

RECEIVER MODULE ATO4880/-
ALL VARIANTS

CRYSTAL INFORMATION

All frequency variants, ATO4880/02-07, 12-17, 22-27, use an 8,4Mhz crystal to Philips specification YE00923.

SPECIFICATION

Bands	A9 146-174MHz T1 405-440MHz BO 132-156MHz UO 440-470MHz EO 66-88MHz WM 470-520MHz
Channel Spacing	12,5kHz (/02-07) 25kHz (/12-17) 20kHz (/22-27)
Input Impedance	50Ω nominal
Maximum RF input level	2V from 50Ω source
Number of Channels	Up to 128
Audio Response *	300 Hz to 3kHz +1 -3dB rel to level at 1kHz and 6dB/oct de-emphasis
Distortion	Less than 2,5% (60% deviation at 1kHz)
Signal/Noise ratio	Greater than 46dB at 1mV RF input measured de-emphasised, psophometric.
Line O/P impedance *	600Ω balanced
Supply Input	18V ±0,5V at 0,5A max.
Line O/P level *	4-Wire -37 to +47dBm (for 60% deviation at 1kHz) adjustable 2-Wire (remote) -16 to 0dBm (for 60% deviation at 1kHz) adjustable <i>Note: On 2-Wire system, O/P level should be within 6dB of TX input level</i>
Unprocessed RX Audio O/P level	300mV into 10k (for 60% deviation at 1kHz) not de-emphasised

* measured via control unit

INTERNAL MODULE INDICATIONS

Lock fail Indicates that the synthesizer is unlocked.

RECEIVER TEST FREQUENCIES.

Note: For access to these test frequencies, refer to the alignment procedure for the relevant unit.

TABLE 1 (Part)

Channel	Switch position							'Test freq'	'Test freq'	'Test freq'
	10	11	12	13	14	15	16	MHz U, T, W Bands	MHz A, B Bands	MHz E Band
0	0	0	0	0	0	0	0	400	132	68
1	0	0	0	0	0	0	1	401	132, 335	68, 2
2	0	0	0	0	0	1	0	402	132, 67	68, 4
3	0	0	0	0	0	1	1	403	133, 005	68, 6
4	0	0	0	0	1	0	0	404	133, 34	68, 8
5	0	0	0	0	1	0	1	405	133, 675	69
6	0	0	0	0	1	1	0	406	134, 01	69, 2
7	0	0	0	0	1	1	1	407	134, 345	69, 4
8	0	0	0	1	0	0	0	408	134, 68	69, 6
9	0	0	0	1	0	0	1	409	135, 015	69, 8
10	0	0	0	1	0	1	0	410	135, 35	70
11	0	0	0	1	0	1	1	411	135, 685	70, 2
12	0	0	0	1	1	0	0	412	136, 02	70, 4
13	0	0	0	1	1	0	1	413	136, 355	70, 6
14	0	0	0	1	1	1	0	414	136, 69	70, 8
15	0	0	0	1	1	1	1	415	137, 025	71
16	0	0	1	0	0	0	0	416	137, 36	71, 2
17	0	0	1	0	0	0	1	417	137, 695	71, 4
18	0	0	1	0	0	1	0	418	138, 03	71, 6
19	0	0	1	0	0	1	1	419	138, 365	71, 8
20	0	0	1	0	1	0	0	420	138, 7	72
21	0	0	1	0	1	0	1	421	139, 035	72, 2
22	0	0	1	0	1	1	0	422	139, 37	72, 4
23	0	0	1	0	1	1	1	423	139, 705	72, 6
24	0	0	1	1	0	0	0	424	140, 04	72, 8
25	0	0	1	1	0	0	1	425	140, 375	73
26	0	0	1	1	0	1	0	426	140, 71	73, 2
27	0	0	1	1	0	1	1	427	141, 045	73, 4
28	0	0	1	1	1	0	0	428	141, 38	73, 6
29	0	0	1	1	1	0	1	429	141, 715	73, 8
30	0	0	1	1	1	1	0	430	142, 05	74
31	0	0	1	1	1	1	1	431	142, 385	74, 2
32	0	1	0	0	0	0	0	432	142, 72	74, 4
33	0	1	0	0	0	0	1	433	143, 055	74, 6
34	0	1	0	0	0	1	0	434	143, 39	74, 8
35	0	1	0	0	0	1	1	435	143, 725	75
36	0	1	0	0	1	0	0	436	144, 06	75, 2
37	0	1	0	0	1	0	1	437	144, 395	75, 4
38	0	1	0	0	1	1	0	438	144, 73	75, 6
39	0	1	0	0	1	1	1	439	145, 065	75, 8
40	0	1	0	1	0	0	0	440	145, 4	76
41	0	1	0	1	0	0	1	441	145, 735	76, 2
42	0	1	0	1	0	1	0	442	146, 07	76, 4
43	0	1	0	1	0	1	1	443	146, 405	76, 6
44	0	1	0	1	1	0	0	444	146, 74	76, 8
45	0	1	0	1	1	0	1	445	147, 075	77
46	0	1	0	1	1	1	0	446	147, 41	77, 2
47	0	1	0	1	1	1	1	447	147, 745	77, 4

TABLE 1 (Cont'd)

Channel	Switch position							'Test freq'	'Test freq'	'Test freq'
	10	11	12	13	14	15	16	MHz U, T, W Bands	MHz A, B Bands	MHz E Band
48	0	1	1	0	0	0	0	448	148,08	77,6
49	0	1	1	0	0	0	1	449	148,415	77,8
50	0	1	1	0	0	1	0	450	148,75	78
51	0	1	1	0	0	1	1	451	149,085	78,2
52	0	1	1	0	1	0	0	452	149,42	78,4
53	0	1	1	0	1	0	1	453	149,755	78,6
54	0	1	1	0	1	1	0	454	150,09	78,8
55	0	1	1	0	1	1	1	455	150,425	79
56	0	1	1	1	0	0	0	456	150,76	79,2
57	0	1	1	1	0	0	1	457	151,095	79,4
58	0	1	1	1	0	1	0	458	151,43	79,6
59	0	1	1	1	0	1	1	459	151,765	79,8
60	0	1	1	1	1	0	0	460	152,1	80
61	0	1	1	1	1	0	1	461	152,435	80,2
62	0	1	1	1	1	1	0	462	152,77	80,4
63	0	1	1	1	1	1	1	463	153,105	80,6
64	1	0	0	0	0	0	0	464	153,44	80,8
65	1	0	0	0	0	0	1	465	153,775	81
66	1	0	0	0	0	1	0	466	154,11	81,2
67	1	0	0	0	0	1	1	467	154,445	81,4
68	1	0	0	0	1	0	0	468	154,78	81,6
69	1	0	0	0	1	0	1	469	155,115	81,8
70	1	0	0	0	1	1	0	470	155,45	82
71	1	0	0	0	1	1	1	471	155,785	82,2
72	1	0	0	1	0	0	0	472	156,12	82,4
73	1	0	0	1	0	0	1	473	156,455	82,6
74	1	0	0	1	0	1	0	474	156,79	82,8
75	1	0	0	1	0	1	1	475	157,125	83
76	1	0	0	1	1	0	0	476	157,46	83,2
77	1	0	0	1	1	0	1	477	157,795	83,4
78	1	0	0	1	1	1	0	478	158,13	83,6
79	1	0	0	1	1	1	1	479	158,465	83,8
80	1	0	1	0	0	0	0	480	158,8	84
81	1	0	1	0	0	0	1	481	159,135	84,2
82	1	0	1	0	0	1	0	482	159,47	84,4
83	1	0	1	0	0	1	1	483	159,805	84,6
84	1	0	1	0	1	0	0	484	160,14	84,8
85	1	0	1	0	1	0	1	485	160,475	85
86	1	0	1	0	1	1	0	486	160,81	85,2
87	1	0	1	0	1	1	1	487	161,145	85,4
88	1	0	1	1	0	0	0	488	161,48	85,6
89	1	0	1	1	0	0	1	489	161,815	85,8
90	1	0	1	1	0	1	0	490	162,15	86
91	1	0	1	1	0	1	1	491	162,485	86,2
92	1	0	1	1	1	0	0	492	162,82	86,4
93	1	0	1	1	1	0	1	493	163,155	86,6
94	1	0	1	1	1	1	0	494	163,49	86,8
95	1	0	1	1	1	1	1	495	163,825	87
96	1	1	0	0	0	0	0	496	164,16	87,2
97	1	1	0	0	0	0	1	497	164,495	87,4
98	1	1	0	0	0	1	0	498	164,83	87,6
99	1	1	0	0	0	1	1	499	165,165	87,8

TABLE 1 (Cont'd)

