TRANSMITTER DRIVER MODULE
AT048881/-

INTRODUCTION

The transmitter driver module converts the processed audio from the control unit into a phase modulated signal to provide a nominal 1W RF output (2W on UHF) to the transmitter power amplifier. The module provides RF power monitoring and control circuits, modulation monitoring and RF fail detection. The oscillator crystal is temperature controlled using an oven assembly.

UNIT DESCRIPTION

These units produce a phase modulated output carrier of 2W minimum in the UHF bands, or 1W minimum in the VHF bands. Each channel frequency (up to a maximum of 128) is pre-programmed into the on-board PROM and is selected via the channel control lines C0 to C6 connected to the unit 'D' socket.
Selection of on-board links facilitates the unit alignment, and permits various customising options to be selected.

Customising links

By selection of on-board solder links the following options are available:-

(a) Frequency stability: (LK101-LK104,LK501)

(i) Output frequency locked to internal 10MHz ovened crystal only.
Link LK101 A-B.

(ii) Output frequency locked to internal 10MHz ovened crystal which is in turn locked to an externally-supplied 5MHz or 10MHz source.
Link LK101 B-C
LK102 A-C
LK103 A-B
LK501 connected
and either LK104 A-B for an external 10MHz source,
or LK104 A-C for an external 5MHz source.

(iii) Output frequency locked to internal 10MHz ovened crystal which is in turn locked to an externally supplied source of arbitrary frequency; this option requires an external phase-lock board.
Link LK101 B-C
LK102 A-B
LK103 B-C
LK104 A-B
LK501 not connected

(b) Deviation monitor (LK502)

External analogue metering of deviation or generation of logic alarm when deviation drops below a preset level.
Link LK502 A-B for analogue monitoring
or LK502 A-C for logic alarm output.

(c) Tx key mode (LK403)

(i) For use in single-frequency simplex systems, the key-off command can be used to switch off the modulation oscillator, thereby preventing interference to the common-frequency receiver. Key-on time however, is extended.
Link LK403 not connected.

(ii) For duplex systems the key-off command can be used to switch off the RF amplifier stages, whilst leaving the oscillator running, thereby reducing the key-on time.
Link LK403 connected.

Test and alignment links

The following links are used in the alignment of the unit, either to enable access to internal circuitry interfaces or to select the correct interconnections for the frequency band in use.

LK301 to LK307:- in position B-C these plug-in links connect the channel control lines of the PROM to the incoming lines C0 to C6 on the 'D' connector. When removed, they disconnect the external control, and can be used to selectively pull down the control lines by inserting in positions A-B.

LK308:- disconnects the offset oscillator output from the mixer input, enabling oscillator power output to be measured.

LK309:- insertion of this link permits access to the test frequencies within the PROM; removal allows access to the customer frequencies.

LK401, LK402:- select frequency injection high or frequency injection low, depending on the frequency band of operation. See 'TEST PROCEDURES, Preliminary' for linking details. (Applies to UHF bands only).

LK503:- disables the lock detector to ease alignment.

LK601 (UHF only):- link in permits amplifier tuning between 450 and 520MHz.

LK602:- opens the power amplifier gain control loop while stage alignment is in progress.

LK603:- disconnects the supply rail from the output amplifier stages when aligning the frequency generation stages.

LK604:- disconnects the modulation oscillator output from the PA input, enabling oscillator output power to be measured.

Unit Part Numbers

UHF Frequency bands U0, T1 and WM	: AT04881/05
VHF Frequency bands A9, B0	: AT04881/02
VHF Frequency band E0	: AT04881/04

CIRCUIT DESCRIPTION (Refer to Tx Driver Block Diagram Fig.1)

Power Supply

The 18V supply voltage on pin 15 of the 'D' connector is regulated down to +12V and +5V by IC502 and IV503 respectively. The presence of these two voltages is indicated by LED D503 being illuminated. In the event of a power supply loss an alarm is fed to the 'D' connector pin 5.

Reference Oscillator

The internal reference oscillator (component coding series 100) comprises a 10MHz crystal situated in a temperature controlled oven to give the required frequency stability. Optionally, the oscillator can be locked to an external high-stability source. The oscillator output is in the form of two square-wave signals of 1,25MHz and 625 kHz which are used as references for the offset and modulation loops respectively.

Offset Loop

The offset loop (component coding series 300) comprises a VCO (TR305 and TR306) the frequency of which is determined by the VCO control diodes. The VCO output is amplified and buffered by TR303 and TR304 to give a stage output of approximately -5dBm. A further amplifier and buffer (TR307 and TR308) are used to drive the prescaler (IC302) and the synthesizer (IC304). The feedback loop is completed by filter/amplifier IC303 which routes the error signals to the oscillator varicap diodes to control the oscillator frequency.

The required channels are selected on lines C0 to C6. These are routed to IC306 and IC307 and to the PROM IC305 which contains the customer channel information. This information used to control the divide ratios in the synthesizer, IC304.

The output frequency of the offset loop is 20MHz above the final RF frequency, except for UHF bands U0 and WM when it is 20MHz below the final frequency. For UHF bands only, selection of high or low injection is made by links LK401 and 402, these are not present on VHF bands. The offset loop output signal is fed to the RF port of mixer IC404.

Modulation Loop

The modulation loop (component coding series 400) comprises the final frequency VCO (TR417 and TR418) whose output is amplified and buffered by TR420, TR421 and TR422 to give an output level of approximately +15dBm to the output amplifier stages. A further buffer/amplifier feeds the output from the oscillator to the LO port of mixer IC404 at a level of +7dBm.

The difference signal between the modulation and offset VCOs (20MHz) from the mixer is taken via a 20MHz low-pass filter (L401-L404 and C401-C404 or C401-C408 on E band). After amplification by TR401, TR402 it is divided by 32 to 625kHz and fed (via LK401/LK402 on UHF bands only) to phase comparator IC401.

The 625kHz square wave from the reference oscillator is then width-modulated by the incoming audio signal, amplified and level-adjusted by IC403 and R473 respectively. This pulse-width modulation is accomplished by TR404-TR414 and D402-D407. The 625kHz width-modulated reference signal is then fed, via LK401 and LK402 (UHF bands only), into the other input of phase comparator IC401.

The error signal from IC401 is filtered in L405-L407 and C425-C427, amplified by TR415 and TR416 and fed to the VCO frequency control diodes D414-D417 (D413-D417 and D421 on E band) to lock the modulation oscillator to a frequency 20MHz away from that of the offset oscillator.

Loss of lock is signalled from IC401 to diodes D508 and D509 where it is combined with similar lock alarm signals from the synthesizer, the external frequency lock circuit and the oven warming alarm to produce a combined lock alarm which both drives an alarm LED (D512) and disables the RF output stages. D512 is illuminated for an 'in-lock' condition.

Output Stages

The RF signal from the modulation loop is delivered to the output amplifier at a level of +13dBm to +17dBm (typically +15dBm). A removable solder link (LK601) allows the input level at this point to be measured.

The signal is amplified in two wideband stages, TR604 and TR607. A toroidal directional coupler followed by a detector (D607) monitors the forward power, amplifies the rectified signal, and feeds it back to the collector of TR604 to provide automatic gain control. Power output is set by using R622 incorporated in the feedback loop. Failure of the loop to maintain the required output level is signalled by D609 being illuminated. This alarm is combined with the loop lock alarms to provide a unit alarm on pin 6 of the supply connector.

The coupler is followed by a low pass filter to remove the harmonics of the output signal. The carrier signal is then fed to the output BNC connector.

Alarms

The following unit frequency alarms are generated:-

(1) Oven cold alarm - indicates that the oven has not reached its operating temperature of 80°C.

(2) Offset loop lock alarm - indicates that the offset synthesizer loop has failed to lock.

(3) Modulation lock alarm - indicates that the modulation loop has not achieved lock.

(4) External source lock alarm - indicates that the internal 10 MHz oscillator is not locked to the incoming high stability source. This alarm is disabled by removing LK501 when an external hi-stab source is not being used.

These four alarms are combined to form a lock/oven alarm; LED512 will fail to illuminate if an alarm is present on any of them, and the RF amplifiers will be inhibited. In the single frequency simplex case (LK403 out) the modulation oscillator will also be inhibited. LK505 allows the lock/oven alarm to be inhibited whilst alignment is in progress.

A power alarm is generated should the output stages fail to deliver the power required of them by the setting of power control R622. This alarm illuminates LED609.

The lock/oven alarm is combined with the power alarm to give a transmitter driver alarm. This appears on SK501 pin 6.

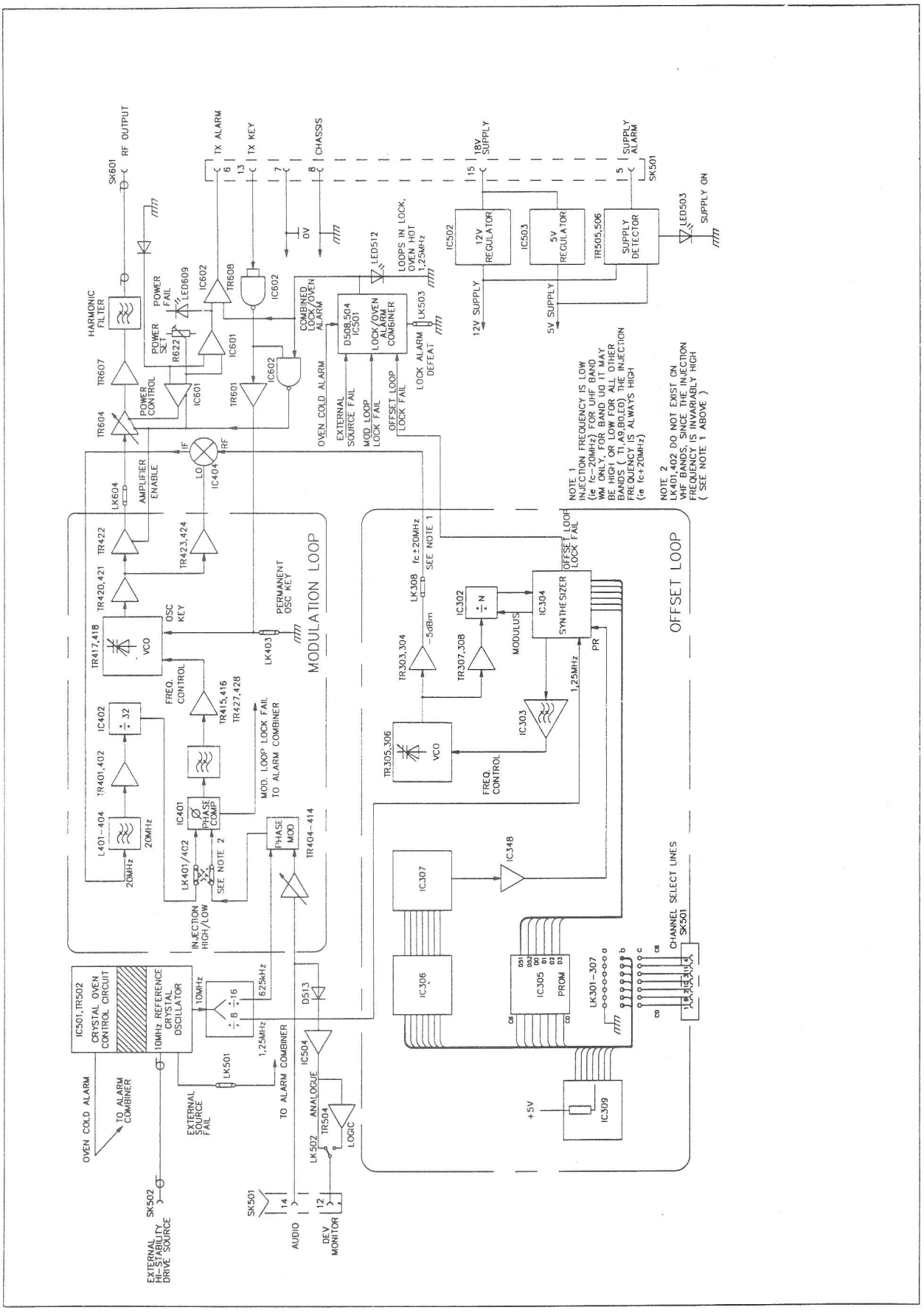


Fig.1 Tx Driver Block Diagram

SPECIFICATION

Frequency range	:	66 - 88MHz (E band) 132 - 174MHz (VHF bands A & B) 405 - 520MHz (U,T,W Bands)
Power output	:	2,0W minimum(UHF); 1,0W minimum(VHF)
Temperature range	:	-30°C to +60°C
Channel capacity	:	1 to 127
Switched bandwidth	:	±2,25%
Duty cycle	:	100%
Frequency stability	:	-46dB relative to 60% deviation, de-emphasis and psophometric weighting characteristics
Frequency response	:	±0,5dB 300Hz to 9kHz. 2dB variation 60Hz to 300Hz
Supply Input		18V ±0,5V at 800mA maximum

