President Harry 3 Service Information

General Information:

Config	Channels	Power	Detail
E	40	4W	AM/FM from 26.965MHz to 27.405MHz
d	80	4W	FM from 26.565MHz to 27.405MHz
	40	1W	AM from 26.965MHz to 27.405MHz
EU	40	4W	FM from 26.965MHz to 27.405MHz
	40	1W	AM from 26.965 MHz to 27.405MHz
EC	40	4W	FM from 26.965 MHz to 27.405MHz
U	40	4W	FM CEPT from 26.965MHz to 27.405MHz
	40	4W	FM UK from 27.60125MHz to 27.99125MHz
PL	40	4W	AM/FM from 26.960MHz to 27.400MHz

Channel Steps	10KHz
Emission Class	AM (A3E) and FM (F3E)
Power Input	13.2V (from 10.8V to 15.6V)
Antenna Impedance	50 Ohms
Dimensions	125mm (L) x 45mm (H) x 150mm (D)
Weight	0.7Kg

Transmission:

Frequency allowance	+/- 200Hz
Transmission interference	Inferior to 4n W (-54 dBm)
Audio frequency response	From 300Hz to 3KHz in AM/FM
Emitted power in the adjacent channel	Inferior to 20µW
Microphone sensitivity	Inferior to 10mV
Current drain	1.7A (in transmission mode with modulation)
Modulated signal distortion	Inferior to 2%

Reception:

Maximum sensitivity at 20dB sinad	0.5µV (-113dBm) AM/FM
Audio frequency response	From 300Hz to 3KHz in AM/FM
Adjacent channel selectivity	Superior to 60dB
Frequency image rejection	Superior to 60dB
Intermodulation response	Superior to 54dB
Maximum audio output	3W
Squelch sensitivity	Threshold 0.2µV (-120dBm) / Tight 1mV (-47dBm)
Current drain	300mA nominal / 750mA maximum

Alignment Procedure:

Test equipment required detailed below

Frequency counter 200 MHz	HF Generator
DC Voltmeter	BF Voltmeter
Distortion meter	HF Voltmeter
Watt meter and Dummy load	Oscilloscope
FM linear detector	Load 8 Ohms
AF generator	Sinad meter

Reception

Mode	Level	Frequency	Condition
AM	107 dBm	1KHz	60% of modulation
FM	107 dBm	1KHz	1.2KHz of deviation