Channel	Switch position							'Test freq'	'Test freq'	'Test freq'
	10	11	12	13	14	15	16	MHz U, T, W Bands	MHz A, B Bands	MHz E Band
100	1	1	0	0	1	0	0	500	165,5	88
101	1	1	0	0	1	0	1	501	165,835	
102	1	1	0	0	1	1	0	502	166,17	
103	1	1	0	0	1	1	1	503	166,505	
104	1	1	0	1	0	0	0	504	166,84	
105	1	1	0	1	0	0	1	505	167,175	
106	1	1	0	1	0	1	0	506	167,51	
107	1	1	0	1	0	1	1	507	167,84	
108	1	1	0	1	1	0	0	508	168,18	
109	1	1	0	1	1	0	1	509	168,515	
110	1	1	0	1	1	1	0	510	168,85	
111	1	1	0	1	1	1	1	511	169,185	
112	1	1	1	0	0	0	0	512	169,52	
113	1	1	1	0	0	0	1	513	169,855	
114	1	1	1	0	0	1	0	514	170,19	
115	1	1	1	0	0	1	1	515	170,525	
116	1	1	1	0	1	0	0	516	170,86	
117	1	1	1	0	1	0	1	517	171,195	
118	1	1	1	0	1	1	0	518	171,53	
119	1	1	1	0	1	1	1	519	171,865	
120	1	1	1	1	0	0	0	520	172,2	
121	1	1	1	1	0	0	1		172,535	
122	1	1	1	1	0	1	0		172,87	
123	1	1	1	1	0	1	1		173,205	
124	1	1	1	1	1	0	0		173,54	
125	1	1	1	1	1	0	1		173,875	
126	1	1	1	1	1	1	0		174	
127	1	1	1	1	1	1	1		156	

RX MODULE SYNTHESIZED

AT04880/02	A9	BAND	12,5KHZ	CHANNEL	SPACING
AT04880/03	B0	BAND	12,5KHZ	CHANNEL	SPACING
AT04880/04	E0	BAND	12,5KHZ	CHANNEL	SPACING
AT04880/05	T1	BAND	12,5KHZ	CHANNEL	SPACING
AT04880/06	U0	BAND	12,5KHZ	CHANNEL	SPACING
AT04880/07	WM	BAND	12,5KHZ	CHANNEL	SPACING
AT04880/12	A9	BAND	25KHZ	CHANNEL	SPACING
AT04880/13	B0	BAND	25KHZ	CHANNEL	SPACING
AT04880/14	E0	BAND	25KHZ	CHANNEL	SPACING
AT04880/15	T1	BAND	20/25KHZ	CHANNEL	SPACING
AT04880/16	U0	BAND	20/25KHZ	CHANNEL	SPACING
AT04880/17	WM	BAND	20/25KHZ	CHANNEL	SPACING
AT04880/22	A9	BAND	20KHZ	CHANNEL	SPACING
AT04880/23	B0	BAND	20KHZ	CHANNEL	SPACING
AT04880/24	E0	BAND	20KHZ	CHANNEL	SPACING

Cct Ref	Description	Part No	Remarks
	PCB Assembly Rx UHF	AT29076/-	See Separate Headed List
	PCB Assembly Rx VHF	AT29081/-	See Separate Headed List
	PCB Assembly Rx VHF	AT29084/-	See Separate Headed List
	Box RF sealed	BT36126	/02-04,12-14,22-24
	Cover Plate Rear	BT15913	
	Front Panel Assy Rx	AT14817	
	Housing modified	4313 328 30151	/05-07,15-17
	Label Alignment Frequency	BT38238	
	Label Unit	BT38209/01	
	Lid	3513 903 20181	/02-04,12-14,22-24
	Lid Assembly	3513 504 03911	/05-07,15-17
	Seal RF	BT29999	
	Pillar micro M2,5	2513 719 06001	/05-07,15-17; 4/Box-PCB
	Nut st hex M2,5	QA11604/X	/05-07,15-17; 4/micro-pillars
	Scr st pan pozi M2,5 x 8mm	QJ11946/X	
	Scr st csk pozi M2,5 x 5mm	QJ11600/B	/05-07,15-17; 4/micro-pillars
	Scr st tap pan M3 x 6mm	QJ11550/X1	
	Scr st tap pan M3 x 8mm	QJ11551/X1	
	Scr st tap pozi No.4 x 4,5mm	QJ08219/X	
	Washer M3	3913 080 50220	/05-07,15-17; 4/micro-pillars

FRONT PANEL ASSEMBLY RX
AT14817

Fastener	BT17284	2/Rx-shelf
Handle	BT35949	
Label, Philips	BT38216/01	1/handle
Label, Rx	BT38205/01	1/handle
Panel Front	BT23740	
Scr st tap pozi No.4 x 8mm	QJ08241/X	2/handle-front panel

PCB ASSEMBLY RX UHF

AT29076/05	T1	Band	12,5kHz	channel	spacing
AT29076/06	U0	Band	12,5kHz	channel	spacing
AT29076/07	WM	Band	12,5kHz	channel	spacing
AT29076/15	T1	Band	20/25kHz	channel	spacing
AT29076/16	U0	Band	20/25kHz	channel	spacing
AT29076/17	WM	Band	20/25kHz	channel	spacing

Semiconductors & ICs

IC1	IC LM258	SMD	3513 999 45008
IC2	Mixer rms1	SMD	2722 162 90133
IC3	IC 7805 Volt reg & fix		3513 993 34014
IC4	IC SA602D	SMD	9337 488 50605
IC5	IC SA604AD	SMD	9339 489 30623
IC6	IC LM324-HDL	SMD	3513 999 45005
IC7	IC LM317		FU99119
IC8	IC LS204	SMD	3513 999 45011
IC9	IC SP8703 Prescaler		9339 208 20682
IC10	IC 7805 Volt reg & fix		3513 993 34014
IC11	IC NJ8820	SMD	4313 324 70001
IC12	EPLD assy programmed		AT60170
IC13	PROM assy programmed		AT60171
IC14	IC LM348D	SMD	3513 999 45003
IC15	IC LM258	SMD	3513 999 45008
TR1	Transistor NE41137		3513 990 00008
TR2	Transistor ON977/TI	SMD	3513 999 05007
TR3	Transistor BFR93	SMD	3513 999 00027
TR4	Transistor MMBFU310	SMD	3513 999 05009
TR5,6	Transistor ON977/TI	SMD	3513 999 05007

Cct Ref	Description	Part No	Remarks
Semiconductors & ICs (Cont'd)			
TR7,8	Transistor BCX19	3513 999 00016	
TR9	Transistor BFR93 SMD	3513 999 00027	
TR10,11	Transistor BCX19	3513 999 00016	
D1	Diode BB405B	9333 182 80113	
D2	Diode BB405B	9333 182 80113	/05,06,15,16
D3	Diode BB405B	9333 182 80113	
D4,5	Diode BB405B	9333 182 80113	/05,06,15,16
D6,7	Diode BB405B	9333 182 80113	
D8	Diode BB405B	9333 182 80113	/05,06,15,16
D9	Diode BB405B	9333 182 80113	
D10	Diode BB405B	9333 182 80113	/05,06,15,16
D11	Diode BB405B	9333 182 80113	
D12	Diode BB405B	9333 182 80113	/05,06,15,16
D13	Diode BB405B	9333 182 80113	
D14,15	Diode BB405B	9333 182 80113	/05,06,15,16
D16,17	Diode BB405B	9333 182 80113	
D18,19	Diode BB405B	9333 182 80113	/05,06,15,16
D20,21	Diode BB405B	9333 182 80113	
D22,23	Diode BB405B	9333 182 80113	/05,06,15,16
D24	Diode BB405B	9333 182 80113	
D25	Diode BAV99 SMD	3513 999 15002	
D26	Diode 1T32 Varactor SMD	3508 100 10300	
D27	Diode BAV99 SMD	3513 999 15002	

Resistors

R1-4	100k ±5%	0,125W SMD	3513 999 80060	
R5	47 ±5%	0,125W SMD	3513 999 80020	
R6	3k9 ±5%	0,125W SMD	3513 999 80043	
R7	1k ±5%	0,125W SMD	3513 999 80036	
R8	330 ±5%	0,125W SMD	3513 999 80030	
R9	150 ±5%	0,125W SMD	3513 999 80026	
R10-17	100k ±5%	0,125W SMD	3513 999 80060	
R18	22 ±5%	0,125W SMD	3513 999 80016	
R19	150 ±5%	0,125W SMD	3513 999 80026	
R20	22 ±5%	0,125W SMD	3513 999 80016	
R21	47 ±5%	0,125W SMD	3513 999 80020	
R22	10k ±5%	0,125W SMD	3513 999 80048	
R23	68k ±5%	0,125W SMD	3513 999 80058	
R24	220 ±5%	0,125W SMD	3513 999 80028	
R25	47k ±5%	0,125W SMD	3513 999 80056	
R26	1k8 ±5%	0,125W SMD	3513 999 80039	
R27	2k2 ±5%	0,25W c film	3513 992 00188	/05,06,07
R28	47 ±5%	0,125W SMD	3513 999 80020	
R29	4k7 ±5%	0,125W SMD	3513 999 80044	
R30	100k ±5%	0,125W SMD	3513 999 80060	
R31	10k ±5%	0,125W SMD	3513 999 80048	
R32,33	1k ±5%	0,125W SMD	3513 999 80036	
R34	10k ±5%	0,125W SMD	3513 999 80048	
R35	47k Thermistor		2322 642 62473	
R36	100k ±5%	0,125W SMD	3513 999 80060	
R37	39k ±5%	0,125W SMD	3513 999 80055	
R38	220 ±5%	0,125W SMD	3513 999 80028	
R39	1k8 ±5%	0,125W SMD	3513 999 80039	
R40	10k ±5%	0,125W SMD	3513 999 80048	
R41,42	100k ±5%	0,125W SMD	3513 999 80060	
R43	39k ±5%	0,125W SMD	3513 999 80055	
R44	68k ±5%	0,125W SMD	3513 999 80058	
R45,46	10k ±5%	0,125W SMD	3513 999 80048	
R47	220 ±5%	0,125W SMD	3513 999 80028	
R48	2k2 ±5%	0,125W SMD	3513 999 80040	
R49	470 ±5%	0,125W SMD	3513 999 80032	
R50	22 ±5%	0,125W SMD	3513 999 80016	
R51	1k ±5%	0,125W SMD	3513 999 80040	
R53	47 ±5%	0,125W SMD	3513 999 80020	
R54	47 ±5%	0,125W SMD	3513 999 80020	
R55	68k ±5%	0,125W SMD	3513 999 80058	
R56,57	100k ±5%	0,125W SMD	3513 999 80060	
R58	22 ±5%	0,125W SMD	3513 999 80016	
R59	68k ±5%	0,125W SMD	3513 999 80058	
R60	47k ±5%	0,125W SMD	3513 999 80056	
R61	100k ±5%	0,125W SMD	3513 999 80060	
R62	820k ±5%	0,125W SMD	3513 999 80071	
R63	150 ±5%	0,125W SMD	3513 999 80026	
R64	220 ±5%	0,125W SMD	3513 999 80028	
R65	1k5 ±5%	0,125W SMD	3513 999 80038	