TEST PROCEDURE

Test Equipment

Description		Type
Digital Voltmeter	:	Fluke 77 or equivalent
DC PSU (18V,1A)	:	
DC PSU (0 - 14V variable)	:	
Temperature probe	:	
Spectrum analyser	:	Advantest R4131B or equivalent
Oscilloscope and probe	:	
Audio signal generator	:)	
RF power meter	:)	
Modulation meter	:)-	Stabilock 4040 or equivalent
Frequency counter	:)	discrete instruments
20dB attenuator, 5W	:)	
Test Jig	:	See Fig.2

Preliminary

Note: (i) In the following procedure, for ease of location, the top side of the PCB is referred to as side 'a' denoted [a]; and the underside side 'b' denoted [b]. Component layout positioning is shown in relevant layout diagram.

(ii) Throughout the following alignment procedure, it is necessary to add and remove solder links, this should only be done with the equipment disconnected from the supply.

(iii) A frequency/options print-out specific to the unit is supplied with the unit, this should provides the following information:-
(a) Tx and Rx frequencies in both decimal and binary format.
(b) Centre and extreme test frequencies in the same format.
(c) A 17-digit code which supplies the relevant information for quasi-sync options as detailed in under 'Customisation'.

1 Remove unit cover (if fitted).

2 Remove internal screen covers (if fitted).

3 Remove the PCB from the casting.

4 Link LK101 A-B, LK102 A-C [a], LK103 A-B [b], LK104 A-C [b], LK308 [a], LK403 [a], LK502 A-B [b], LK503 [a] and LK604 [a].

5 Fit links LK301 to LK307 [a] in position B-C.

6 Open solder links LK602 and LK603, and, for UHF equipments operating below 440MHz, open solder link LK601.

7 For UHF equipment only, by examination of the customer required operating frequencies ensure that LK401 and LK402 are fitted according to the table below:

Customer Frequency Range (Fc)	400-<440MHz	440-520MHz
Insert links;	LK401 a-c LK402 b-d	LK401 a-b LK402 c-d
Offset loop frequency	Fc + 20MHz	Fc - 20MHz

8 Fit plug-in link LK309 to access the test frequencies. Using switches C0 to C6 on the test jig, select the test frequency closest to the customer required centre frequency.

Power Supply

1 Connect the 18V DC power supply to PLA via the test jig and switch on. Check the supply current is less than or equal to 870mA and that LED503 is lit.

2 Ensure that supply current drops below 400mA within 4 minutes of switch-on with Tx keyed off.

Reference Oscillator

1. Using the temperature probe, check that the crystal oven temperature is 80°C ±2°C.

2 Connect the frequency counter, oscilloscope or spectrum analyser via a probe to TP101 [a] and check for approximately 1,25MHz.

Offset Loop

1 Connect a voltmeter to IC303 pin 6, and adjust C362 (L303 on E Band) for 8,0V

Modulation Loop

1 Key the transmitter on using the test jig.

2 Connect a voltmeter to the collector of TR415, and adjust C4100 (UHF) or C474 (VHF A,B) or L409 (E band) for 7,5V

3 Switch off the supply and remove LK503. Switch the supply on, and check that LED512 comes on after a short period, indicating that the two loops are locked and the oven has reached operating temperature.

4 Using switches C0 to C6 on the test jig, select the test frequencies 2,25% above and below the centre frequency in turn (note that these frequencies, together with their binary channel number appear on the information sheet) and ensure that LED512 remains illuminated, indicating that both loops remain in lock. Return to the centre frequency.

Output Stages

1 Switch off the supply, make solder links LK602 and LK603 and turn R622 fully clockwise. For UHF equipment operating in the range 440-520MHz only, make solder link LK601.

2 Key the transmitter and ensure that LED D609 illuminates and that the Test Jig LED indicates a Tx fail. Allow the oven to warm up.

3 Connect the BNC output connector via the Stabilock internal attenuator to the spectrum analyser.

4 **UHF band 400-440MHz only;** select the lowest test frequency within the required switched bandwidth.

5 Tune the following variable capacitors for maximum output
UHF; C647, C636
VHF A,B; C611, C636
VHF E; C613, C635

6 Adjust R622 for output of 2,5W (UHF) or 1,5W (VHF).

7 Connect a voltmeter to TR606 collector and tune the following variable capacitor for a maximum voltage:-
UHF C647
VHF A,B; C611
VHF E; C613

8 **UHF and VHF A and B only;** tune C637 for maximum output and then reduce the output by 1dB using the same trimmer.

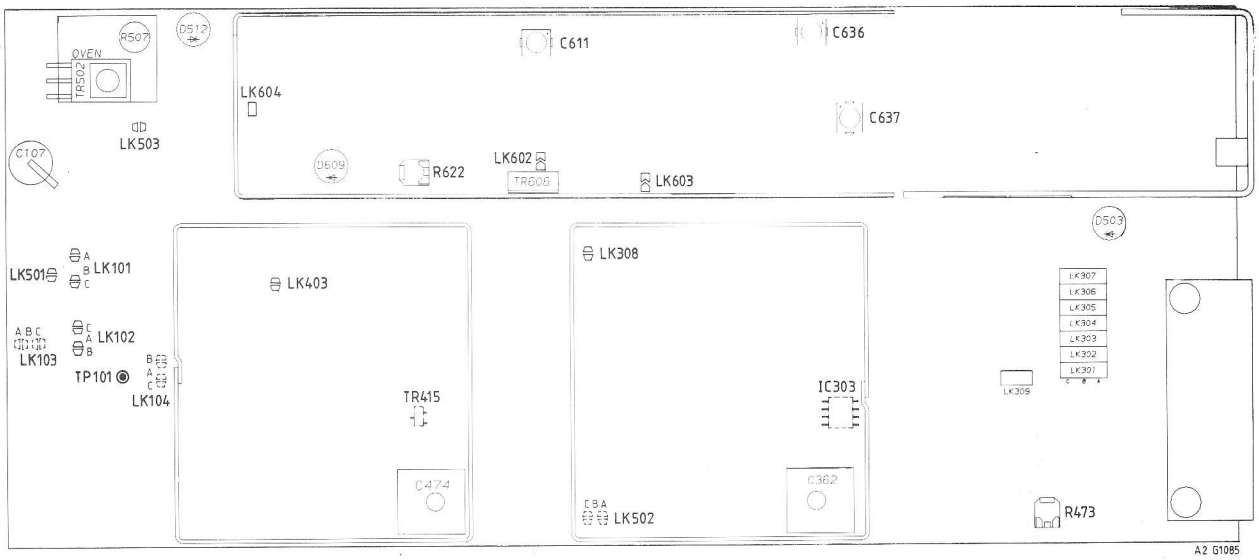
9 Using R622 set the power output to 2,5W (UHF) or 1,5W (VHF).

10 Check that the LED D609 remains off and that the output at the centre and extremes of the switched bandwidth is always greater than 2,0W (UHF) or 1,0W (VHF).

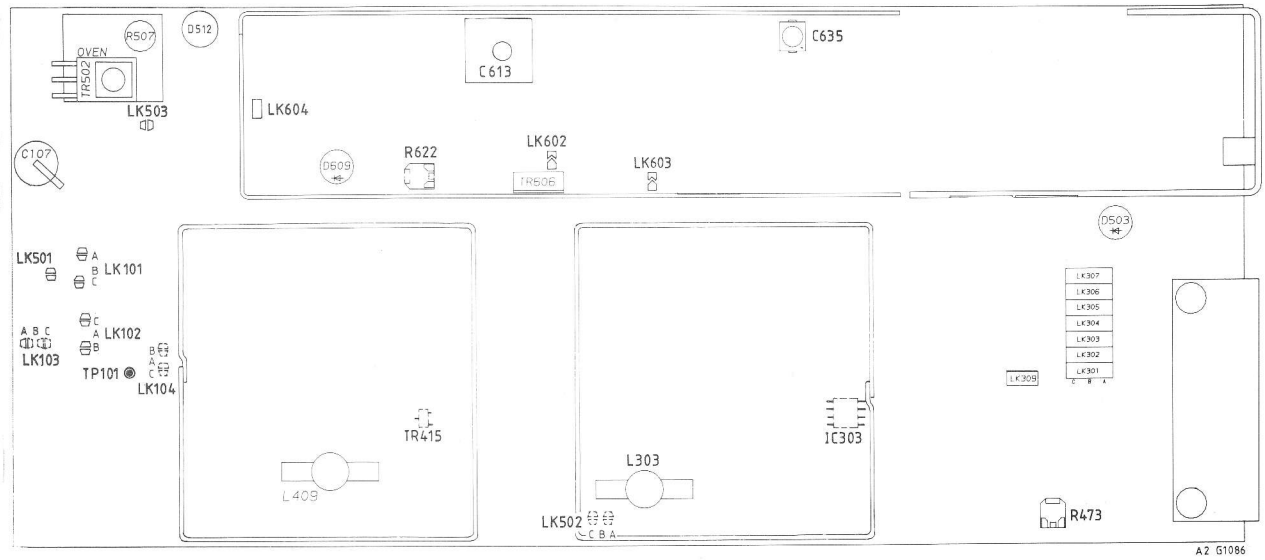
Modulation Tests

1 Connect an audio signal generator (600Ω o/p, 300mV rms at 1kHz) to the audio input of the test jig.

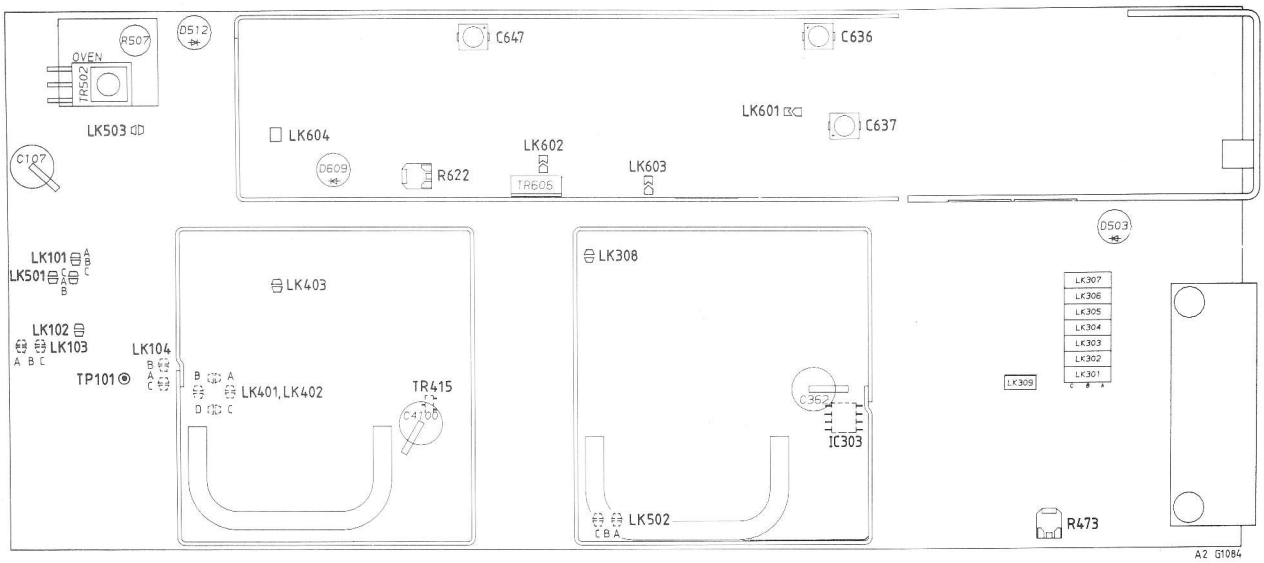
2 Connect the RF output via a suitable attenuator to a deviation meter tuned to the customer centre frequency.