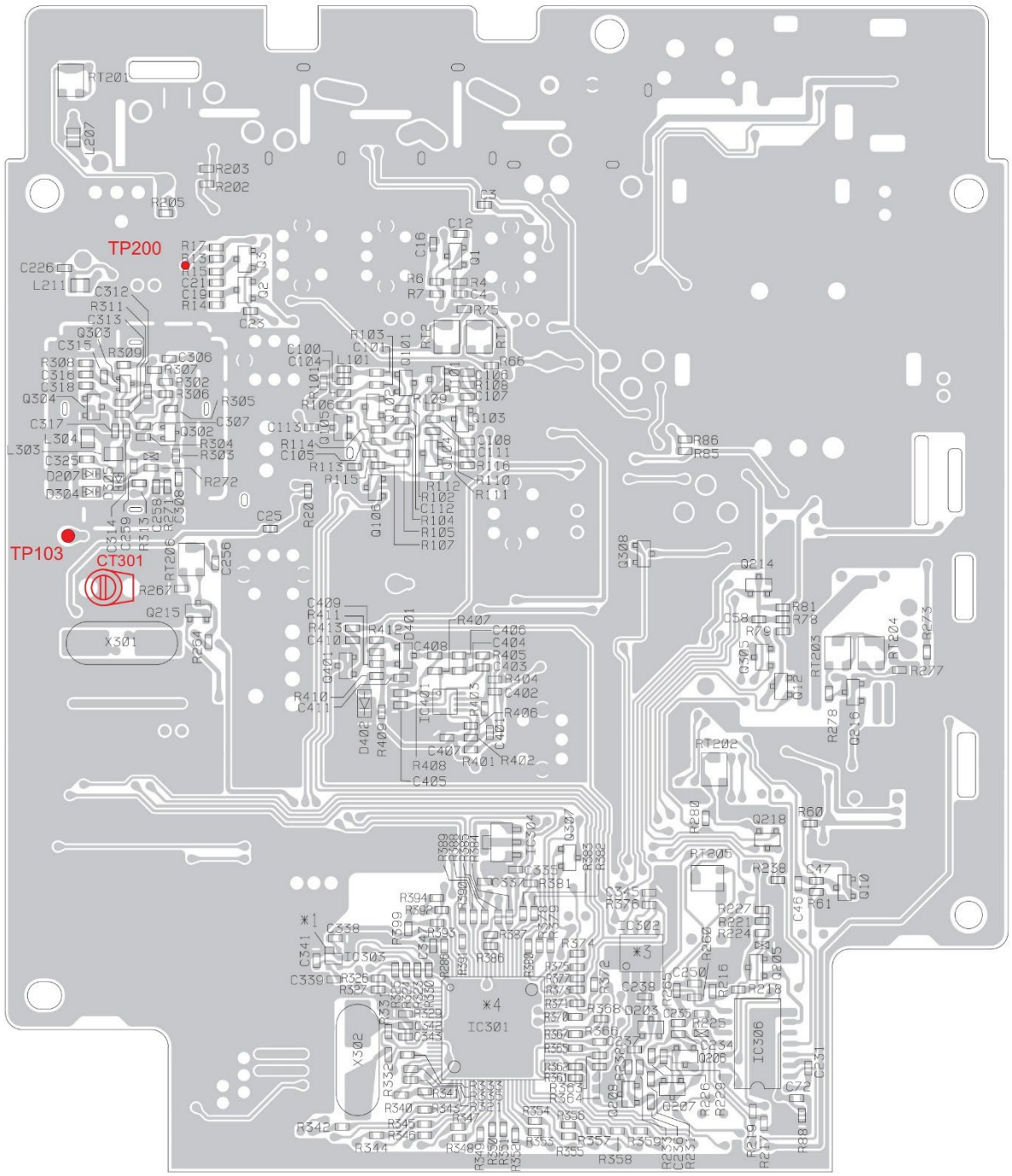
Transmission

Frequency	Condition
1KHz	30mV

Alignment Procedure (13.2V for configuration EU, E and d)

Step	Condition	Mode	Channel	Adjustment	Action
1	AM/FM (EU and E)	RX	20	CT301	Connect a frequency counter to TP200 and adjust CT301 to reach 37.900MHz
2	AM/FM (EU and E)	TX RX	40	-	Connect a voltmeter to TP103 and check for: TX Channel 40 = 3V +/- 0.1V RX Channel 40 = 2.8V +/- 0.1V
3	AM/FM (EU and E)	TX RX	1	-	Connect a voltmeter to TP103 and check for: TX Channel 1 = 2.6V +/- 0.1V RX Channel 1 = 2.4V +/- 0.1V
4	AM/FM (EU and E)	TX RX	1 to 40 Or 1 to 80(d)	-	Connect a frequency counter to TP200 and check frequencies.

