D410 240/ON
D417 ASQ/ON
D414 TSQ OFF
D415 MULTI
R422 47KJ
R423 47KJ
R424 47KJ
R425 47KJ
MSW4M-SCH
MSW3M-DOWN
MR1 1 KJ/AX
MSW2 M-UP
MIC2
MSW1
PTT-SW
DY1 150/30PIE
R402 15KJ
R403 10KJ
C402 0.001
R405 220KJ
R404 10KJ
BEEP OUT
C401 0.1
VR PCB
VF3
VR#3-SWB+
VF1
BEEP-OUT
VR401 50KA
R401 6.8KAX
SW
POWER
GROUND
VF2
VM5 AF#3
VM4 AF#2
VM2 SW-ON
VM3 13.8V
VM1 GND
FM7.5V
MG2 GND
M15 RB
MG1 GND

600PMAEU.SCH-1 - Tue May 30 09:19:44 2006




GND
CH DN
CH COM
CH UP
P/CE
T/EN
T/P CL
T/P DA
AM 1W-C
UKFRQ-C
NC
GND
GND
ULK-I
T/R-C
ULK-O
RB-O
VDD5V
CL 18P
8MHZ
20PCI
20PCI
220K
A21SC
S160
470
2012
0.1
0.1
S160
100K
100K
10K
100K
100K
2012
470
S160
S3P8249
S160
S160
100K
0.1
100K
100K
0.1
470
2012
DXX
DXX
DXX
DXX
S160
S160
S160
S160
TSQ OFF W/ASQ
S160
47K
47K
47K
47K
4.7K
C110
C102
47K
1K
4.7K
A102
680
680
470
2012
A110
Z5.1VB
10K
15K
220K
10K
0.001B
A110
KDR357
22K
22K
13.8V
13.8V
BEEP
NC
GND
0.022B
0.022B
MIC-IN
SP OUT
0.022B
0.0047B
0.022B
SQ-MU
F/A-C
ASQ-C
TL-C
M/MET
S/MET
SC-I