Tx Driver A and B Bands Alignment Diagram



Tx Driver E Band Alignment Diagram



Tx Driver UHF Alignment Diagram

Note: Components and Links on underside of PCB shown dotted

3 Key the Tx on. Using R473 set the deviation to 60% of the maximum system deviation. Adjust the fequency to 60Hz, 300Hz and 10kHz in turn; check that the deviation is within the limits shown below:-

60Hz;	3kHz	±0,8kHz
300kHz;	3kHz	±0,2kHz
10kHz;	3kHz	±0,2kHz

4 Remove the audio input signal.

External Frequency Source

1 Make solder link LK501 [a], and reset LK101 [a] from A-B to B-C.

2 Connect a 5MHz source (5V p-p) to the external reference input.

3 With the external source connected, ensure that the voltage on LK501 is 4,0V or greater and that LED512 is illuminated.

4 Remove the external source and ensure that LED512 is extinguished and that the voltage on LK501 drops to 2,5V or less.

Customisation

1 **Quasi-synchronous Option**

Set the links as detailed below to select the Option required:-

A Secondary option 1, code 0 - Quasi-synchronous operation not required; open solder link LK501 and link LK101 A-B.

B Secondary option 1, code 1 - Quasi-synchronous operation with 10MHz external source; fit the following links:- LK101 B-C; LK102 A-C; LK103 A-B LK104 A-B; LK501 in.

C Secondary option 1, code 2 - Quasi-synchronous operation with 5MHz external source; fit the following links:-LK101 B-C; LK102 A-C; LK103 A-B; LK104 A-C; LK501 in.

D Secondary option 1, code 3 - Quasi-synchronous operation with arbitrary external source; fit the following links:- LK101 B-C; LK102 A-B; LK103 B-C; LK501 out.

2 **Tx Key Mode**

Set the links as detailed below to select the Option required:-

A Single frequency simplex operation; LK403 not fitted.

B Two-frequency simplex or duplex operation; LK403 fitted.

3 Deviation Monitoring

Either a logic alarm output when the deviation drops below a preset value, or an analogue output for metering purposes can be selected. Unless specific instructions to the contrary are requested, the analogue metering output Option should be selected.

A Deviation logic alarm output; link LK502 A-C

B Deviation analogue metering output; link LK502 A-B

Conclusion

1 Switch off the supply, remove LK309, secure the unit into its casting, secure the covers on the screens, reconnect the supply and recheck the power at the customer extreme frequencies.

2 Connect the RF output to a frequency counter and switch on. Ensure that the unit has been continously powered for at least 4 minutes.

3 Adjust C107[a] for the nominal selected frequency within ±0,5ppm. Fit the cover on the unit, and ensure that the frequency remains within these limits. Switch off the power and remove the tested unit from the test jig.

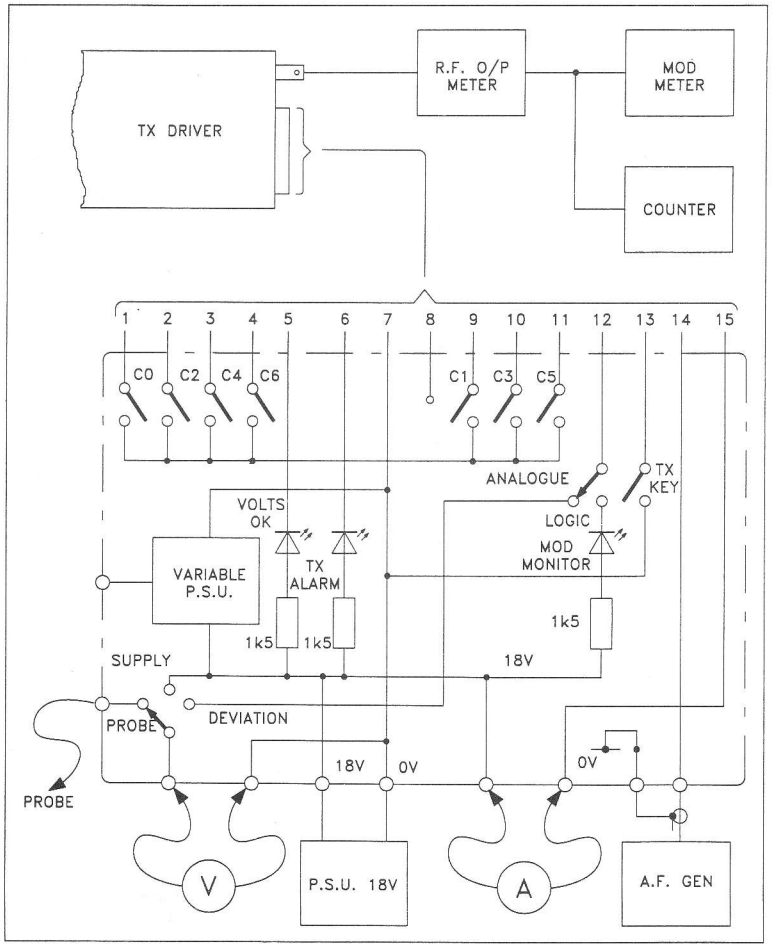


Fig.2 Transmitter Driver Test Jig

TRANSMITTER TEST FREQUENCIES.

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

TABLE 1 (Part)

Channel	Switch position 10	11	12	13	14	15	16	'Test freq' MHz U,T,W Bands	'Test freq' MHz A,B Bands	'Test freq' 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 10	11	12	13	14	15	16	'Test freq' MHz U,T,W Bands	'Test freq' MHz A,B Bands	'Test freq' 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 10	11	12	13	14	15	16	'Test freq' MHz U,T,W Bands	'Test freq' MHz A,B Bands	'Test freq' 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	

TX DRIVER MODULE SYNTHESIZED
AT04881/-

Cct Ref	Description	Part No	Remarks
	PCB Assy Tx Driver VHF	AT29080/02	/02 See Separate Headed List
	PCB Assy Tx Driver VHF	AT29082/04	/04 See Separate Headed List
	PCB Assy Tx Driver UHF	AT29077/05	/05 See Separate Headed List
SK101	Receptacle jack	FS48031	
	Box modified	4313 328 30171	
	Bush insulating	3513 990 16014	2/PA heatsink-chassis
	Cable 50Ω co-axial	FC09031	
	Cover plate rear	BT15913	
	Front panel assy Tx	AT14819	
	Insulator	3513 902 50141	1/PA heatsink-chassis
	Label alignment frequency	BT38238	
	Label unit	BT38209/01	
	Lid sealed box	BT13800	
	Seal RF	BT29999	
	Tag	FT00094	/02,04; 2/H'sink plate earthing
	Nut st hex M2,5	QA11604/X	2/PA heatsink-chassis
	Scr st pan pozi M2,5 x 8mm	QJ11946/X	2/PA heatsink-chassis
	Scr st pan pozi M3 x 4mm	QJ11913/X	/02,04; 2/Heatsink-plate assy
	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	
	Scr st tap pozi No.4 x 6,5mm	QJ08227/X	2/Reg heatsink-chassis

FRONT PANEL ASSEMBLY TX
AT14819

	Fastener	BT17284	2/Tx-shelf
	Handle	BT35949	
	Label Philips	BT38216/01	1/Handle
	Label Tx	BT38205/02	1/Handle
	Panel front	BT23740	
	Scr st tap pozi No.4 x 8mm	QJ08241/X	2/Handle-front panel

PCB ASSEMBLY TX DRIVER VHF
AT29080/02

Semiconductors & ICs

IC101	IC 74HC4046	SMD	3513 999 50060
IC102	IC 74HC14-HDL	SMD	3513 999 50056
IC103	IC 74HC4024	SMD	3513 999 50038
IC302	IC MB501LFP		3508 100 16310
IC303	IC TL071ID	SMD	9338 369 60685
IC304	IC NJ8820GG	SMD	4313 324 70001
IC305	PROM assembly programmed		AT60171
IC306	IC 74HC574	SMD	3513 999 50027
IC307	IC 74HC688	SMD	3513 999 50034
IC308	IC 74HC126	SMD	3513 999 50069
IC309	10k ±5% 9-pin sil		RN99528
IC402	IC 74HC4024	SMD	3513 999 50038
IC403	IC TL072ID	SMD	9338 369 30685
IC404	Mixer rms1	SMD	2722 162 90133
IC501	IC LM258	SMD	3513 999 45008
IC502	IC 7812 Volt reg & fix		FU99109
IC503	IC 7805 Volt reg & fix		3513 993 34014
IC504	IC LM324-HDL	SMD	3513 999 45005
IC601	IC LM324-HDL	SMD	3513 999 45005
IC602	IC 74HC00	SMD	3513 999 50000
IC603	IC LM317		FU99119
TR101	Transistor BFT92	SMD	3513 999 00010
TR102,103	Transistor BFR93	SMD	3513 999 00027
TR104,105	Transistor BCW72	SMD	3513 999 00015
TR106	Transistor BFR93	SMD	3513 999 00027
TR301	Transistor BCV62	SMD	9336 772 30215
TR302	Transistor BCW72	SMD	3513 999 00015
TR303-308	Transistor BFR93	SMD	3513 999 00027
TR401	Transistor BCW70	SMD	3513 999 00003
TR402	Transistor BFR93	SMD	3513 999 00027
TR404	Transistor BCV62	SMD	9336 772 30215
TR406	Transistor BFQ17	SMD	3513 999 00022
TR407-412	Transistor BCW72	SMD	3513 999 00015
TR413	Transistor BCW70	SMD	3513 999 00003
TR414	Transistor BFT92	SMD	3513 999 00010
TR415,416	Transistor BCW72	SMD	3513 999 00015
TR417	Transistor BFR93	SMD	3513 999 00027