Cct Ref	Description	Part No	Remarks
Resistors (Cont'd)			
R66	560 ±5% 0,125W SMD	3513 999 80033	
R67	100k ±5% 0,125W SMD	3513 999 80060	
R68	27k ±5% 0,125W SMD	3513 999 80053	
R69-71	10k ±5% 0,125W SMD	3513 999 80048	
R72-78	10k ±2% 0,1W SMD	3513 999 80236	
R79-81	4k7 ±5% 0,125W SMD	3513 999 80044	
R82	27k ±5% 0,125W SMD	3513 999 80053	
R83	10k ±5% 0,125W SMD	3513 999 80048	
R84	47k ±5% 0,125W SMD	3513 999 80056	
R85	4k7 ±5% 0,125W SMD	3513 999 80044	
R86	220 ±5% 0,125W SMD	3513 999 80028	
R87	10k ±5% 0,125W SMD	3513 999 80048	
R88	4k7 ±5% 0,125W SMD	3513 999 80044	
R89	10k ±5% 0,125W SMD	3513 999 80048	
R90	4k7 ±5% 0,125W SMD	3513 999 80044	
R91	10k ±5% 0,125W SMD	3513 999 80048	
R92	1k5 ±5% 0,125W SMD	3513 999 80038	
R93	220 ±5% 0,125W SMD	3513 999 80028	
R94	4k7 ±5% 0,125W SMD	3513 999 80044	
R95	10k ±5% 0,125W SMD	3513 999 80048	
R96	27k ±5% 0,125W SMD	3513 999 80053	
R97	100k ±5% 0,125W SMD	3513 999 80060	
R98	10k ±5% 0,125W SMD	3513 999 80048	
R99	47k Thermistor	2322 642 62473	
R100	4k7 ±5% 0,125W SMD	3513 999 80044	
R101	1k5 ±5% 0,125W SMD	3513 999 80038	
R102	6k8 ±5% 0,125W SMD	3513 999 80046	
R104	47 ±5% 0,125W SMD	3513 999 80020	
R105	3k3 ±5% 0,25W c film	3513 992 00190	
R106	3k3 ±5% 0,125W SMD	3513 999 80042	
R107	680k ±5% 0,25W c film	3513 992 00218	
R108, 109	1k ±5% 0,125W SMD	3513 999 80036	
R110, 111	10k ±5% 0,125W SMD	3513 999 80048	
R112	1k8 ±5% 0,125W SMD	3513 999 80039	
R113	27k ±5% 0,125W SMD	3513 999 80053	
R114	3k3 ±5% 0,125W SMD	3513 999 80042	
R115	330 ±5% 0,125W SMD	3513 999 80030	
R116	47 ±5% 0,125W SMD	3513 999 80020	
R117	4k7 ±5% 0,125W SMD	3513 999 80044	
R118, 119	1k5 ±5% 0,125W SMD	3513 999 80038	
R120	1k ±5% 0,125W SMD	3513 999 80036	
R123	27k ±5% 0,125W SMD	3513 999 80053	
RV1	1k ±25% pot cermet	3513 999 95003	
RV2,3	100k ±25% pot cermet	3513 999 95013	
RV5	50k ±25% pot SMD	3513 999 95011	
RV6'7	10k ±25% pot cermet	3513 999 95007	
RV8	50k ±25% pot SMD	3513 999 95011	
RN1	100k ±5% 9-pin sil	RN99531	
Capacitors			
C1	6p8 ±0p25 cer hi-q	3513 999 55538	
C2	390p ±5% 50V SMD	3513 999 55332	
C3	100n ±10% 50V SMD	3513 999 55017	
C4,5	390p ±5% 50V SMD	3513 999 55332	
C6	1p4 - 5p5 variable	PV99004	
C7	6p8 ±0p25 cer hi-q	3513 999 55538	
C8	1p8 ±0p25 SMD	3513 999 55304	
C10-12	1p8 ±0p25 SMD	3513 999 55304	
C13	6p8 ±0p25 cer hi-q	3513 999 55538	
C14	1p4-5p5 variable	PV99004	
C15-19	390p ±5% 50V SMD	3513 999 55332	
C20	1p4-5p5 variable	PV99004	
C21	6p8 ±0p25 cer hi-q	3513 999 55538	
C22	390p ±5% 50V SMD	3513 999 55332	
C23	1p ±0p25 SMD	3513 999 55301	
C24	2p7 ±0p25 cer	3513 991 06005	/05,06,15,16
C25-27	1p ±0p25 SMD	3513 999 55301	
C28	6p8 ±0p25 cer hi-q	3513 999 55538	
C29	390p ±5% 50V SMD	3513 999 55332	
C31	1p ±0p25 SMD	3513 999 55301	
C30	1p4-5p5 variable	PV99004	
C32	1p ±0p25 cer	3513 991 06000	/05,06,15,16
C33,34	1p ±0p25 SMD	3513 999 55301	
C36	1p ±0p25 SMD	3513 999 55301	
C37	6p8 ±0p25 cer hi-q	3513 999 55538	

Cct Ref	Description	Part No	Remarks
Capacitors (Cont'd)			
C38	1p4-5p5 variable	PV99004	
C40	1p ±0p25 SMD	3513 999 55301	
C41	1p ±0p25 cer	3513 991 06000	/05,06,15,16
C42,43	1p ±0p25 SMD	3513 999 55301	
C45	1p ±0p25 SMD	3513 999 55301	
C46	6p8 ±0p25 cer hi-q	3513 999 55538	
C47	1p4-5p5 variable	PV99004	
C48	1p ±0p25 cer	3513 991 06000	/05,06,15,16
C49	18p ±5% 50V SMD	3513 999 55316	
C50	10p ±5% 50V SMD	3513 999 55313	
C51,52	10n ±10% 50V SMD	3513 999 55492	
C53	10p ±5% 50V SMD	3513 999 55313	
C54	33 ±20% 16V elec	PS99409	
C55	390p ±5% 50V SMD	3513 999 55332	
C56	18p ±5% 50V SMD	3513 999 55316	
C57	10p ±5% 50V SMD	3513 999 55313	
C58	4p5-20p variable SMD	3513 999 70002	
C59,60	10n ±10% 50V SMD	3513 999 55492	
C61	82p ±5% 50V SMD	3513 999 55405	
C62	39p ±0p5 50V SMD	3513 999 55401	
C63	10n ±10% 50V SMD	3513 999 55492	
C64	1n ±5% 50V SMD	3513 999 55418	
C65	100n ±10% 50V SMD	3513 999 55017	
C66	33 ±20% 16V elec	PS99409	
C67-71	100n ±10% 50V SMD	3513 999 55017	
C72	10n ±10% 50V SMD	3513 999 55492	
C73	10p ±5% 50V SMD	3513 999 55313	
C74,75	100n ±10% 50V SMD	3513 999 55017	
C76,77	150p ±5% 50V SMD	3513 999 55408	
C78,79	100n ±10% 50V SMD	3513 999 55017	
C80	33 ±20% 16V elec	PS99409	
C81	1n ±5% 50V SMD	3513 999 55418	
C82-84	33 ±20% 16V elec	PS99409	
C84	47 ±20% 25V elec	PS99423	
C85-91	390p ±5% 50V SMD	3513 999 55413	
C92	100n ±10% 50V SMD	3513 999 55017	
C93	8p2 ±0p5 50V SMD	3513 999 55312	
C94	18p ±5% 50V SMD	3513 999 55316	
C95	0p8-10pf variable	4313 326 10081	
C96,97	6p8 ±0p25 cer hi-q	3513 999 55538	
C98,99	4p7 ±0p25 50V SMD	3513 999 55309	
C100-102	390p ±5% 50V SMD	3513 999 55413	
C103	5p6 ±0p5 50V SMD	3513 999 55310	
C104	1p ±0p25 SMD	3513 999 55301	
C105-107	390p ±5% 50V SMD	3513 999 55413	
C108	1n ±5% 50V SMD	3513 999 55418	
C109	390p ±5% 50V SMD	3513 999 55413	
C110	33 ±20% 16V elec	PS99409	
C111	390p ±5% 50V SMD	3513 999 55413	
C112	33 ±20% 16V elec	PS99409	
C113	390p ±5% 50V SMD	3513 999 55413	
C114	33 ±20% 16V elec	PS99409	
C115,116	100n ±10% 50V SMD	3513 999 55017	
C117	33 ±20% 16V elec	PS99409	
C118	10n ±10% 50V SMD	3513 999 55492	
C119,120	390p ±5% 50V SMD	3513 999 55413	
C121,122	100n ±10% 50V SMD	3513 999 55017	
C123-125	1n ±5% 50V SMD	3513 999 55418	
C126	10n ±10% 50V SMD	3513 999 55492	
C127	1n ±5% 50V SMD	3513 999 55418	
C128	150p ±5% 50V SMD	3513 999 55408	
C129	1n ±5% 50V SMD	3513 999 55418	
C130	390p ±5% 50V SMD	3513 999 55413	
C131	2n2 ±5% 50V SMD	3513 999 55003	
C132,133	1n ±5% 50V SMD	3513 999 55418	
C134	100n ±10% 50V SMD	3513 999 55017	
C135	10n ±10% 50V SMD	3513 999 55492	
C136,137	390p ±5% 50V SMD	3513 999 55413	
C138	1n ±5% 50V SMD	3513 999 55418	
C139	100n ±10% 50V SMD	3513 999 55017	
C140	33 ±20% 16V elec	PS99409	
C141	10n ±10% 50V SMD	3513 999 55492	
C142	33 ±20% 16V elec	PS99409	
C143	10n ±10% 50V SMD	3513 999 55492	
C144,145	390p ±5% 50V SMD	3513 999 55413	
C146	100n ±10% 50V SMD	3513 999 55017	