Alignment Procedure Diagram



NLK Media

Frequency Lists

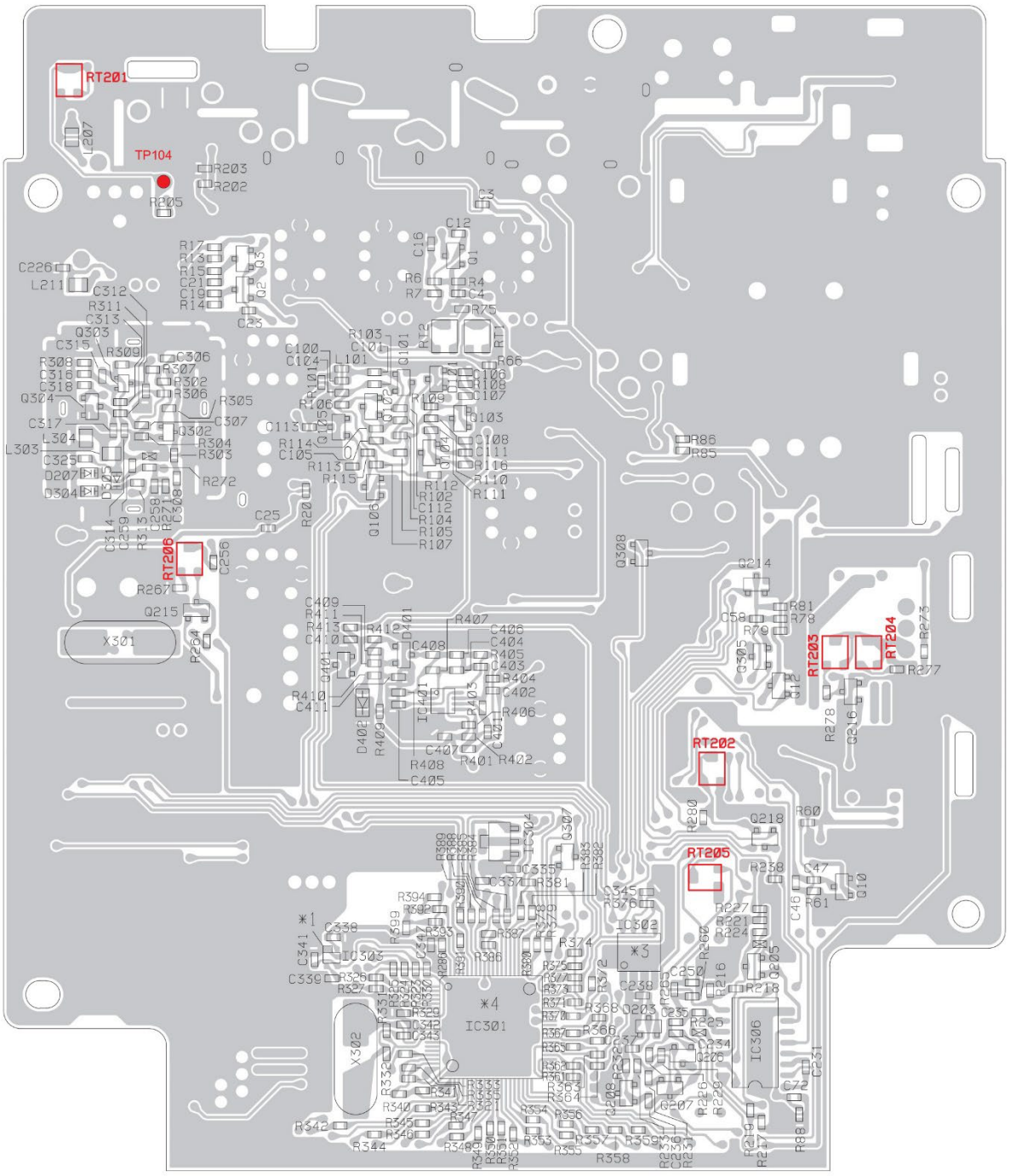
	EU, E, EC		PL		U		U UK	
CH	Freq (MHz)	VCO Freq (MHz)	Freq (MHz)	VCO Freq (MHz)	Freq (MHz)	VCO Freq (MHz)	Freq (MHz)	VCO Freq (MHz)
1	26.965	37.660	26.960	37.655	26.965	37.660	27.60125	38.29625
2	26.975	37.670	26.970	37.665	26.975	37.670	27.61125	38.30625
3	26.985	37.680	26.980	37.675	26.985	37.680	27.62125	38.31625
4	27.005	37.700	27.000	37.695	27.005	37.700	27.63125	38.32625
5	27.015	37.710	27.010	37.705	27.015	37.710	27.64125	38.33625
6	27.025	37.720	27.020	37.715	27.025	37.720	27.65125	38.34625
7	27.035	37.730	27.030	37.725	27.035	37.730	27.66125	38.35625
8	27.055	37.750	27.050	37.745	27.055	37.750	27.67125	38.36625
9	27.065	37.760	27.060	37.755	27.065	37.760	27.68125	38.37625
10	27.075	37.770	27.070	37.765	27.075	37.770	27.69125	38.38625
11	27.085	37.780	27.080	37.775	27.085	37.780	27.70125	38.39625
12	27.105	37.800	27.100	37.795	27.105	37.800	27.71125	38.40625
13	27.115	37.810	27.110	37.805	27.115	37.810	27.72125	38.41625
14	27.125	37.820	27.120	37.815	27.125	37.820	27.73125	38.42625
15	27.135	37.830	27.130	37.825	27.135	37.830	27.74125	38.43625
16	27.155	37.850	27.150	37.845	27.155	37.850	27.75125	38.44625
17	27.165	37.860	27.160	37.855	27.165	37.860	27.76125	38.45625
18	27.175	37.870	27.170	37.865	27.175	37.870	27.77125	38.46625