Cct Ref	Description	Part No	Remarks
Semiconductors & ICS (Cont'd)			
TR418	Transistor BCV62 SMD	9336 772 30215	
TR420	Transistor BFR93 SMD	3513 999 00027	
TR422-424	Transistor BFR93 SMD	3513 999 00027	
TR425	Transistor BCW72 SMD	3513 999 00015	
TR426	Transistor BCW70 SMD	3513 999 00003	
TR427	Transistor BCW72 SMD	3513 999 00015	
TR428	Transistor BCV62 SMD	9336 772 30215	
TR429	Transistor BCW72 SMD	3513 999 00015	
TR501	Transistor BCW72 SMD	3513 999 00015	
TR502	Transistor BD437 Power GP	FV05887	
TR503,504	Transistor BCX19	3513 999 00016	
TR505	Transistor BCW70 SMD	3513 999 00003	
TR506-508	Transistor BCW72 SMD	3513 999 00015	
TR601-603	Transistor BCW72 SMD	3513 999 00015	
TR604	Transistor BFQ17 SMD	3513 999 00022	
TR605	Transistor BCW72 SMD	3513 999 00015	
TR606	Transistor BD437	FV05887	
TR607	Transistor BLY87C	9333 262 90112	
TR608,609	Transistor BCW72 SMD	3513 999 00015	
D101	Diode BBY31 SMD	3513 999 25000	
D102,103	Diode BAV99 SMD	3513 999 15002	
D105	Diode BAV99 SMD	3513 999 15002	
D301-303	Diode BBY40 SMD	3513 999 25001	
D305,306	Diode BAV99 SMD	3513 999 15002	
D307	Diode BBY40 SMD	3513 999 25001	
D308	Diode BBY31 SMD	3513 999 25000	
D401	Diode BAT17	3513 999 15006	
D402	Diode BAV99 SMD	3513 999 15002	
D404	Diode BZX84C2V7	3513 999 20001	
D405,406	Diode BAV99 SMD	3513 999 15002	
D407	Diode BAT17	3513 999 15006	
D409	Diode BAV99 SMD	3513 999 15002	
D410	Diode BBY31 SMD	3513 999 25000	
D412	Diode BAV99 SMD	3513 999 15002	
D414,415	Diode BBY40 SMD	3513 999 25001	
D418,419	Diode HSMP-3820	9313 000 03683	
D420,421	Diode BAV99 SMD	3513 999 15002	
D501,502	Diode BAV99 SMD	3513 999 15002	
D503	Led green	3513 993 47002	
D504	Diode BZX84C6V8	3513 999 20011	
D505	Diode BZX84C2V7	3513 999 20001	
D506,507	Diode BAV99 SMD	3513 999 15002	
D508,509	Diode BAW56	3513 999 15001	
D510	Diode BZX84C6V2 M C	3513 999 20010	
D511	Diode BAV99 SMD	3513 999 15002	
D512	Led green	3513 993 47002	
D513	Diode BAV99 SMD	3513 999 15002	
D514	Led red	3513 993 46000	
D601	Diode BAW56	3513 999 15001	
D603	Diode BAV99 SMD	3513 999 15002	
D604	Diode BZX84C8V2	3513 999 20013	
D605	Diode BZX84C5V6	3513 999 20009	
D606	Diode BZX84C6V8	3513 999 20011	
D607,608	Diode BAT17	3513 999 15006	
D609	Led red	3513 993 46000	
D610	Diode BZX84C8V2	3513 999 20013	
D611,612	Diode BAV99 SMD	3513 999 15002	
Resistors			
R101	820 ±2% 0,1W SMD	3513 999 80223	
R102	12k ±2% 0,1W SMD	3513 999 80237	
R103	680 ±2% 0,1W SMD	3513 999 80222	
R104	100 ±2% 0,1W SMD	3513 999 80212	
R105,106	1k ±2% 0,1W SMD	3513 999 80224	
R107	3k9 ±2% 0,1W SMD	3513 999 80231	
R108	820 ±2% 0,1W SMD	3513 999 80223	
R109	100 ±2% 0,1W SMD	3513 999 80212	
R110,111	470 ±2% 0,1W SMD	3513 999 80220	
R112	10k ±2% 0,1W SMD	3513 999 80236	
R114	47k ±2% 0,1W SMD	3513 999 80244	
R115	120 ±2% 0,1W SMD	3513 999 80213	
R116,117	4k7 ±2% 0,1W SMD	3513 999 80232	
R118	100k ±2% 0,1W SMD	3513 999 80248	
R119	2k2 ±2% 0,1W SMD	3513 999 80228	
R120	4k7 ±2% 0,1W SMD	3513 999 80232	

Cct Ref	Description				Part No	Remarks
Resistors (Cont'd)						
R121,122	2k2	±2%	0,1W	SMD	3513 999 80228	
R123	820	±2%	0,1W	SMD	3513 999 80223	
R127	1k	±2%	0,1W	SMD	3513 999 80224	
R128	6k8	±2%	0,1W	SMD	3513 999 80234	
R129	1k8	±2%	0,1W	SMD	3513 999 80227	
R130	47	±2%	0,1W	SMD	3513 999 80208	
R131	390	±2%	0,1W	SMD	3513 999 80219	
R132	1k	±2%	0,1W	SMD	3513 999 80224	
R133	4k7	±2%	0,1W	SMD	3513 999 80232	
R134	100	±2%	0,1W	SMD	3513 999 80212	
R135	1k	±2%	0,1W	SMD	3513 999 80224	
R136	10k	±2%	0,1W	SMD	3513 999 80236	
R301	33	±2%	0,1W	SMD	3513 999 80206	
R302	100	±2%	0,1W	SMD	3513 999 80212	
R303	2k2	±2%	0,1W	SMD	3513 999 80228	
R304	22k	±2%	0,1W	SMD	3513 999 80240	
R305,306	3k3	±2%	0,1W	SMD	3513 999 80230	
R307	1k8	±2%	0,1W	SMD	3513 999 80227	
R308	100	±2%	0,1W	SMD	3513 999 80212	
R309	8k2	±2%	0,1W	SMD	3513 999 80235	
R310	100	±2%	0,1W	SMD	3513 999 80212	
R311	68	±2%	0,1W	SMD	3513 999 80210	
R312	220	±2%	0,1W	SMD	3513 999 80216	
R313	100	±2%	0,1W	SMD	3513 999 80212	
R314	1k8	±2%	0,1W	SMD	3513 999 80227	
R315	5k6	±2%	0,1W	SMD	3513 999 80233	
R316	120	±2%	0,1W	SMD	3513 999 80213	
R317,318	68	±2%	0,1W	SMD	3513 999 80210	
R319	100	±2%	0,1W	SMD	3513 999 80212	
R320	68	±2%	0,1W	SMD	3513 999 80210	
R322	220	±2%	0,1W	SMD	3513 999 80216	
R323	270	±2%	0,1W	SMD	3513 999 80217	
R324	1k8	±2%	0,1W	SMD	3513 999 80227	
R325	5k6	±2%	0,1W	SMD	3513 999 80233	
R326	100	±2%	0,1W	SMD	3513 999 80212	
R327,328	150	±2%	0,1W	SMD	3513 999 80214	
R329	390	±2%	0,1W	SMD	3513 999 80219	
R330-332	10k	±2%	0,1W	SMD	3513 999 80236	
R333	1M	±2%	0,1W	SMD	3513 999 80260	
R334	3k9	±2%	0,1W	SMD	3513 999 80231	
R335	22k	±2%	0,1W	SMD	3513 999 80240	
R337,338	10k	±2%	0,1W	SMD	3513 999 80236	
R339	22k	±2%	0,1W	SMD	3513 999 80240	
R340	10k	±2%	0,1W	SMD	3513 999 80236	
R347	1k5	±2%	0,1W	SMD	3513 999 80226	
R348	10k	±2%	0,1W	SMD	3513 999 80236	
R357,358	10k	±2%	0,1W	SMD	3513 999 80236	
R360	10k	±2%	0,1W	SMD	3513 999 80236	
R361	12k	±2%	0,1W	SMD	3513 999 80237	
R364-371	10k	±2%	0,1W	SMD	3513 999 80236	
R372	1m	±2%	0,1W	SMD	3513 999 80260	
R373	10k	±2%	0,1W	SMD	3513 999 80236	
R401	47	±2%	0,1W	SMD	3513 999 80208	
R402	56	±2%	0,1W	SMD	3513 999 80209	
R403	1k	±2%	0,1W	SMD	3513 999 80224	
R404	2k7	±2%	0,1W	SMD	3513 999 80229	
R405	100	±2%	0,1W	SMD	3513 999 80212	
R406,407	1k	±2%	0,1W	SMD	3513 999 80224	
R408	220	±2%	0,1W	SMD	3513 999 80216	
R409	10k	±2%	0,1W	SMD	3513 999 80236	
R410	3k9	±2%	0,1W	SMD	3513 999 80231	
R411	560	±2%	0,1W	SMD	3513 999 80221	
R412	1k	±2%	0,1W	SMD	3513 999 80224	
R413	8k2	±2%	0,1W	SMD	3513 999 80235	
R414-416	470	±2%	0,1W	SMD	3513 999 80220	
R417	2k2	±2%	0,1W	SMD	3513 999 80228	
R418	100	±2%	0,1W	SMD	3513 999 80212	
R419	22k	±2%	0,1W	SMD	3513 999 80240	
R420	47	±2%	0,1W	SMD	3513 999 80208	
R421,422	10k	±2%	0,1W	SMD	3513 999 80236	
R423	3k3	±2%	0,1W	SMD	3513 999 80230	
R427	470	±2%	0,1W	SMD	3513 999 80220	
R428	330	±2%	0,1W	SMD	3513 999 80218	
R429	390	±2%	0,1W	SMD	3513 999 80219	
R430	220	±2%	0,1W	SMD	3513 999 80216	
R431-433	1k	±2%	0,1W	SMD	3513 999 80224	