Cct Ref	Description	Part No	Remarks
Capacitors (Cont'd)			
C147	33 ±20% 16V elec	PS99409	
C148	100n ±10% 50V SMD	3513 999 55017	
C149-160	390p ±5% 50V SMD	3513 999 55413	
C161	1n ±5% 50V SMD	3513 999 55418	
C162	33 ±20% 16V elec	PS99409	
C163	100n ±10% 50V SMD	3513 999 55017	
C164,165	1n ±5% 50V SMD	3513 999 55418	
C166	10n ±10% 50V SMD	3513 999 55492	
C167	1n ±5% 50V SMD	3513 999 55418	
C168	470n ±5% pes	3513 991 08016	
C169	1n ±5% 50V SMD	3513 999 55418	
C170	33 ±20% 16V elec	PS99409	
C171	10n ±10% 50V SMD	3513 999 55492	
C176	10p ±5% 50V SMD	3513 999 55313	
C177	0p8-10pf variable	4313 326 10081	
C178	47p ±5% 50V SMD	3513 999 55402	
C179	150p ±5% 50V SMD	3513 999 55408	
C180	18p ±5% 50V SMD	3513 999 55316	
C181	10n ±10% 50V SMD	3513 999 55492	
C182	390p ±5% 50V SMD	3513 999 55413	
C183	10n ±10% 50V SMD	3513 999 55492	
C184	1n ±5% 50V SMD	3513 999 55418	
C185	10n ±10% 50V SMD	3513 999 55492	
C185,186	100p ±5% 500V SMD	3513 999 55663	/05-07,15-17
C189	100n ±10% 50V SMD	3513 999 55017	
Inductors			
L1	Coil, air spaced	3513 509 00651	
L2-4	Coil	3513 509 00091	
L5-8	Coil	3513 509 00081	
L9	Coil assy 7mm	FT99200/02	
L10	Inductor 10µh ±10% SMD	3513 999 98092	
L11,12	Coil assy 7mm	FT99200/02	
L13-15	Inductor 10µh ±10% SMD	3513 999 98092	
L16	Coil 455kHz	4313 328 00031	
L17	Inductor 10µh ±10% SMD	3513 999 98092	
L18	Choke assy	AT31684	
L19	Inductor 10µh ±10% SMD	3513 999 98092	
L20-22	Inductor 220nh ±5% SMD	3513 999 98044	
L23	Inductor 15nh ±20% SMD	3513 999 98066	
L24-27	Inductor 10µh ±10% SMD	3513 999 98092	
L28	Choke assy	AT31684	
L29-40	Inductor 10µh ±10% SMD	3513 999 98092	
Miscellaneous			
CR1	Resonator ceramic 480MHz	3513 993 56600	/05,15
CR1	Resonator ceramic 520MHz	3513 993 56601	/06,16
CR1	Resonator ceramic 600MHz	3513 993 56603	/07,17
FL1	Xtal filt 12,5kHz	FC03547	/05,06,07
FL1	Xtal filt 25kHz	FC03528	/15,16,17
FL2,3	Cer filt 455kHz nom/12,5kHz	3513 993 56537	/05,06,07
FL2,3	Cer filt 455kHz nom/25kHz	3513 993 56535	/15,16,17
LED1	Led red	3513 993 46000	
PLA	Plug 15-way 'D' rt angle	FP12115	
PLB	PL PCB mtd straight 2 x 3-way	FP99174	
PLC,D	PL PCB mtd straight 2 x 8-way	FP99182	
XL1	Xtal 20,945MHz	4313 320 90021	
XL2	Xtal 8,4MHz	3513 900 70081	
	Bracket Antenna	3513 900 40231	
	Bush Ins	QA99024	1/IC7
	Cable Assy Channel	AT70251	1/PLC-PLD
	Can Screen - Rx	3513 901 30021	
	Core Cup	FC02121	1/L16
	Hdr str male 1-pos'n	3513 504 00121	1/TP1,2,3
	Hdr str male 4-pos'n	3513 504 00151	1/PLE
	PCB Assy Crystal Oven	AT28910/04	1/XL2
	Pillar Hexagon	BT04132	1/PCB-Crystal Oven Assy
	Screen Mixer Underside	BT26374	
	Skt BNC Type	FS43779	1/Antenna Bracket
	Sleeving Heatsink 6mm Id	FS23168	1/L16
	Socket Modified to 14-way	BJ34101/14	2/IC13
	Socket Xtal	FS42611	2/XL2
	Nut st hex M3	2522 401 64008	2/PLA; 1/IC3,7,10
	Scr st pan pozi M3 x 10mm	QJ11903/X	2/PLA; 1/IC3,7,10
	Washer Thermal T0-220	QA99111	1/IC7

PCB ASSEMBLY RX VHF

AT29081/02 A9 BAND, 12.5KHZ CHANNEL SPACING
 AT29081/03 B0 BAND, 12.5KHZ CHANNEL SPACING
 AT29081/12 A9 BAND, 25KHZ CHANNEL SPACING
 AT29081/13 B0 BAND, 25KHZ CHANNEL SPACING
 AT29081/22 A9 BAND, 20KHZ CHANNEL SPACING
 AT29081/23 B0 BAND, 20KHZ CHANNEL SPACING

Cct Ref	Description	Part No	Remarks
Semiconductors & ICs			
IC1	IC, SMD LS204	3513 999 45011	
IC2	IC, SMD SP8792T	3513 999 45017	
IC3	IC, SMD NJ8820GG	4313 324 70001	
IC4	IC, SMD LM258	3513 999 45008	
IC5	IC, SMD SA602D	9337 488 50605	
IC6	IC, SMD SA604AD	9339 489 30623	
IC7	IC, SMD LM348D	3513 999 45003	
IC8	IC, SMD MC1458D-	3513 999 45004	
IC9	IC, SMD LM324-HDL	3513 999 45005	
IC10	EPLD assembly programmed	AT60170	
IC11	IC, 7805 Volt reg & fix	3513 993 34014	
IC12	IC, LM317-	FU99119	
IC13,14	PROM assembly programmed	AT60171	
TR1	Transistor, SMD MMBFU310	3513 999 05009	
TR2-4	Transistor, SMD ON977/TI	3513 999 05007	
TR5	Transistor, BCX19	3513 999 00016	
TR6	Transistor, SMD MMBT918	3513 999 00036	
TR7	Transistor, BCX19	3513 999 00016	
TR8	Transistor, SMD ON977/TI	3513 999 05007	
TR9	Transistor, SMD MMBFU310	3513 999 05009	
TR10	Transistor, BCX19	3513 999 00016	
D1,2	Diode, BB809	9335 154 20113	
D3	Diode, SMD BAV99	3513 999 15002	
D4	LED, red	3513 993 46000	
D5-14	Diode, BB809	9335 154 20113	
D25	Diode, SMD BAV99	3513 999 15002	
Resistors			
R1	1k ±5% 0,125W SMD	3513 999 80036	
R2	68k ±5% 0,125W SMD	3513 999 80058	
R3	1k ±5% 0,125W SMD	3513 999 80036	
R4	39k ±5% 0,125W SMD	3513 999 80055	
R5	15k ±5% 0,125W SMD	3513 999 80050	
R6	270 ±5% 0,125W SMD	3513 999 80029	
R8	68k ±5% 0,125W SMD	3513 999 80058	
R9	15k ±5% 0,125W SMD	3513 999 80050	
R10	39k ±5% 0,125W SMD	3513 999 80055	
R11	68k ±5% 0,125W SMD	3513 999 80058	
R12	470 ±5% 0,125W SMD	3513 999 80032	
R13	270 ±5% 0,125W SMD	3513 999 80029	
R14	10 ±5% 0,125W SMD	3513 999 80012	
R15	470 ±5% 0,125W SMD	3513 999 80032	
R16	5k6 ±5% 0,125W SMD	3513 999 80045	
R17	330 ±5% 0,125W SMD	3513 999 80030	
R18	1k ±5% 0,125W SMD	3513 999 80036	
R19,20	100k ±5% 0,125W SMD	3513 999 80060	
R21	1k ±5% 0,125W SMD	3513 999 80036	
R22	3k3 ±5% 0,125W SMD	3513 999 80042	
R23	1k8 ±5% 0,125W SMD	3513 999 80039	
R24	680k ±5% 0,125W SMD	3513 999 80070	
R25	560 ±5% 0,125W SMD	3513 999 80033	
R26,27	470 ±5% 0,125W SMD	3513 999 80032	
R28,29	10k ±5% 0,125W SMD	3513 999 80048	
R30	1M ±5% 0,125W SMD	3513 999 80072	
R31	10k ±5% 0,125W SMD	3513 999 80048	
R32	47k ±5% 0,125W SMD	3513 999 80056	
R33	1k ±5% 0,125W SMD	3513 999 80036	
R34	3k3 ±5% 0,125W SMD	3513 999 80042	
R35	10k ±5% 0,125W SMD	3513 999 80048	
R36	47k ±5% 0,125W SMD	3513 999 80056	
R37	47k ±5% 0,125W SMD	3513 999 80056	
R38	100k ±5% 0,125W SMD	3513 999 80060	
R39	27k ±5% 0,125W SMD	3513 999 80053	
R40	150k ±5% 0,125W SMD	3513 999 80062	
R41,42	10k ±5% 0,125W SMD	3513 999 80048	
R43	22k ±5% 0,125W SMD	3513 999 80052	
R44-51	100k ±5% 0,125W SMD	3513 999 80060	