19	27.185	37.880	27.180	37.875	27.185	37.880	27.78125	38.47625
20	27.205	37.900	27.200	37.895	27.205	37.900	27.79125	38.48625
21	27.215	37.910	27.210	37.905	27.215	37.910	27.80125	38.49625
22	27.225	37.930	27.220	37.915	27.225	37.930	27.81125	38.50625
23	27.255	37.950	27.250	37.945	27.255	37.950	27.82125	38.51625
24	27.235	37.930	27.230	37.925	27.235	37.930	27.83125	38.52625
25	27.245	37.940	27.240	37.935	27.245	37.940	27.84125	38.53625
26	27.265	37.960	27.260	37.955	27.265	37.960	27.85125	38.54625
27	27.275	37.970	27.270	37.965	27.275	37.970	27.86125	38.55625
28	27.285	37.980	27.280	37.975	27.285	37.980	27.87125	38.56625
29	27.295	37.990	27.290	37.985	27.295	37.990	27.88125	38.57625
30	27.305	38.000	27.300	37.995	27.305	38.000	27.89125	38.58625
31	27.315	38.010	27.310	38.005	27.315	38.010	27.90125	38.59625
32	27.325	38.020	27.320	38.015	27.325	38.020	27.91125	38.60625
33	27.335	38.030	27.330	38.025	27.335	38.030	27.92125	38.61625
34	27.345	38.040	27.340	38.035	27.345	38.040	27.93125	38.62625
35	27.355	38.050	27.350	38.045	27.355	38.050	27.94125	38.63625
36	27.365	38.060	27.360	38.055	27.365	38.060	27.95125	38.64625
37	27.375	38.070	27.370	38.065	27.375	38.070	27.96125	38.65625
38	27.385	38.080	27.380	38.075	27.385	38.080	27.97125	38.66625
39	27.395	38.090	27.390	38.085	27.395	38.090	27.98125	38.67625
40	27.405	38.100	27.400	38.095	27.405	38.100	27.99125	38.68625