Cct Ref	Description				Part No	Remarks
Resistors (Cont'd)						
R434	1k5	±2%	0,1W	SMD	3513 999 80226	
R436	330	±2%	0,1W	SMD	3513 999 80218	
R437	22k	±2%	0,1W	SMD	3513 999 80240	
R438	100	±2%	0,1W	SMD	3513 999 80212	
R439	22k	±2%	0,1W	SMD	3513 999 80240	
R440	2k2	±2%	0,1W	SMD	3513 999 80228	
R441	100	±2%	0,1W	SMD	3513 999 80212	
R442	33	±2%	0,1W	SMD	3513 999 80206	
R444	1k8	±2%	0,1W	SMD	3513 999 80227	
R445	270	±2%	0,1W	SMD	3513 999 80217	
R446	100	±2%	0,1W	SMD	3513 999 80212	
R447	220	±2%	0,1W	SMD	3513 999 80216	
R448	100	±2%	0,1W	SMD	3513 999 80212	
R450	220	±2%	0,1W	SMD	3513 999 80216	
R451,452	10k	±2%	0,1W	SMD	3513 999 80236	
R453	33	±2%	0,1W	SMD	3513 999 80206	
R454	820	±2%	0,1W	SMD	3513 999 80223	
R455	39	±2%	0,1W	SMD	3513 999 80207	
R456,457	150	±2%	0,1W	SMD	3513 999 80214	
R458	5k6	±2%	0,1W	SMD	3513 999 80233	
R459	1k8	±2%	0,1W	SMD	3513 999 80227	
R460	270	±2%	0,1W	SMD	3513 999 80217	
R461	10k	±2%	0,1W	SMD	3513 999 80236	
R462	33	±2%	0,1W	SMD	3513 999 80206	
R463	5k6	±2%	0,1W	SMD	3513 999 80233	
R464	220	±2%	0,1W	SMD	3513 999 80216	
R465	100	±2%	0,1W	SMD	3513 999 80212	
R466-468	22k	±2%	0,1W	SMD	3513 999 80240	
R469,470	10k	±2%	0,1W	SMD	3513 999 80236	
R471	270k	±2%	0,1W	SMD	3513 999 80253	
R472	6k8	±2%	0,1W	SMD	3513 999 80234	
R473	10k	±25%	Pot cermet		3513 999 95007	
R474	100k	±2%	0,1W	SMD	3513 999 80248	
R478	5k6	±2%	0,1W	SMD	3513 999 80233	
R479	100	±2%	0,1W	SMD	3513 999 80212	
R480	47	±2%	0,1W	SMD	3513 999 80208	
R482	68	±2%	0,1W	SMD	3513 999 80210	
R484	100	±2%	0,1W	SMD	3513 999 80212	
R485	220	±2%	0,1W	SMD	3513 999 80216	
R486	10k	±2%	0,1W	SMD	3513 999 80236	
R487	470	±2%	0,1W	SMD	3513 999 80220	
R488	150	±2%	0,1W	SMD	3513 999 80214	
R489	68	±2%	0,1W	SMD	3513 999 80210	
R491	10k	±2%	0,1W	SMD	3513 999 80236	
R492	47k	±2%	0,1W	SMD	3513 999 80244	
R493,494	10k	±2%	0,1W	SMD	3513 999 80236	
R495	10	±2%	0,1W	SMD	3513 999 80200	
R501	1k	±2%	0,1W	SMD	3513 999 80224	
R502	820k	±2%	0,1W	SMD	3513 999 80259	
R503	680	±2%	0,1W	SMD	3513 999 80222	
R504	470k	±2%	0,1W	SMD	3513 999 80256	
R505	100	±2%	0,1W	SMD	3513 999 80212	
R506	56k	±2%	0,1W	SMD	3513 999 80245	
R507	Thermistor 70°C				PL23137	
R508	4Ω7	±5%	0,125W	SMD	3513 999 80008	
R509	100k	±2%	0,1W	SMD	3513 999 80248	
R510	100	±2%	0,1W	SMD	3513 999 80212	
R511	470	±2%	0,1W	SMD	3513 999 80220	
R512	15k	±2%	0,1W	SMD	3513 999 80238	
R513	3k3	±2%	0,1W	SMD	3513 999 80230	
R514-516	10k	±2%	0,1W	SMD	3513 999 80236	
R517	6k8	±2%	0,1W	SMD	3513 999 80234	
R518	1M	±2%	0,1W	SMD	3513 999 80260	
R519	3k3	±2%	0,1W	SMD	3513 999 80230	
R520	100k	±2%	0,1W	SMD	3513 999 80248	
R521	100k	±2%	0,1W	SMD	3513 999 80248	
R522	1k	±2%	0,1W	SMD	3513 999 80224	
R523	3k9	±2%	0,1W	SMD	3513 999 80231	
R524	470	±2%	0,1W	SMD	3513 999 80220	
R525	390	±2%	0,1W	SMD	3513 999 80219	
R526	4k7	±2%	0,1W	SMD	3513 999 80232	
R527	100k	±2%	0,1W	SMD	3513 999 80248	
R528	56k	±2%	0,1W	SMD	3513 999 80245	
R529	39k	±2%	0,1W	SMD	3513 999 80243	
R530	27k	±2%	0,1W	SMD	3513 999 80241	
R531	47k	±2%	0,1W	SMD	3513 999 80244	

Cct Ref	Description				Part No	Remarks
Resistors (Cont'd)						
R532	4k7	±2%	0,1W	SMD	3513 999 80232	
R533	10k	±2%	0,1W	SMD	3513 999 80236	
R534	47k	±2%	0,1W	SMD	3513 999 80244	
R535	100k	±2%	0,1W	SMD	3513 999 80248	
R536,537	2k2	±2%	0,1W	SMD	3513 999 80228	
R538,539	1k5	±2%	0,1W	SMD	3513 999 80226	
R540	220	±2%	0,1W	SMD	3513 999 80216	
R541,542	2k2	±2%	0,1W	SMD	3513 999 80228	
R547	680k	±2%	0,1W	SMD	3513 999 80258	
R543-545	4Ω7	±5%	0,125W	SMD	3513 999 80008	
R601	10k	±2%	0,1W	SMD	3513 999 80236	
R602	1k	±2%	0,1W	SMD	3513 999 80224	
R603-606	10k	±2%	0,1W	SMD	3513 999 80236	
R607	5k6	±2%	0,1W	SMD	3513 999 80233	
R608	2k2	±2%	0,1W	SMD	3513 999 80228	
R609	1k	±2%	0,1W	SMD	3513 999 80224	
R610	10k	±2%	0,1W	SMD	3513 999 80236	
R611	270	±2%	0,1W	SMD	3513 999 80217	
R612	18	±2%	0,1W	SMD	3513 999 80203	
R613	270	±2%	0,1W	SMD	3513 999 80217	
R614	33	±2%	0,1W	SMD	3513 999 80206	
R615	10	±2%	0,1W	SMD	3513 999 80200	
R616	680	±2%	0,1W	SMD	3513 999 80222	
R617-619	33k	±2%	0,1W	SMD	3513 999 80242	
R620	10k	±2%	0,1W	SMD	3513 999 80236	
R622	10k	±25%	Pot cermet		3513 999 95007	
R623	27k	±2%	0,1W	SMD	3513 999 80241	
R625	100k	±2%	0,1W	SMD	3513 999 80248	
R626	390	±2%	0,1W	SMD	3513 999 80219	
R627	10	±2%	0,1W	SMD	3513 999 80200	
R630	47	±2%	0,1W	SMD	3513 999 80208	
R631,632	2k7	±2%	0,1W	SMD	3513 999 80229	
R633	12k	±2%	0,1W	SMD	3513 999 80237	
R634	4k7	±2%	0,1W	SMD	3513 999 80232	
R635	15k	±2%	0,1W	SMD	3513 999 80238	
R638	15k	±2%	0,1W	SMD	3513 999 80238	
R639	1k	±2%	0,1W	SMD	3513 999 80224	
R640	2k7	±2%	0,1W	SMD	3513 999 80229	
R641	4k7	±2%	0,1W	SMD	3513 999 80232	
R643	8k2	±2%	0,1W	SMD	3513 999 80235	
R644	3k3	±2%	0,1W	SMD	3513 999 80230	
R645	22	±2%	0,1W	SMD	3513 999 80204	
R646	220	±2%	0,1W	SMD	3513 999 80216	
R647	100	±2%	0,1W	SMD	3513 999 80212	
R648,649	6Ω8	±5%	0,25W	c flm	PM01401	
Capacitors						
C101	47n	±10%	50V	SMD	3513 999 55013	
C102	10	±10%	16V	SMD	3513 999 65067	
C103	47n	±10%	50V	SMD	3513 999 55013	
C104,105	1n	±10%	50V	SMD	3513 999 55459	
C106	180p	±5%	cer		3513 991 06056	
C107	0p8-10pf		variable		4313 326 10081	
C108	56p	±5%	50V	SMD	3513 999 55322	
C109	82p	±5%	50V	SMD	3513 999 55324	
C110	47n	±10%	50V	SMD	3513 999 55013	
C111-113	10	±20%	50V	elec	PS99436	
C114	47n	±10%	50V	SMD	3513 999 55013	
C115	10	±20%	50V	elec	PS99436	
C116	10n	±10%	50V	SMD	3513 999 55471	
C117	100n	±10%	50V	SMD	3513 999 55498	
C118,119	47n	±10%	50V	SMD	3513 999 55013	
C120	10	±20%	50V	elec	PS99436	
C121	47n	±10%	50V	SMD	3513 999 55013	
C122,123	100n	±10%	50V	SMD	3513 999 55498	
C124	47n	±10%	50V	SMD	3513 999 55013	
C125	1n	±10%	50V	SMD	3513 999 55459	
C126	10	±20%	50V	elec	PS99436	
C127,128	10n	±10%	50V	SMD	3513 999 55471	
C129	180p	±5%		cer	3513 991 06056	
C301	10	±20%	50V	elec	PS99436	
C302	100n	±10%	50V	SMD	3513 999 55498	
C303	1	±20%	100V	elec	PS99455	
C304	100n	±10%	50V	SMD	3513 999 55498	
C305	10	±20%	50V	elec	PS99436	

Cct Ref	Description				Part No	Remarks
Capacitors (Cont'd)						
C306	1n5	±10%	50V	SMD	3513 999 55461	
C307	100n	±10%	50V	SMD	3513 999 55498	
C309	3p3	±0p25	50V	SMD	3513 999 55307	
C310	10p	±5%	50V	SMD	3513 999 55313	
C311	5p6	±0p5	50V	SMD	3513 999 55310	
C312,313	1n	±10%	50V	SMD	3513 999 55459	
C315	22p	±5%	50V	SMD	3513 999 55317	
C316	15p	±5%	50V	SMD	3513 999 55315	
C317	8p2	±0p5	50V	SMD	3513 999 55312	
C318-320	1n	±10%	50V	SMD	3513 999 55459	
C321	47n	±10%	50V	SMD	3513 999 55013	
C322	8p2	±0p5	50V	SMD	3513 999 55312	
C323	1n	±10%	50V	SMD	3513 999 55459	
C324	10	±20%	50V	elec	PS99436	
C325	47n	±10%	50V	SMD	3513 999 55013	
C326-330	1n	±10%	50V	SMD	3513 999 55459	
C331	47n	±10%	50V	SMD	3513 999 55013	
C332	1n	±10%	50V	SMD	3513 999 55459	
C333	47n	±10%	50V	SMD	3513 999 55013	
C334	2p2	±0p25	50V	SMD	3513 999 55305	
C335	1n	±10%	50V	SMD	3513 999 55459	
C336	8p2	±0p5	50V	SMD	3513 999 55312	
C337	4p7	±0p25	50V	SMD	3513 999 55309	
C348-350	1n	±10%	50V	SMD	3513 999 55459	
C351	47n	±10%	50V	SMD	3513 999 55013	
C352	10	±10%	16V	SMD	3513 999 65067	
C353	1n	±10%	50V	SMD	3513 999 55459	
C354	15p	±5%	50V	SMD	3513 999 55315	
C355	1n2	±10%	50V	SMD	3513 999 55460	
C356	47n	±10%	50V	SMD	3513 999 55013	
C357	47	±20%	25V	elec	PS99423	
C358	1n5	±10%	50V	SMD	3513 999 55461	
C359	270n	±10%	50V	SMD	3513 999 55022	
C360	47n	±10%	50V	SMD	3513 999 55013	
C361	10	±10%	16V	SMD	3513 999 65067	
C362	2p-18p		variable	PCB mtg	PV99006	
C363	22p	±5%	50V	SMD	3513 999 55317	
C364,365	1n	±10%	50V	SMD	3513 999 55459	
C366-368	100n	±10%	50V	SMD	3513 999 55498	
C369	1n	±10%	50V	SMD	3513 999 55459	
C370	15n	±10%	50V	SMD	3513 999 55472	
C371,372	10n	±10%	50V	SMD	3513 999 55471	
C373	270n	±10%	50V	SMD	3513 999 55022	
C374	10n	±10%	50V	SMD	3513 999 55471	
C376	100p	±5%	50V	SMD	3513 999 55325	
C377	10n	±10%	50V	SMD	3513 999 55471	
C378	10	±10%	16V	SMD	3513 999 65067	
C380	270n	±10%	50V	SMD	3513 999 55022	
C381,382	15p	±5%	50V	SMD	3513 999 55315	
C383	100n	±10%	50V	SMD	3513 999 55498	
C401,402	82p	±5%	50V	SMD	3513 999 55324	
C403,404	150p	±5%	50V	SMD	3513 999 55327	
C406,407	100n	±10%	50V	SMD	3513 999 55498	
C408	1n	±10%	50V	SMD	3513 999 55459	
C409	100n	±10%	50V	SMD	3513 999 55498	
C410	10	±10%	16V	SMD	3513 999 65067	
C411	10	±20%	50V	elec	PS99436	
C412	47n	±10%	50V	SMD	3513 999 55013	
C413	100n	±10%	50V	SMD	3513 999 55498	
C414	10	±20%	50V	elec	PS99436	
C415	1	±20%	100V	elec	PS99455	
C416	180p	±5%	50V	SMD	3513 999 55328	
C417	10	±10%	16V	SMD	3513 999 65067	
C418	330p	±5%	50V	SMD	3513 999 55331	
C419	100n	±10%	50V	SMD	3513 999 55498	
C420	15p	±5%	50V	SMD	3513 999 55315	
C421	10	±20%	50V	elec	PS99436	
C425-427	1n2	±10%	50V	SMD	3513 999 55460	
C429	100n	±10%	50V	SMD	3513 999 55498	
C430	1n2	±10%	50V	SMD	3513 999 55460	
C431	47n	±10%	50V	SMD	3513 999 55013	
C432-434	10	±20%	50V	elec	PS99436	
C435	100n	±10%	50V	SMD	3513 999 55498	
C436	10	±20%	50V	elec	PS99436	
C437	1	±20%	100V	elec	PS99455	
C438	47n	±10%	50V	SMD	3513 999 55013	