Cct Ref	Description	Part No	Remarks
Resistors (Cont'd)			
R52	68k ±5% 0,125W SMD	3513 999 80058	
R53	4k7 ±5% 0,125W SMD	3513 999 80044	
R54,55	47 ±5% 0,125W SMD	3513 999 80020	
R56,57	1k8 ±5% 0,125W SMD	3513 999 80039	
R58	470 ±5% 0,125W SMD	3513 999 80032	
R59	270 ±5% 0,125W SMD	3513 999 80029	
R60	47k ±5% 0,125W SMD	3513 999 80056	
R61	3k3 ±5% 0,125W SMD	3513 999 80042	
R62	47k ±5% 0,125W SMD	3513 999 80056	
R63	100k ±5% 0,125W SMD	3513 999 80060	
R64	6k8 ±5% 0,125W SMD	3513 999 80046	
R65	39k ±5% 0,125W SMD	3513 999 80055	
R66,67	4k7 ±5% 0,125W SMD	3513 999 80044	
R68	27k ±5% 0,125W SMD	3513 999 80053	
R69	18k ±5% 0,125W SMD	3513 999 80051	
R70	68k ±5% 0,125W SMD	3513 999 80058	
R71	100k ±5% 0,125W SMD	3513 999 80060	
R72	33k ±5% 0,125W SMD	3513 999 80054	
R73	2k2 ±5% 0,125W SMD	3513 999 80040	
R74	15k ±5% 0,125W SMD	3513 999 80050	
R75	6k8 ±5% 0,125W SMD	3513 999 80046	
R76	15k ±5% 0,125W SMD	3513 999 80050	
R77	6k8 ±5% 0,125W SMD	3513 999 80046	
R78	100k ±5% 0,125W SMD	3513 999 80060	
R79	4k7 ±5% 0,125W SMD	3513 999 80044	
R80,81	10k ±5% 0,125W SMD	3513 999 80048	
R82	330 ±5% 0,125W SMD	3513 999 80030	
R83	1k ±5% 0,125W SMD	3513 999 80036	
R84	27k ±5% 0,125W SMD	3513 999 80053	
R85	10k ±5% 0,125W SMD	3513 999 80048	
R86	6k8 ±5% 0,125W SMD	3513 999 80046	
R87	4k7 ±5% 0,125W SMD	3513 999 80044	
R88	15k ±5% 0,125W SMD	3513 999 80050	
R89	2k2 ±5% 0,125W SMD	3513 999 80040	
R90	68k ±5% 0,125W SMD	3513 999 80058	
R91	15k ±5% 0,125W SMD	3513 999 80050	
R92	39k ±5% 0,125W SMD	3513 999 80055	
R93	68k ±5% 0,125W SMD	3513 999 80058	
R94	470 ±5% 0,125W SMD	3513 999 80032	
R95	220 ±5% 0,125W SMD	3513 999 80028	
R96	1k8 ±5% 0,125W SMD	3513 999 80039	
R98,99	4k7 ±5% 0,125W SMD	3513 999 80044	
R100-102	10k ±5% 0,125W SMD	3513 999 80048	
R103	82k ±5% 0,125W SMD	3513 999 80059	
R104	4k7 ±2% 0,1W SMD	3513 999 80232	
R105	47k ±2% 0,1W SMD	3513 999 80244	
R106	10k ±5% 0,125W SMD	3513 999 80048	
R107-113	10k ±2% 0,1W SMD	3513 999 80236	
R114	100k ±5% 0,125W SMD	3513 999 80060	
R115	18k ±5% 0,125W SMD	3513 999 80051	
R116	2k2 ±5% 0,125W SMD	3513 999 80040	
R117,118	4k7 ±5% 0,125W SMD	3513 999 80044	
R119-120	100k ±2% 0,1W SMD	3513 999 80248	
R121	22k ±5% 0,125W SMD	3513 999 80052	
RN1	100k ±5% Res 9-pin sil	RN99531	
RV1	1k ±25% Pot cermet	3513 999 95003	
RV2	10k ±25% Pot cermet	3513 999 95007	
RV3	100k ±25% Pot cermet	3513 999 95013	
RV4,5	50k ±25% Pot SMD	3513 999 95011	
RV6,7	10k ±25% Pot cermet	3513 999 95007	
TH1,2	47k Thermistor	2322 642 62473	

Capacitors

C1	5p6 ±0p5 50V SMD	3513 999 55310	
C2	10p ±5% 50V SMD	3513 999 55313	
C3	22 ±20% 25V elec	3513 991 00079	
C4	1n ±5% 50V SMD	3513 999 55418	
C5	22 ±20% 25V elec	3513 991 00079	
C6	1n ±5% 50V SMD	3513 999 55418	
C7	100n ±20%	3513 991 06095	
C8-10	1n ±5% 50V SMD	3513 999 55418	
C13	470p ±5% SMD	3513 999 55414	
C14,15	1n ±5% 50V SMD	3513 999 55418	
C16	22 ±20% 25V elec	3513 991 00079	
C17	470n ±5% pes	3513 991 08016	