	d				
CH	**Freq (MHz)**	**VCO Freq (MHz)**	**CH**	**Freq (MHz)**	**VCO Freq (MHz)**
1	26.965	37.660	41	26.565	37.260
2	26.975	37.670	42	26.575	37.270
3	26.985	37.680	43	26.585	37.280
4	27.005	37.70	44	26.595	37.290
5	27.015	37.710	45	26.605	37.300
6	27.025	37.720	46	26.615	37.310
7	27.035	37.730	47	26.625	37.320
8	27.055	37.750	48	26.635	37.330
9	27.065	37.760	49	26.645	37.340
10	27.075	37.770	50	26.655	37.350
11	27.085	37.780	51	26.665	37.360
12	27.105	37.800	52	26.675	37.370
13	27.115	37.810	53	26.685	37.380
14	27.125	37.820	54	26.695	37.390
15	27.135	37.830	55	26.705	37.400
16	27.155	37.850	56	26.715	37.410
17	27.165	37.860	57	26.725	37.420
18	27.175	37.870	58	26.735	37.430
19	27.185	37.880	59	26.745	37.440
20	27.205	37.900	60	26.755	37.450
21	27.215	37.910	61	26.765	37.460
22	27.225	37.930	62	26.775	37.470
23	27.255	37.950	63	26.785	37.480
24	27.235	37.930	64	26.795	37.490
25	27.245	37.940	65	26.805	37.500
26	27.265	37.960	66	26.815	37.510
27	27.275	37.970	67	26.825	37.520
28	27.285	37.980	68	26.835	37.530
29	27.295	37.990	69	26.845	37.540
30	27.305	38.000	70	26.855	37.550
31	27.315	38.010	71	26.865	37.560
32	27.325	38.020	72	26.875	37.570
33	27.335	38.030	73	26.885	37.580
34	27.345	38.040	74	26.895	37.590
35	27.355	38.050	75	26.905	37.600
36	27.365	38.060	76	26.915	37.610
37	27.375	38.070	77	26.925	37.620
38	27.385	38.080	78	26.935	37.630
39	27.395	38.090	79	26.945	37.640
40	27.405	38.100	80	26.955	37.650