Cct Ref	Description				Part No	Remarks
Capacitors (Cont'd)						
C439	1n	±10%	50V	SMD	3513 999 55459	
C440	10	±20%	50V	elec	PS99436	
C441,442	1n	±10%	50V	SMD	3513 999 55459	
C443-446	15p	±5%	50V	SMD	3513 999 55315	
C447	1n	±10%	50V	SMD	3513 999 55459	
C448,449	8p2	±0p5	50V	SMD	3513 999 55312	
C450	47n	±10%	50V	SMD	3513 999 55013	
C451	1n	±10%	50V	SMD	3513 999 55459	
C452	10p	±5%	50V	SMD	3513 999 55313	
C453	10	±20%	50V	elec	PS99436	
C454	1n	±10%	50V	SMD	3513 999 55459	
C455	2p7	±0p25	50V	SMD	3513 999 55306	
C456	1n	±10%	50V	SMD	3513 999 55459	
C457	15p	±5%	50V	SMD	3513 999 55315	
C458	8p2	±0p5	50V	SMD	3513 999 55312	
C459	10	±20%	50V	elec	PS99436	
C460	47n	±10%	50V	SMD	3513 999 55013	
C461-463	1n	±10%	50V	SMD	3513 999 55459	
C464	10	±20%	50V	elec	PS99436	
C465	47n	±10%	50V	SMD	3513 999 55013	
C466,467	1n	±10%	50V	SMD	3513 999 55459	
C469	6p8	±0p5	50V	SMD	3513 999 55311	
C471	10	±20%	50V	elec	PS99436	
C472	47n	±10%	50V	SMD	3513 999 55013	
C473	1n	±10%	50V	SMD	3513 999 55459	
C474	5p5-50p		variable PCB mtg		PV99007	
C475	47n	±10%	50V	SMD	3513 999 55013	
C476	8p2	±0p5	50V	SMD	3513 999 55312	
C477	1n	±10%	50V	SMD	3513 999 55459	
C478	15p	±5%	50V	SMD	3513 999 55315	
C479,480	1n	±10%	50V	SMD	3513 999 55459	
C481-483	100n	±10%	50V	SMD	3513 999 55498	
C484,485	10	±20%	50V	elec	PS99436	
C486	100n	±10%	50V	SMD	3513 999 55498	
C487	1n	±10%	50V	SMD	3513 999 55459	
C488	15n	±10%	50V	SMD	3513 999 55472	
C489	1n	±10%	50V	SMD	3513 999 55459	
C490	100p	±5%	50V	SMD	3513 999 55325	
C491	3n3	±10%	50V	SMD	3513 999 55465	
C492	100p	±5%	50V	SMD	3513 999 55325	
C493	22n	±10%	50V	SMD	3513 999 55010	
C494	10	±10%	16V	SMD	3513 999 65067	
C495	10	±20%	50V	elec	PS99436	
C497	1n	±10%	50V	SMD	3513 999 55459	
C498	47n	±10%	50V	SMD	3513 999 55013	
C499	1n	±10%	50V	SMD	3513 999 55459	
C501	10	±20%	50V	elec	PS99436	
C503,504	22	±20%	25V	elec	3513 991 00079	
C505	1	±20%	100V	elec	PS99455	
C506	100	±20	25V	elec	3513 991 00081	
C507	10	±20%	50V	elec	PS99436	
C508	1n	±10%	50V	SMD	3513 999 55459	
C509,510	270n	±10%	50V	SMD	3513 999 55022	
C511-534	100p	±5%	50V	SMD	3513 999 55325	
C535,536	10	±20%	50V	elec	PS99436	
C537	47p	±5%	50V	SMD	3513 999 55321	
C538	10	±10%	16V	SMD	3513 999 65067	
C539	47p	±5%	50V	SMD	3513 999 55321	
C540	22	±20%	100V	elec	PS99456	
C541,542	47p	±5%	50V	SMD	3513 999 55321	
C543	100p	±5%	50V	SMD	3513 999 55325	
C544-550	10n	±10%	50V	SMD	3513 999 55471	
C554-563	10n	±10%	50V	SMD	3513 999 55471	
C564-567	10	±20%	50V	elec	PS99436	
C568,569	10n	±10%	50V	SMD	3513 999 55471	
C570	1n	±10%	50V	SMD	3513 999 55459	
C601	22p	±5%	50V	SMD	3513 999 55317	
C602	10	±20%	50V	elec	PS99436	
C603	22p	±5%	50V	SMD	3513 999 55317	
C604	5p6	±0p5	50V	SMD	3513 999 55310	
C605	1p8	±0p25	50V	SMD	3513 999 55304	
C606	22p	±5%	50V	SMD	3513 999 55317	
C607	27p	±5%	50V	SMD	3513 999 55318	
C608	10	±20%	50V	elec	PS99436	
C609	1n	±10%	50V	SMD	3513 999 55459	
C610	4p7	±0p25	50V	SMD	3513 999 55309	

Cct Ref	Description	Part No	Remarks
Capacitors (Cont'd)			
C611	8p5-40p variable SMD	3513 999 70006	
C612,613	27p ±5% 50V SMD	3513 999 55318	
C614-616	47p ±5% 50V SMD	3513 999 55321	
C617	1 ±20% 100V elec	PS99455	
C618,619	10 ±20% 50V elec	PS99436	
C620	220p ±5% 50V SMD	3513 999 55329	
C621	10n ±10% 50V SMD	3513 999 55471	
C622	47p ±5% 50V SMD	3513 999 55321	
C624	1n ±10% 50V SMD	3513 999 55459	
C625	56p ±5% 50V SMD	3513 999 55322	
C627	47 ±20% 25V elec	PS99423	
C629	1n ±10% 50V SMD	3513 999 55459	
C630	1 ±20% 100V elec	PS99455	
C631	10 ±20% 50V elec	PS99436	
C632	1n ±10% 50V SMD	3513 999 55459	
C634	33p ±5% 50V SMD	3513 999 55319	
C635	8p2 ±0p5 50V SMD	3513 999 55312	
C636	6p5-30p variable SMD	3513 999 70003	
C637	8p5-40p variable SMD	3513 999 70006	
C638	2p2 ±0p25 50V SMD	3513 999 55305	
C639	10p ±5% 50V SMD	3513 999 55313	
C641	15p ±5% 50V SMD	3513 999 55315	
C642	6p8 ±0p5 50V SMD	3513 999 55311	
C643	15p ±5% 50V SMD	3513 999 55315	
C644	8p2 ±0p5 50V SMD	3513 999 55312	
C645-647	10 ±20% 50V elec	PS99436	
C650	8p2 ±0p5 50V SMD	3513 999 55312	
C651	4p7 ±0p25 50V SMD	3513 999 55309	
C652	1 ±20% 100V elec	PS99455	
C654,655	1n ±10% 50V SMD	3513 999 55459	
C657	1n ±10% 50V SMD	3513 999 55459	
C658,659	10 ±20% 50V elec	PS99436	
C660,661	1n ±10% 50V SMD	3513 999 55459	
C662	10 ±20% 50V elec	PS99436	
C663,664	3p3 ±0p25 50V SMD	3513 999 55307	
C665	2n2 ±10% 50V SMD	3513 999 55463	
C680-685	10n ±10% 50V SMD	3513 999 55471	
C686	1n ±5%	PN99900	1/output socket
C4100	1n ±10% 50V SMD	3513 999 55459	
C4101	47n ±10% 50V SMD	3513 999 55013	
C4103	47n ±10% 50V SMD	3513 999 55013	
C4105	10 ±20% 50V elec	PS99436	
Inductors			
L101,102	Choke 100µh ±10%	3513 993 22553	
L301	Inductor 1µ5 ±20% SMD	3513 999 98097	
L302	Inductor 47nh ±20% SMD	3513 999 98081	
L303,304	Inductor 1µ5 ±20% SMD	3513 999 98097	
L305	Inductor 47nh ±20% SMD	3513 999 98081	
L306	Inductor 1µ5 ±20% SMD	3513 999 98097	
L307	Inductor 47nh ±20% SMD	3513 999 98081	
L308	Inductor 1µ5 ±20% SMD	3513 999 98097	
L313,314	Choke 100µh ±10%	3513 993 22553	
L315	Choke 0µ22 ±10%	3513 993 22546	
L316	Inductor 1µ5 ±20% SMD	3513 999 98097	
L317	Coil 0µ114 orange	FT06417	
L401	Inductor 330nh ±20% SMD	3513 999 98098	
L402	Inductor 680nh ±20% SMD	3513 999 98088	
L403	Inductor 330nh ±20% SMD	3513 999 98098	
L404	Inductor 150nh ±20% SMD	3513 999 98085	
L405-407	Inductor 1000µ ±10% SMD	3513 999 98125	
L408	Inductor 150nh ±20% SMD	3513 999 98085	
L409	Coil 0µ23 green	FT06604	
L410,411	Inductor 1µ5 ±20% SMD	3513 999 98097	
L412	Inductor 68nh ±20% SMD	3513 999 98083	
L413	Inductor 1µ5 ±20% SMD	3513 999 98097	
L414	Inductor 47nh ±20% SMD	3513 999 98081	
L415-417	Choke 100µh ±10%	3513 993 22553	
L418	Inductor 47nh ±20% SMD	3513 999 98081	
L419	Inductor 150nh ±20% SMD	3513 999 98085	
L420	Choke 100µh ±10%	3513 993 22553	
L501	Bead 6-hole ferroxcube	4312 020 36700	
L502-513	Inductor 220nh ±20% SMD	3513 999 98086	
L514	Bead 6-hole ferroxcube	4312 020 36700	
L601	Choke assy toroidal	3513 509 00691	