Cct Ref	Description	Part No	Remarks
Capacitors (Cont'd)			
C18	1n ±5% 50V	SMD 3513 999 55418	
C19,20	33 ±20% 16V	elec PS99409	
C21,22	10n ±10%	SMD 3513 999 55492	
C23,24	1n ±10% 50V	SMD 3513 999 55459	
C25	1n ±5% 50V	SMD 3513 999 55418	
C26	100p ±5%	SMD 3513 999 55406	
C27	1n ±5% 50V	SMD 3513 999 55418	
C28	27p ±5% 50V	SMD 3513 999 55318	
C29	8p2 ±0p5 50V	SMD 3513 999 55312	
C30	15p ±5%	cer PN99941	
C31	150p ±5% 50V	SMD 3513 999 55408	
C32	10n ±10%	SMD 3513 999 55492	
C33	47p ±5% 50V	SMD 3513 999 55402	
C34	1n ±10% 50V	SMD 3513 999 55459	
C35	4n7 ±10% 50V	SMD 3513 999 55467	
C36	82p ±5% 50V	SMD 3513 999 55324	
C37	1n ±10% 50V	SMD 3513 999 55459	
C38	1n ±5% 50V	SMD 3513 999 55418	
C39	15p ±5%	cer 3513 991 06014	/02,12,22
C39	18p ±5%	cer 3513 991 06015	/03,13,23
C40	1n ±5% 50V	SMD 3513 999 55418	
C41	15p ±5%	cer 3513 991 06014	/02,12,22
C41	22p ±5%	3513 991 06016	/03,13,23
C42	3p3 ±0p25	3513 991 06006	/02,12,22
C42	4p7 ±0p25	3513 991 06008	/03,13,23
C43	2p2 ±0p25	3513 991 06004	
C44	6p8 ±0p25	3513 991 06010	/03,13,23
C44	8p2 ±0p25	3513 991 06011	/02,12,22
C46	15p ±5%	cer 3513 991 06014	/02,12,22
C46	22p ±5%	3513 991 06016	/03,13,23
C47	1n ±5% 50V	SMD 3513 999 55418	
C48	1p ±0p25	3513 991 06000	
C49	1p8 ±0p25	3513 991 06003	
C50	1p8 ±0p25	3513 991 06003	
C52	1p ±0p25	3513 991 06000	
C53	15p ±5%	cer 3513 991 06014	/02,12,22
C53	22p ±5%	3513 991 06016	/03,13,23
C54	1n ±5% 50V	SMD 3513 999 55418	
C55	2p7 ±0p25	3513 991 06005	/02,12,22
C55	4p7 ±0p25	3513 991 06008	/03,13,23
C56	1p ±0p25	3513 991 06000	/03,13,23
C56	1p2 ±0p25	3513 991 06001	/02,12,22
C57	1p ±0p25	3513 991 06000	/03,13,23
C57	1p8 ±0p25	3513 991 06003	/02,12,22
C59	15p ±5%	cer 3513 991 06014	/02,12,22
C59	22p ±5%	3513 991 06016	/03,13,23
C60	68p ±5% 50V	SMD 3513 999 55323	
C61	1n ±10% 50V	SMD 3513 999 55459	
C62	22 ±20% 25V	elec 3513 991 00079	
C63	100n ±10% 50V	SMD 3513 999 55498	
C64	15p ±5% 50V	SMD 3513 999 55315	
C65	10 ±20% 63V	elec PS99445	
C66	10n ±10%	SMD 3513 999 55492	
C67	18p ±5% 50V	SMD 3513 999 55316	
C68	100p ±5%	SMD 3513 999 55406	
C69	100n ±10% 50V	SMD 3513 999 55498	
C70	150p ±5% 50V	SMD 3513 999 55408	
C71	39p ±5% 50V	SMD 3513 999 55401	
C72,73	100n ±10% 50V	SMD 3513 999 55498	
C74	10 ±20% 63V	elec PS99445	
C75	100n ±10% 50V	SMD 3513 999 55498	
C76	150p ±10% 50V	SMD 3513 999 55408	
C77,78	100n ±10% 50V	SMD 3513 999 55498	
C79	150p ±5% 50V	SMD 3513 999 55408	
C80	27p ±5% 50V	SMD 3513 999 55318	
C81,82	100n ±10% 50V	SMD 3513 999 55498	
C83	10n ±10% 50V	SMD 3513 999 55492	
C84	2n2 ±5% 50V	SMD 3513 999 55003	
C85	1n5 ±5%	cer PN99901	/02,03
C86	33 ±20% 16V	elec PS99409	
C87	47p ±5% 50V	SMD 3513 999 55402	
C88	1n ±5% 50V	SMD 3513 999 55418	
C89	10n ±10% 50V	SMD 3513 999 55492	
C90-93	2n2 ±5% 50V	SMD 3513 999 55003	
C94	100n ±10% 50V	SMD 3513 999 55498	
C95,96	47p ±5% 50V	SMD 3513 999 55402	

Cct Ref	Description	Part No	Remarks
Capacitors (Cont'd)			
C98	1n ±5% 50V SMD	3513 999 55418	
C100	1n ±5% 50V SMD	3513 999 55418	
C101	33p ±5% 50V SMD	3513 999 55319	
C102	1n ±5% 50V SMD	3513 999 55418	
C103	1n ±10% 50V SMD	3513 999 55459	
C104, 105	100n ±10% 50V SMD	3513 999 55498	
C106	47 ±20% 25v elec	PS99423	
C107	100n ±10% 50V SMD	3513 999 55498	
C108	33 ±20% 16V elec	PS99409	
C109	1n ±10% 50V SMD	3513 999 55459	
C110	47 ±20% 25V elec	PS99423	
C111, 112	1n ±5% 50V SMD	3513 999 55418	
C113	100n ±10% 50V SMD	3513 999 55498	
C115	4p7 ±0p25 50V SMD	3513 999 55309	
C117	10n ±10% 50V SMD	3513 999 55492	
C118	10n ±10% SMD	3513 999 55492	
C119	33 ±20% 16V elec	PS99409	
C120	10n ±10% SMD	3513 999 55492	
C121	33 ±20% 16V elec	PS99409	
C122	100n ±10% 50V SMD	3513 999 55498	
C132	1n ±10% 50V SMD	3513 999 55459	
C133	10n ±10% SMD	3513 999 55492	
C134	33 ±20% 16V elec	PS99409	
C135	100n ±10% 50V SMD	3513 999 55498	
C138-140	10n ±10% SMD	3513 999 55492	
C141	100n ±10% 50V SMD	3513 999 55498	
C143	10n ±10% 50V SMD	3513 999 55492	
C145	18p ±5% 50V SMD	3513 999 55316	
C147	18p ±5% 50V SMD	3513 999 55316	
C148	82p ±5% 50V SMD	3513 999 55405	
C149	10n ±10% 50V SMD	3513 999 55492	
C151	82p ±5% 50V SMD	3513 999 55324	
CV1,2	1p5-14p Cap var	3513 991 04042	
CV3	2p-18p Cap var PCB mtg	PV99006	
CV4-7	2p-9p Cap var pwb mtg	3513 991 04046	

Inductors

L1	Coil	2413 535 00845	/02,12,22
L1	Coil 0μ23 green	FT06604	/03,13,23
L3	Coil assy	3513 509 00281	
L4	1 ±10% SMD	3513 999 98041	
L5	120n ±10% SMD	3513 999 98059	
L6,7	Coil 21,4MHz 332pn-1661	2422 535 97264	
L8	Choke	FT99102	
L9	Coil	3513 509 00341	
L10	Coil	3513 509 00331	
L11	Coil	3513 509 00341	
L12	Coil	3513 509 00331	
L13	100n ±10% SMD	3513 999 98057	
L13	Choke	3513 993 22506	
L14	Choke	FT99102	
L15	Coil 455khz 5plc-1217z	4313 328 00031	
L16-20	10 ±10% SMD	3513 999 98092	
L21	Choke	FT99102	
L22,23	Choke assembly	AT31684	
L24	Coil	3513 509 01521	
L25-31	10 ±10% SMD	3513 999 98092	
L32	Coil assembly	AT32080/11	/02,12,22
L32	Coil assembly	AT32061/04	/03,13,23
L33	Coil	3513 509 01531	

Miscellaneous

PLA	Plug 15-way D rt angle	FP12115	
PLB	Hdr str male 4 pos'n	3513 504 00151	
PLC-E	Plug PCB mtd straight 2 x 8	FP99182	
PLF	Plug PCB mtd straight 2 x 3	FP99174	
SKA	Socket BNC	FS43779	
XL1	Xtal 8,4MHz	3513 900 70081	
XL2	Xtal 20,945MHz	4313 320 90021	
FL1	Xtal filt 21,4MHz-12,5kHz	2722 172 90049	/02,03
FL1	Xtal filt 21,4MHz-20kHz	2722 172 90074	/22,23
FL1	Xtal filt 21,4MHz-25kHz	2722 172 90024	/12,13
FL2	Cer filt 455kHz nom/12,5kHz	3513 993 56537	/02,03
FL2	Cer filt 455kHz nom/25kHz	3513 993 56535	/12,13,22,23

Cct Ref	Description	Part No	Remarks
Miscellaneous (Cont'd)			
FL3	Cer filt 455kHz nom/12,5kHz	3513 993 56537	/02,03
FL3	Cer filt 455kHz nom/25kHz	3513 993 56535	/12,13,22,23
TP1-4	Header	3513 504 00121	
	Bush Ins(T0-220)	3513 990 16014	1/IC12
	Cable assembly	AT70251	1/PLC-PLE
	Can	FT03521	
	Can assembly	AT29407/02	
	Cover	3513 901 10351	
	Core cup	FC02121	1/L15
	Link connector	3513 993 07000	
	Nut st hex M3	2522 401 64008	2/PLA-PCB, 1/IC11, 1/IC12
	PCB Assembly Crystal Oven	AT28910/04	
	Pillar Hexagon	BT04132	1/Xtal Oven
	Screen	BT26313	
	Screen	BT26374	
	Screen	3513 906 20231	
	Scr st pan pozi M3 x 10mm	QJ11903/X	2/PLA-PCB
	Scr st pan pozi M3 x 8mm	2522 178 20059	1/IC11, 1/IC12, 1/Xtal Oven-Pillar
	Scr st pan tapt M2,5 x 5mm	2511 001 11123	
	Socket modified to 14-way	BJ34101/14	2/IC10
	Socket Xtal	FS42611	2/X11
	Washer Thermal T0-220	3513 990 16254	1/IC12

PCB ASSEMBLY RX EO BAND
AT29084/04 12,5KHZ CHANNEL SPACING
AT29084/14 25KHZ CHANNEL SPACING
AT29084/24 20KHZ CHANNEL SPACING