Transmitter Alignment Procedure (13.2V for configuration EU, E and d)

Step	Condition	Mode	Channel	Adjustment	Action
1	AM/FM (E)	TX	20	RT201	Connect a wattmeter to jack antenna and adjust RT201 to reach 5V +/- 0.2V on the DC voltmeter connected to TP104
2	AM (EU)	TX	20	RT203	Connect a wattmeter to jack antenna and adjust RT203 to reach 1W on the wattmeter
3	AM (E)	TX	20	RT204	Connect a wattmeter to jack antenna and adjust RT204 to reach 4W on the wattmeter
4	AM (EU)	TX	20		Connect a dummy load to jack antenna and check that the RF meter displays S1
5	AM (E)	TX	20		Connect a dummy load to jack antenna and check that the RF meter displays S9
6	FM (EU) Mod 30mV 1KHz	TX	20	RT206	Adjust RT206 to reach +/- 1.2KHz of deviation.
7	AM (E) Mod 30mV 1KHz	TX	20	RT202 RT205	First adjust RT202 and RT205 to the maximum of modulation and then adjust RT205 to reach +/- 90% of modulation, then adjust RT202 to reach +/- 85% of modulation

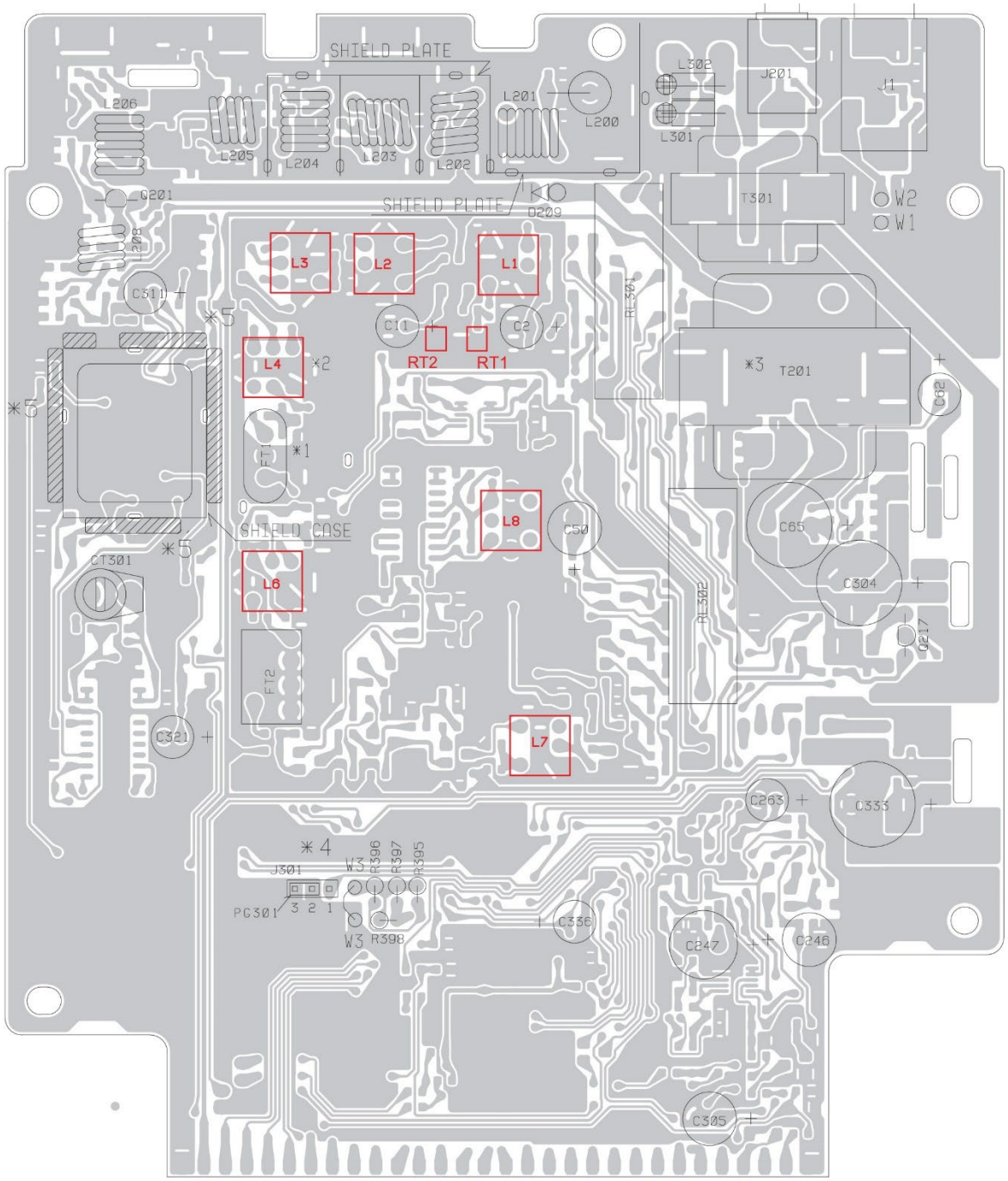
Transmitter Alignment Diagram



Receiver Alignment Procedure (13.2V for configuration EU, E and d)

Step	Condition	Mode	Channel	Adjustment	Action
1	AM (EU, E) Middle volume level and no squelch active	-	20	L1-L2-L3 L4-L6-L7	Connect HF generator to jack antenna and adjust at (-107dBm 1KHz 60%), connect sinad meter to jack EXT speaker and adjust coils for maximum sensitivity (≥ 20dB sinad)
2	FM (EU, E) Middle volume level and no squelch active	-	20	L8	Connect HF generator to jack antenna and adjust at (-107dBm 1KHz 1.2KHz Deviation), connect sinad meter to jack EXT speaker and adjust L8 for maximum sensitivity (≥ 20dB sinad)
3	AM (EU, E) Middle volume level and no squelch active	-	20	RT1 (S-Meter)	Connect HF generator to jack antenna and adjust at (-67dBm 1KHz 60%), Adjust RT1 so that the S Meter displays S9
4	AM (EU, E) Middle volume level and squelch maximum clockwise	-	20	RT2 (SQ)	Connect HF generator to jack antenna and adjust at (-47dBm 1KHz 60%), Adjust RT2 so that the signal is audible
5	AM (EU, E) Middle volume level and squelch maximum counter clockwise (ASC)	-	20		Connect HF generator to jack antenna. Connect sinad meter to jack EXT speaker, adjust the output level of HF generator and check that the opening ASC sinad is 20dB +/- 2dB

Receiver Alignment Diagram



Disclaimer

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