Cct Ref	Description	Part No	Remarks
Inductors (Cont'd)			
L602	Coil	3513 901 00061	
L603	Coil	3513 901 00051	
L604	Coil	3513 901 00041	
L605	Coil	3513 901 00031	
L606	Coil	3513 901 00021	
L607	Coil	3513 901 00011	
L608	Choke RF min 1µh ±10%	FT99102	
L614	Coil	3513 901 00001	
L612	Inductor 1µ5 ±20% SMD	3513 999 98097	
L613	Inductor 1µh ±20% SMD	3513 999 98089	
Miscellaneous			
SK501	Skt 'D' type rt angle 15-way	FS42136	
Y101	Crystal 10mhz to YE00922	3513 900 60521	
	Bracket Antenna	3513 900 40151	
	Bush Ins 1507	3513 990 16014	1/IC502,503,603
	Cover Screen	3513 901 10251	
	Hdr str male 2-posn	FC00837/02	
	Hdr str male 7-posn	FC00837/07	
	Heatsink plate	3513 902 30341	
	Heatsink plate assembly	3513 504 03991	
	Holder Crystal Oven	BT45165	
	Link Connector	FC99060	
	Plug PCB mtd straight 2 x 7	FP99290	
	Retainer	BT48026	1/Xtal Oven
	Screen (Power Amp)	3513 906 20131	
	Screen (VCO)	3513 906 20121	
	Skt BNC Type	FS43779	
	Skt Dil 28-Way	FS99148	1/IC305
	Nut st hex M2,5	QA11604/X	2/15-way plug; 3/IC1,TR606
	Scr pan pozi M2,5 x 6mm Bt Ni	2522 178 16038	1/IC502,503,603; 1/TR606
	Scr st pan pozi M2,5 x 8mm	QJ11946/X	1/Oven; 2/15-way socket
	Scr st tap pozi No.4 x 6,5mm	QJ08227/X	8/VCO covers
	Washer Compression QA99040	1/TR606	
	Washer Insulating TO-126	QA99016	1/TR502,606
	Washer Thermal TO-220	QA99111	1/IC502,503,603

PCB ASSEMBLY TX DRIVER EO BAND
AT29082/04

Semiconductors & ICs			
IC101	IC 74HC4046 SMD	3513 999 50060	
IC102	IC 74HC14-HDL SMD	3513 999 50056	
IC103	IC 74HC4024 SMD	3513 999 50038	
IC302	IC MB501LFP 2-MODL	3508 100 16310	
IC303	IC TL071ID SMD	9338 369 60685	
IC304	IC NJ8820GG SMD	4313 324 70001	
IC305	Prom assy programmed	AT60171	
IC306	IC 74HC574 SMD	3513 999 50027	
IC307	IC 74HC688 SMD	3513 999 50034	
IC308	IC 74HC126 SMD	3513 999 50069	
IC309	Res 9-pin sil 1k ±5%	RN99525	
IC401	IC 74HC4046 SMD	3513 999 50060	
IC402	IC 74HC4060 SMD	3513 999 50040	
IC403	IC TL072ID SMD	9338 369 30685	
IC404	Mixer RMS1 SMD	2722 162 90133	
IC501	IC LM258 SMD	3513 999 45008	
IC504	IC LM324-HDL SMD	3513 999 45005	
IC601	IC LM324-HDL SMD	3513 999 45005	
IC602	IC 74HC00 SMD	3513 999 50000	
IC502	IC 7812 Volt Reg & Fix	FU99109	
IC503	IC 7805 VOLT Reg & Fix	3513 993 34014	
IC603	IC LM317-SMD	FU99119	
TR101	Transistor BFT92 SMD	3513 999 00010	
TR102,103	Transistor BFR93 SMD	3513 999 00027	
TR104,105	Transistor BCW72 SMD	3513 999 00015	
TR106	Transistor BFR93 SMD	3513 999 00027	
TR302	Transistor BCW72 SMD	3513 999 00015	
TR303-308	Transistor BFR93 SMD	3513 999 00027	
TR401	Transistor BCW70 SMD	3513 999 00003	
TR402	Transistor BFR93 SMD	3513 999 00027	
TR406	Transistor BFQ17 SMD	3513 999 00022	
TR407-412	Transistor BCW72 SMD	3513 999 00015	
TR413	Transistor BCW70 SMD	3513 999 00003	

Cct Ref	Description	Part No	Remarks
Semiconductors & ICs (Cont'd)			
TR414	Transistor BFT92 SMD	3513 999 00010	
TR415,416	Transistor BCW72 SMD	3513 999 00015	
TR417	Transistor BFR93 SMD	3513 999 00027	
TR420	Transistor BFR93 SMD	3513 999 00027	
TR422-424	Transistor BFR93 SMD	3513 999 00027	
TR425	Transistor BCW72 SMD	3513 999 00015	
TR426	Transistor BCW70 SMD	3513 999 00003	
TR427	Transistor BCW72 SMD	3513 999 00015	
TR429	Transistor BCW72 SMD	3513 999 00015	
TR501	Transistor BCW72 SMD	3513 999 00015	
TR502	Transistor BD437 Power GP	FV05887	
TR503,504	Transistor BCX19 SMD	3513 999 00016	
TR505	Transistor BCW70 SMD	3513 999 00003	
TR506-508	Transistor BCW72 SMD	3513 999 00015	
TR601-603	Transistor BCW72 SMD	3513 999 00015	
TR604	Transistor BFQ17 SMD	3513 999 00022	
TR605	Transistor BCW72 SMD	3513 999 00015	
TR606	Transistor BD437 Power GP	FV05887	
TR607	Transistor BLY87C	9333 262 90112	
TR608	Transistor BCW72 SMD	3513 999 00015	
D101	Diode BBY31 SMD	3513 999 25000	
D102,103	Diode BAV99 SMD	3513 999 15002	
D105	Diode BAV99 SMD	3513 999 15002	
D301	Diode BBY40 SMD	3513 999 25001	
D302	Diode BBY40 SMD	3513 999 25001	
D305	Diode BAV99 SMD	3513 999 15002	
D401	Diode BAT17	3513 999 15006	
D402	Diode BAV99 SMD	3513 999 15002	
D404	Diode BZX84C2V7	3513 999 20001	
D405,406	Diode BAV99 SMD	3513 999 15002	
D407	Diode BAT17	3513 999 15006	
D409	Diode BAV99 SMD	3513 999 15002	
D412	Diode BAV99 SMD	3513 999 15002	
D413-417	Diode BBY40 SMD	3513 999 25001	
D418,419	Diode HSMP-3820 SMD	9313 000 03683	
D420	Diode BAV99 SMD	3513 999 15002	
D421	Diode BBY40 SMD	3513 999 25001	
D422	Diode BAV99 SMD	3513 999 15002	
D501,502	Diode BAV99 SMD	3513 999 15002	
D503	Led green MV5474C	3513 993 47002	
D504	Diode BZX84C6V8	3513 999 20011	
D505	Diode BZX84C2V7	3513 999 20001	
D506,507	Diode BAV99 SMD	3513 999 15002	
D508,509	Diode BAW56	3513 999 15001	
D510	Diode BZX84C6V2 M C	3513 999 20010	
D511	Diode BAV99 SMD	3513 999 15002	
D512	Led green MV5474C	3513 993 47002	
D513	Diode BAV99 SMD	3513 999 15002	
D514	Led red	3513 993 46000	
D601	Diode BAW56	3513 999 15001	
D603	Diode BAV99 SMD	3513 999 15002	
D604	Diode BZX84C8V2	3513 999 20013	
D605	Diode BZX84C5V6	3513 999 20009	
D606	Diode BZX84C6V8	3513 999 20011	
D607,608	Diode BAT17	3513 999 15006	
D609	Led red	3513 993 46000	
D610	Diode BZX84C6V8	3513 999 20011	
D611	Diode BAV99 SMD	3513 999 15002	
Resistors			
R101	820 ±2% 0,1W SMD	3513 999 80223	
R102	12k ±2% 0,1W SMD	3513 999 80237	
R103	680 ±2% 0,1W SMD	3513 999 80222	
R104	100 ±2% 0,1W SMD	3513 999 80212	
R105,106	1k ±2% 0,1W SMD	3513 999 80224	
R107	3k9 ±2% 0,1W SMD	3513 999 80231	
R108	820 ±2% 0,1W SMD	3513 999 80223	
R109	100 ±2% 0,1W SMD	3513 999 80212	
R110,111	470 ±2% 0,1W SMD	3513 999 80220	
R112	10k ±2% 0,1W SMD	3513 999 80236	
R114	47k ±2% 0,1W SMD	3513 999 80244	
R115	120 ±2% 0,1W SMD	3513 999 80213	
R116,117	4k7 ±2% 0,1W SMD	3513 999 80232	
R118	100k ±2% 0,1W SMD	3513 999 80248	
R119	2k2 ±2% 0,1W SMD	3513 999 80228	

Cct Ref	Description				Part No	Remarks
Resistors (Cont'd)						
R120	4k7	±2%	0,1W	SMD	3513 999 80232	
R121,122	2k2	±2%	0,1W	SMD	3513 999 80228	
R123	820	±2%	0,1W	SMD	3513 999 80223	
R127	1k	±2%	0,1W	SMD	3513 999 80224	
R128	6k8	±2%	0,1W	SMD	3513 999 80234	
R129	1k8	±2%	0,1W	SMD	3513 999 80227	
R130	47	±2%	0,1W	SMD	3513 999 80208	
R131	390	±2%	0,1W	SMD	3513 999 80219	
R132	1k	±2%	0,1W	SMD	3513 999 80224	
R133	4k7	±2%	0,1W	SMD	3513 999 80232	
R134	100	±2%	0,1W	SMD	3513 999 80212	
R135	1k	±2%	0,1W	SMD	3513 999 80224	
R136	10k	±2%	0,1W	SMD	3513 999 80236	
R301	33	±2%	0,1W	SMD	3513 999 80206	
R302	100	±2%	0,1W	SMD	3513 999 80212	
R303,304	22k	±2%	0,1W	SMD	3513 999 80240	
R305	4k7	±2%	0,1W	SMD	3513 999 80232	
R306	3k9	±2%	0,1W	SMD	3513 999 80231	
R307	2k2	±2%	0,1W	SMD	3513 999 80228	
R308	220	±2%	0,1W	SMD	3513 999 80216	
R309	8k2	±2%	0,1W	SMD	3513 999 80235	
R310	56	±2%	0,1W	SMD	3513 999 80209	
R311	47	±2%	0,1W	SMD	3513 999 80208	
R312	390	±2%	0,1W	SMD	3513 999 80219	
R313	270	±2%	0,1W	SMD	3513 999 80217	
R314	3k9	±2%	0,1W	SMD	3513 999 80231	
R315	5k6	±2%	0,1W	SMD	3513 999 80233	
R316	120	±2%	0,1W	SMD	3513 999 80213	
R317,318	68	±2%	0,1W	SMD	3513 999 80210	
R319	1k2	±2%	0,1W	SMD	3513 999 80225	
R320	47	±2%	0,1W	SMD	3513 999 80208	
R322	390	±2%	0,1W	SMD	3513 999 80219	
R323	1k	±2%	0,1W	SMD	3513 999 80224	
R324	3k9	±2%	0,1W	SMD	3513 999 80231	
R325	5k6	±2%	0,1W	SMD	3513 999 80233	
R326	1k2	±2%	0,1W	SMD	3513 999 80225	
R327	22	±2%	0,1W	SMD	3513 999 80204	
R328	1k	±2%	0,1W	SMD	3513 999 80224	
R329	680	±2%	0,1W	SMD	3513 999 80222	
R330	6k8	±2%	0,1W	SMD	3513 999 80234	
R331,332	10k	±2%	0,1W	SMD	3513 999 80236	
R333	1M	±2%	0,1W	SMD	3513 999 80260	
R334	3k9	±2%	0,1W	SMD	3513 999 80231	
R335	22k	±2%	0,1W	SMD	3513 999 80240	
R337,338	10k	±2%	0,1W	SMD	3513 999 80236	
R339	22k	±2%	0,1W	SMD	3513 999 80240	
R340	10k	±2%	0,1W	SMD	3513 999 80236	
R347	1k5	±2%	0,1W	SMD	3513 999 80226	
R348	10k	±2%	0,1W	SMD	3513 999 80236	
R357,358	10k	±2%	0,1W	SMD	3513 999 80236	
R360	10k	±2%	0,1W	SMD	3513 999 80236	
R361	12k	±2%	0,1W	SMD	3513 999 80237	
R364-371	10k	±2%	0,1W	SMD	3513 999 80236	
R372	1M	±2%	0,1W	SMD	3513 999 80260	
R398	10k	±2%	0,1W	SMD	3513 999 80236	
R399	680	±2%	0,1W	SMD	3513 999 80222	
R401	56	±2%	0,1W	SMD	3513 999 80209	
R402	2k7	±2%	0,1W	SMD	3513 999 80229	
R403,404	1k	±2%	0,1W	SMD	3513 999 80224	
R405	100	±2%	0,1W	SMD	3513 999 80212	
R406	1k	±2%	0,1W	SMD	3513 999 80224	
R408	220	±2%	0,1W	SMD	3513 999 80216	
R409	470k	±2%	0,1W	SMD	3513 999 80256	
R410	3k9	±2%	0,1W	SMD	3513 999 80231	
R411	560	±2%	0,1W	SMD	3513 999 80221	
R412	1k	±2%	0,1W	SMD	3513 999 80224	
R413	8k2	±2%	0,1W	SMD	3513 999 80235	
R414-416	470	±2%	0,1W	SMD	3513 999 80220	
R417	2k2	±2%	0,1W	SMD	3513 999 80228	
R418	100	±2%	0,1W	SMD	3513 999 80212	
R419	22k	±2%	0,1W	SMD	3513 999 80240	
R420	47	±2%	0,1W	SMD	3513 999 80208	
R421,422	10k	±2%	0,1W	SMD	3513 999 80236	
R423	3k3	±2%	0,1W	SMD	3513 999 80230	
R427	470	±2%	0,1W	SMD	3513 999 80220	
R428	330	±2%	0,1W	SMD	3513 999 80218	