Semiconductors & ICs

IC1	IC, SMD LS204	3513 999 45011	
IC2	IC, SMD SP8792T	3513 999 45017	
IC3	IC, SMD NJ8820GG	4313 324 70001	
IC4	IC, SMD LM258	3513 999 45008	
IC5	IC, SMD SA602D	9337 488 50605	
IC6	IC, SMD SA604AD	9339 489 30623	
IC7	IC, SMD LM348D	3513 999 45003	
IC8	IC, SMD MC1458D	3513 999 45004	
IC9	IC, SMD LM324	3513 999 45005	
IC10	EPLD assembly programmed	AT60170	
IC11	IC, 7805 Volt reg & fix	3513 993 34014	
IC12	IC, LM317	FU99119	
IC13	PROM assembly programmed	AT60171	
TR1	Transistor, SMD MMBFU310	3513 999 05009	
TR2-4	Transistor, SMD ON977/TI	3513 999 05007	
TR5	Transistor, BCX19	3513 999 00016	
TR6	Transistor, SMD MMBT918	3513 999 00036	
TR7	Transistor, BCX19	3513 999 00016	
TR8	Transistor, SMD ON977/TI	3513 999 05007	
TR9	Transistor, SMD MMBFU310	3513 999 05009	
TR10	Transistor, BCX19	3513 999 00016	
D1,2	Diode, BB809	9335 154 20113	
D3	Diode, SMD BAV99	3513 999 15002	
D4	LED, red	3513 993 46000	
D5-12	Diode, BB809	9335 154 20113	
D25	Diode, SMD BAV99	3513 999 15002	

Resistors

R1	1k	±5%	0,125W	SMD	3513 999 80036
R2	68k	±5%	0,125W	SMD	3513 999 80058
R3	1k	±5%	0,125W	SMD	3513 999 80036
R4	39k	±5%	0,125W	SMD	3513 999 80055
R5	15k	±5%	0,125W	SMD	3513 999 80050
R6	270	±5%	0,125W	SMD	3513 999 80029
R7	330	±5%	0,125W	SMD	3513 999 80030
R8	68k	±5%	0,125W	SMD	3513 999 80058
R9	15k	±5%	0,125W	SMD	3513 999 80050
R10	39k	±5%	0,125W	SMD	3513 999 80055
R11	68k	±5%	0,125W	SMD	3513 999 80058
R12	470	±5%	0,125W	SMD	3513 999 80032
R13	270	±5%	0,125W	SMD	3513 999 80029
R14	10	±5%	0,125W	SMD	3513 999 80012
R15	470	±5%	0,125W	SMD	3513 999 80032
R16	5k6	±5%	0,125W	SMD	3513 999 80045
R17	330	±5%	0,125W	SMD	3513 999 80030

Cct Ref	Description	Part No	Remarks
Resistors (Cont'd)			
R18	1k ±5% 0,125W SMD	3513 999 80036	
R19,20	100k ±5% 0,125W SMD	3513 999 80060	
R21	1k ±5% 0,125W SMD	3513 999 80036	
R22	3k3 ±5% 0,125W SMD	3513 999 80042	
R23	1k8 ±5% 0,125W SMD	3513 999 80039	
R24	680k ±5% 0,125W SMD	3513 999 80070	
R25	560 ±5% 0,125W SMD	3513 999 80033	
R26,27	470 ±5% 0,125W SMD	3513 999 80032	
R28,29	10k ±5% 0,125W SMD	3513 999 80048	
R30	1m ±5% 0,125W SMD	3513 999 80072	
R31	10k ±5% 0,125W SMD	3513 999 80048	
R32	47k ±5% 0,125W SMD	3513 999 80056	
R33	1k ±5% 0,125W SMD	3513 999 80036	
R34	3k3 ±5% 0,125W SMD	3513 999 80042	
R35	10k ±5% 0,125W SMD	3513 999 80048	
R36,37	47k ±5% 0,125W SMD	3513 999 80056	
R38	100k ±5% 0,125W SMD	3513 999 80060	
R39	27k ±5% 0,125W SMD	3513 999 80053	
R40	100k ±5% 0,125W SMD	3513 999 80060	
R41,42	10k ±5% 0,125W SMD	3513 999 80048	
R43	22k ±5% 0,125W SMD	3513 999 80052	
R44-49	100k ±5% 0,125W SMD	3513 999 80060	
R52	68k ±5% 0,125W SMD	3513 999 80058	
R53	4k7 ±5% 0,125W SMD	3513 999 80044	
R54,55	47 ±5% 0,125W SMD	3513 999 80020	
R56,57	1k8 ±5% 0,125W SMD	3513 999 80039	
R58	470 ±5% 0,125W SMD	3513 999 80032	
R59	270 ±5% 0,125W SMD	3513 999 80029	
R60	47k ±5% 0,125W SMD	3513 999 80056	
R61	3k3 ±5% 0,125W SMD	3513 999 80042	
R62	47k ±5% 0,125W SMD	3513 999 80056	
R63	100k ±5% 0,125W SMD	3513 999 80060	
R64	6k8 ±5% 0,125W SMD	3513 999 80046	
R65	39k ±5% 0,125W SMD	3513 999 80055	
R66,67	4k7 ±5% 0,125W SMD	3513 999 80044	
R68	27k ±5% 0,125W SMD	3513 999 80053	
R69	18k ±5% 0,125W SMD	3513 999 80051	
R70	68k ±5% 0,125W SMD	3513 999 80058	
R71	100k ±5% 0,125W SMD	3513 999 80060	
R72	33k ±5% 0,125W SMD	3513 999 80054	
R73	2k2 ±5% 0,125W SMD	3513 999 80040	
R74	15k ±5% 0,125W SMD	3513 999 80050	
R75	6k8 ±5% 0,125W SMD	3513 999 80046	
R76	15k ±5% 0,125W SMD	3513 999 80050	
R77	6k8 ±5% 0,125W SMD	3513 999 80046	
R78	100k ±5% 0,125W SMD	3513 999 80060	
R79	4k7 ±5% 0,125W SMD	3513 999 80044	
R80,81	10k ±5% 0,125W SMD	3513 999 80048	
R83	1k ±5% 0,125W SMD	3513 999 80036	
R84	27k ±5% 0,125W SMD	3513 999 80053	
R85	10k ±5% 0,125W SMD	3513 999 80048	
R86	6k8 ±5% 0,125W SMD	3513 999 80046	
R87	4k7 ±5% 0,125W SMD	3513 999 80044	
R88	15k ±5% 0,125W SMD	3513 999 80050	
R89	2k2 ±5% 0,125W SMD	3513 999 80040	
R90	68k ±5% 0,125W SMD	3513 999 80058	
R91	15k ±5% 0,125W SMD	3513 999 80050	
R92	39k ±5% 0,125W SMD	3513 999 80055	
R93	68k ±5% 0,125W SMD	3513 999 80058	
R94	470 ±5% 0,125W SMD	3513 999 80032	
R95	220 ±5% 0,125W SMD	3513 999 80028	
R96	1k8 ±5% 0,125W SMD	3513 999 80039	
R97	100k ±5% 0,125W SMD	3513 999 80060	
R98,99	4k7 ±5% 0,125W SMD	3513 999 80044	
R100-102	10k ±5% 0,125W SMD	3513 999 80048	
R103	100k ±5% 0,125W SMD	3513 999 80060	
R104	4k7 ±5% 0,125W SMD	3513 999 80044	
R105	47k ±5% 0,125W SMD	3513 999 80056	
R106-113	10k ±2% 0,1W SMD	3513 999 80236	
R114	10k ±5% 0,125W SMD	3513 999 80048	
R115	18k ±5% 0,125W SMD	3513 999 80051	
R116	2k2 ±5% 0,125W SMD	3513 999 80040	
R117,118	4k7 ±5% 0,125W SMD	3513 999 80044	
R119,120	100k ±5% 0,125W SMD	3513 999 80060	
R121	22k ±5% 0,125W SMD	3513 999 80052	
RN1	100k ±5% Res 9-pin sil	RN99531	

Cct Ref	Description	Part No	Remarks
Resistors (Cont'd)			
RV1	1k ±25% Pot cermet	3513 999 95003	
RV2	10k ±25% Pot cermet	3513 999 95007	
RV3	100k ±25% Pot cermet	3513 999 95013	
RV4,5	50k ±25% Pot SMD	3513 999 95011	
RV6,7	10k ±25% Pot cermet	3513 999 95007	
TH1,2	47k Thermistor	2322 642 62473	
Capacitors			
C1,2	5p6 ±0p5 50V SMD	3513 999 55310	
C4	1n ±5% 50V SMD	3513 999 55418	
C5	22 ±20% 16V elec	3513 991 00046	
C6	1n ±5% 50V SMD	3513 999 55418	
C7	100n ±20% SMD	3513 991 06095	
C8-10	1n ±5% 50V SMD	3513 999 55418	
C13	470p ±5% SMD	3513 999 55414	
C14,15	1n ±5% 50V SMD	3513 999 55418	
C16	22 ±20% 25V elec	3513 991 00079	
C17	470n ±5% pes	3513 991 08016	
C18	1n ±5% 50V SMD	3513 999 55418	
C19,20	33 ±20% 16V elec	PS99409	
C21,22	10n ±10% SMD	3513 999 55492	
C23,24	1n ±10% 50V SMD	3513 999 55459	
C25	1n ±5% 50V SMD	3513 999 55418	
C26	100p ±5% SMD	3513 999 55406	
C27	1n ±5% 50V SMD	3513 999 55418	
C28	27p ±5% 50V SMD	3513 999 55318	
C29	8p2 ±0p5 50V SMD	3513 999 55312	
C30	15p ±5% 50V SMD	3513 999 55315	
C31	150p ±5% 50V SMD	3513 999 55408	
C32	10n ±10% SMD	3513 999 55492	
C33	47p ±5% 50V SMD	3513 999 55402	
C34	1n ±10% 50V SMD	3513 999 55459	
C35	4n7 ±10% 50V SMD	3513 999 55467	
C36	68p ±5% 50V SMD	3513 999 55323	
C37	1n ±10% 50V SMD	3513 999 55459	
C38	1n ±5% 50V SMD	3513 999 55418	
C40	10n ±10% SMD	3513 999 55492	
C41	18p ±5% SMD	3513 991 06015	04, 14, 24
C42	3p3 ±0p25 SMD	3513 991 06006	04, 14, 24
C43	2p2 ±0p25 SMD	3513 991 06004	
C44	8p2 ±0p25 SMD	3513 991 06011	04, 14, 24
C45	5p6 ±0p25 SMD	3513 991 06009	04, 14, 24
C46	18p ±5% SMD	3513 991 06015	04, 14, 24
C47	10n ±10% SMD	3513 999 55492	
C48	1p ±0p25 SMD	3513 991 06000	
C49,50	1p8 ±0p25 SMD	3513 991 06003	
C51	3p9 ±0p25 SMD	3513 991 06007	04, 14, 24
C52	1p ±0p25 SMD	3513 991 06000	
C53	18p ±5% SMD	3513 991 06015	04, 14, 24
C54	10n ±10% SMD	3513 999 55492	
C55	2p7 ±0p25 SMD	3513 991 06005	04, 14, 24
C56	1p2 ±0p25 SMD	3513 991 06001	04, 14, 24
C57	1p8 ±0p25 SMD	3513 991 06003	04, 14, 24
C58	2p2 ±0p25 SMD	3513 991 06004	
C59	18p ±5% SMD	3513 991 06015	04, 14, 24
C60	47p ±5% 50V SMD	3513 999 55321	
C61	1n ±10% 50V SMD	3513 999 55459	
C62	22 ±20% 25V elec	3513 991 00079	
C63	100n ±10% 50V SMD	3513 999 55498	
C64	15p ±5% 50V SMD	3513 999 55315	
C65	10 ±20% 63V elec	PS99445	
C66	10n ±10% SMD	3513 999 55492	
C67	18p ±5% 50V SMD	3513 999 55316	
C68	100p ±5% SMD	3513 999 55406	
C69	100n ±10% 50V SMD	3513 999 55498	
C70	150p ±5% 50V SMD	3513 999 55408	
C71	39p ±5% 50V SMD	3513 999 55401	
C72,73	100n ±10% 50V SMD	3513 999 55498	
C74	10 ±20% 63V elec	PS99445	
C75	100n ±10% 50V SMD	3513 999 55498	
C76	150p ±5% 50V SMD	3513 999 55408	
C77,78	100n ±10% 50V SMD	3513 999 55498	
C79	150p ±5% 50V SMD	3513 999 55408	
C80	27p ±5% 50V SMD	3513 999 55318	
C81,82	100n ±10% 50V SMD	3513 999 55498	

Cct Ref	Description	Part No	Remarks
Capacitors (Cont'd)			
C83	10n ±10%	SMD	3513 999 55492
C84	2n2 ±5% 50V	SMD	3513 999 55003
C85	1n5 ±5%		PN99901 /04
C86	33 ±20% 16V	elec	PS99409
C87	47p ±5% 50V	SMD	3513 999 55402
C88	1n ±5% 50V	SMD	3513 999 55418
C89	10n ±10%	SMD	3513 999 55492
C90-93	2n2 ±5% 50V	SMD	3513 999 55003
C94	100n ±10% 50V	SMD	3513 999 55498
C95,96	47p ±5% 50V	SMD	3513 999 55402
C98	1n ±5% 50V	SMD	3513 999 55418
C100	1n ±5% 50V	SMD	3513 999 55418
C101	47p ±5% 50V	SMD	3513 999 55321
C102	1n ±5% 50V	SMD	3513 999 55418
C103	1n ±10% 50V	SMD	3513 999 55459
C104,105	100n ±10% 50V	SMD	3513 999 55498
C106	47 ±20% 25V	elec	PS99423
C107	100n ±10% 50V	SMD	3513 999 55498
C108	33 ±20% 16V	elec	PS99409
C109	1n ±10% 50V	SMD	3513 999 55459
C110	47 ±20% 25V	elec	PS99423
C111,112	1n ±5% 50V	SMD	3513 999 55418
C113	100n ±10% 50V	SMD	3513 999 55498
C114	10n ±10%	SMD	3513 999 55492
C116	1n ±5% 50V	SMD	3513 999 55418
C117,118	10n ±10%	SMD	3513 999 55492
C119	33 ±20% 16V	elec	PS99409
C120	10n ±10%	SMD	3513 999 55492
C121	33 ±20% 16V	elec	PS99409
C122	100n ±10% 50V	SMD	3513 999 55498
C124-131	1n ±5% 50V	SMD	3513 999 55418
C132	1n ±10% 50V	SMD	3513 999 55459
C133	10n ±10%	SMD	3513 999 55492
C134	33 ±20% 16V	elec	PS99409
C135	100n ±10% 50V	SMD	3513 999 55498
C136	1n ±5% 50V	SMD	3513 999 55418
C138-140	10n ±10%	SMD	3513 999 55492
C143	10n ±10%	SMD	3513 999 55492
C145	18p ±5% 50V	SMD	3513 999 55316
C146	1n ±5% 50V	SMD	3513 999 55418
C147	18p ±5% 50V	SMD	3513 999 55316
C148	82p ±5% 50V	SMD	3513 999 55405
C151	68p ±5% 50V	SMD	3513 999 55323
CV1,2	1p5-14p Cap var		3513 991 04042
CV3	2p-18p Cap var PCB mtg		PV99006
CV4-6	2p-9p Cap var PCB mtg		3513 991 04046
Inductors			
L1	Coil 0p389 violet		FT06435
L2	1 ±10%	SMD	3513 999 98041
L3	Coil assy		3513 509 00281
L4	1 ±10%	SMD	3513 999 98041
L5	120n ±10%	SMD	3513 999 98059
L6,7	Coil 21,4MHz 332pn-1661		2422 535 97264
L8	1p5 ±10% Choke RF min		FT99103
L9-11	Coil		3513 509 00351
L13	15 ±10% Choke RF min		3513 993 22506
L14	1p5 ±10% Choke RF min		FT99103
L15	Coil 455kHz 5plc-1217z		4313 328 00031
L16-20	10 ±10%	SMD	3513 999 98092
L21	1p5 ±10% Choke RF min		FT99103
L22,23	Choke assy		AT31684
L25-31	10 ±10%	SMD	3513 999 98092
Miscellaneous			
PLA	Plug 15-way D rt angle		FP12115
PLB	Hdr str male 4 pos'n		3513 504 00151
PLC-E	Plug PCB mtd straight 2 x 8		FP99182
PLF	Plug PCB mtd rt angle 2 x 3		FP99175
SKA	Socket BNC type		FS43779
FL1	Xtal filt 21,4MHz-12,5kHz		2722 172 90049 /04
FL1	Xtal filt 21,4MHz-20kHz		2722 172 90074 /24
FL1	Xtal filt 21,4MHz-25kHz		2722 172 90024 /14
FL2	Cer filt 455kHz nom/12,5kHz		3513 993 56537 /04

Cct Ref	Description	Part No	Remarks
Miscellaneous (Cont'd)			
FL2	Cer filt 455kHz nom/25kHz	3513 993 56535	/14,24
FL3	Cer filt 455kHz nom/12,5kHz	3513 993 56537	/04
FL3	Cer filt 455kHz nom/25kHz	3513 993 56535	/14,24
XL1	Xtal 8,4MHz	3513 900 70081	
XL2	Xtal 20,945MHz	4313 320 90021	
	Bush Ins(T0-220)	3513 990 16014	1/IC12
	Can Screen Assembly	3513 504 04051	
	Can	FT03521	1/L32
	Cover	3513 901 10351	
	Nut st hex M3	2522 401 64008	2/PLA-PCB, 1/IC11, 1/IC12
	PCB Assembly Crystal Oven	AT28910/04	
	Pillar hexagon	BT04132	1/Xtal Oven
	Scr st pan pozi M3 x 10mm	QJ11903/X	2/PLA-PCB
	Scr st pan pozi M3 x 8mm	2522 178 20059	1/IC11, 1/IC12, 1/Xtal Oven-Pillar
	Screen	3513 906 20231	
	Socket modified to 14-way	BJ34101/14	2/IC10
	Socket Xtal	FS42611	2/XL1
	Washer Thermal To-220	3513 990 16254	1/IC12

**PCB ASSEMBLY CRYSTAL OVEN
AT28910/04**

TR1	Transistor power GP BD436	FV05886	
TR2	Transistor small signal BC327	FV05975	
R1	82 ±5% 0,25W c film	PM01423	
R2	108 ±5% 0,25W c film	PM01403	
C1	4n7 ±20% cer	PN99919	
TH1	Thermistor PTC 70°	PL23137	
	Mica insulator	BT36934/01	1/TR1 - heatsink
	Holder crystal (oven)	BT45138	
	Retainer	BT48021	
	Scr st pan pozi M2,5 x 5mm	QJ11944/B	
	Scr st pan pozi M2,5 x 6mm	QJ11945/B	