Cct Ref	Description	Part No	Remarks
Resistors (Cont'd)			
R429	390 ±2% 0,1W SMD	3513 999 80219	
R430	220 ±2% 0,1W SMD	3513 999 80216	
R431-433	1k ±2% 0,1W SMD	3513 999 80224	
R434	2k2 ±2% 0,1W SMD	3513 999 80228	
R436	330 ±2% 0,1W SMD	3513 999 80218	
R437	22k ±2% 0,1W SMD	3513 999 80240	
R438	220 ±2% 0,1W SMD	3513 999 80216	
R439	22k ±2% 0,1W SMD	3513 999 80240	
R440	2k2 ±2% 0,1W SMD	3513 999 80228	
R441	100 ±2% 0,1W SMD	3513 999 80212	
R442	33 ±2% 0,1W SMD	3513 999 80206	
R443	680 ±2% 0,1W SMD	3513 999 80222	
R444	5k6 ±2% 0,1W SMD	3513 999 80233	
R445	1k ±2% 0,1W SMD	3513 999 80224	
R446	220 ±2% 0,1W SMD	3513 999 80216	
R447	5k6 ±2% 0,1W SMD	3513 999 80233	
R448,449	680 ±2% 0,1W SMD	3513 999 80222	
R450	180 ±2% 0,1W SMD	3513 999 80215	
R451,452	10k ±2% 0,1W SMD	3513 999 80236	
R453	1k5 ±2% 0,1W SMD	3513 999 80226	
R454	680 ±2% 0,1W SMD	3513 999 80222	
R455	33 ±2% 0,1W SMD	3513 999 80206	
R456,457	150 ±2% 0,1W SMD	3513 999 80214	
R458	5k6 ±2% 0,1W SMD	3513 999 80233	
R459	1k5 ±2% 0,1W SMD	3513 999 80226	
R460	220 ±2% 0,1W SMD	3513 999 80216	
R461	10k ±2% 0,1W SMD	3513 999 80236	
R462	33 ±2% 0,1W SMD	3513 999 80206	
R464	180 ±2% 0,1W SMD	3513 999 80215	
R465	100 ±2% 0,1W SMD	3513 999 80212	
R466-468	22k ±2% 0,1W SMD	3513 999 80240	
R469,470	10k ±2% 0,1W SMD	3513 999 80236	
R471	270k ±2% 0,1W SMD	3513 999 80253	
R472	6k8 ±2% 0,1W SMD	3513 999 80234	
R473	10k ±25% Pot Cermet	3513 999 95007	
R474	100k ±2% 0,1W SMD	3513 999 80248	
R478	6k8 ±2% 0,1W SMD	3513 999 80234	
R479	100 ±2% 0,1W SMD	3513 999 80212	
R480	47 ±2% 0,1W SMD	3513 999 80208	
R482	39 ±2% 0,1W SMD	3513 999 80207	
R484	47 ±2% 0,1W SMD	3513 999 80208	
R485	220 ±2% 0,1W SMD	3513 999 80216	
R486	10k ±2% 0,1W SMD	3513 999 80236	
R487	470 ±2% 0,1W SMD	3513 999 80220	
R488	150 ±2% 0,1W SMD	3513 999 80214	
R489	100 ±2% 0,1W SMD	3513 999 80212	
R491	10k ±2% 0,1W SMD	3513 999 80236	
R492	47k ±2% 0,1W SMD	3513 999 80244	
R493	10k ±2% 0,1W SMD	3513 999 80236	
R501	1k ±2% 0,1W SMD	3513 999 80224	
R502	820k ±2% 0,1W SMD	3513 999 80259	
R503	680 ±2% 0,1W SMD	3513 999 80222	
R504	470k ±2% 0,1W SMD	3513 999 80256	
R505	100 ±2% 0,1W SMD	3513 999 80212	
R506	56k ±2% 0,1W SMD	3513 999 80245	
R507	Thermistor ptc 70°C	PL23137	
R508	4Ω7 ±5% 0,125W SMD	3513 999 80008	
R509	100k ±2% 0,1W SMD	3513 999 80248	
R510	100 ±2% 0,1W SMD	3513 999 80212	
R511	470 ±2% 0,1W SMD	3513 999 80220	
R512	15k ±2% 0,1W SMD	3513 999 80238	
R513	3k3 ±2% 0,1W SMD	3513 999 80230	
R514-516	10k ±2% 0,1W SMD	3513 999 80236	
R517	6k8 ±2% 0,1W SMD	3513 999 80234	
R519	3k3 ±2% 0,1W SMD	3513 999 80230	
R522	1k ±2% 0,1W SMD	3513 999 80224	
R524	470 ±2% 0,1W SMD	3513 999 80220	
R525	390 ±2% 0,1W SMD	3513 999 80219	
R533	10k ±2% 0,1W SMD	3513 999 80236	
R540	220 ±2% 0,1W SMD	3513 999 80216	
R543-545	4Ω7 ±5% 0,125W SMD	3513 999 80008	
R601	10k ±2% 0,1W SMD	3513 999 80236	
R602	1k ±2% 0,1W SMD	3513 999 80224	
R603-606	10k ±2% 0,1W SMD	3513 999 80236	
R609	1k ±2% 0,1W SMD	3513 999 80224	
R610	10k ±2% 0,1W SMD	3513 999 80236	

Cct Ref	Description				Part No	Remarks
Resistors (Cont'd)						
R611,612	180	±2%	0,1W	SMD	3513 999 80215	
R613	33	±2%	0,1W	SMD	3513 999 80206	
R614,615	22	±2%	0,1W	SMD	3513 999 80204	
R616	680	±2%	0,1W	SMD	3513 999 80222	
R620,621	10k	±2%	0,1W	SMD	3513 999 80236	
R624	10k	±2%	0,1W	SMD	3513 999 80236	
R626	270	±2%	0,1W	SMD	3513 999 80217	
R627	10	±2%	0,1W	SMD	3513 999 80200	
R629	10k	±2%	0,1W	SMD	3513 999 80236	
R630	47	±2%	0,1W	SMD	3513 999 80208	
R631,632	2k7	±2%	0,1W	SMD	3513 999 80229	
R636,637	10k	±2%	0,1W	SMD	3513 999 80236	
R639	1k	±2%	0,1W	SMD	3513 999 80224	
R640	2k7	±2%	0,1W	SMD	3513 999 80229	
R642	10k	±2%	0,1W	SMD	3513 999 80236	
R645	22	±2%	0,1W	SMD	3513 999 80204	
R646	220	±2%	0,1W	SMD	3513 999 80216	
R647	68	±2%	0,1W	SMD	3513 999 80210	
R648,649	6Ω8	±5%	0,25W	c film	PM01410	
Capacitors						
C101	47n	±10%	50V	SMD	3513 999 55013	
C102	10	±10%	16V	SMD	3513 999 65067	
C103	47n	±10%	50V	SMD	3513 999 55013	
C104,105	1n	±10%	50V	SMD	3513 999 55459	
C106	180p	±5%		Cer	3513 991 06056	
C107	0p8-10pf		variable		4313 326 10081	
C108	56p	±5%	50V	SMD	3513 999 55322	
C109	82p	±5%	50V	SMD	3513 999 55324	
C110	47n	±10%	50V	SMD	3513 999 55013	
C111-113	10	±20%	50V	elec	PS99436	
C114	47n	±10%	50V	SMD	3513 999 55013	
C115	10	±20%	50V	elec	PS99436	
C116	10n	±10%	50V	SMD	3513 999 55471	
C117	100n	±10%	50V	SMD	3513 999 55498	
C118,119	47n	±10%	50V	SMD	3513 999 55013	
C120	10	±20%	50V	elec	PS99436	
C121	47n	±10%	50V	SMD	3513 999 55013	
C122,123	100n	±10%	50V	SMD	3513 999 55498	
C124	47n	±10%	50V	SMD	3513 999 55013	
C125	1n	±10%	50V	SMD	3513 999 55459	
C126	10	±20%	50V	elec	PS99436	
C127,128	10n	±10%	50V	SMD	3513 999 55471	
C129	180p	±5%		Cer	3513 991 06056	
C301	10	±20%	50V	elec	PS99436	
C302	100n	±10%	50V	SMD	3513 999 55498	
C303	1	±20%	100V	elec	PS99455	
C304	100n	±10%	50V	SMD	3513 999 55498	
C305	10	±20%	50V	elec	PS99436	
C306	1n5	±10%	50V	SMD	3513 999 55461	
C307	100n	±10%	50V	SMD	3513 999 55498	
C309	18p	±5%	50V	SMD	3513 999 55316	
C311	56p	±5%	50V	SMD	3513 999 55322	
C312	33p	±5%	50V	SMD	3513 999 55319	
C313	27p	±5%	50V	SMD	3513 999 55318	
C315	68p	±5%	50V	SMD	3513 999 55323	
C316	27p	±5%	50V	SMD	3513 999 55318	
C317	22p	±5%	50V	SMD	3513 999 55317	
C318,319	1n	±10%	50V	SMD	3513 999 55459	
C320	1n5	±10%	50V	SMD	3513 999 55461	
C321	100n	±10%	50V	SMD	3513 999 55498	
C322	22p	±5%	50V	SMD	3513 999 55317	
C323	10p	±5%	50V	SMD	3513 999 55313	
C324	10	±20%	50V	elec	PS99436	
C325	1n5	±10%	50V	SMD	3513 999 55461	
C326	10	±20%	50V	elec	PS99436	
C327	39p	±5%	50V	SMD	3513 999 55320	
C328	100p	±5%	50V	SMD	3513 999 55325	
C329	1n	±10%	50V	SMD	3513 999 55459	
C330	100n	±10%	50V	SMD	3513 999 55498	
C331,332	1n5	±10%	50V	SMD	3513 999 55461	
C333	10	±20%	50V	elec	PS99436	
C334,335	220p	±5%	50V	SMD	3513 999 55329	
C336	100p	±5%	50V	SMD	3513 999 55325	
C348-350	1n	±10%	50V	SMD	3513 999 55459	

Cct Ref	Description				Part No	Remarks
Capacitors (Cont'd)						
C351	47n	±10%	50V	SMD	3513 999 55013	
C352	10	±10%	16V	SMD	3513 999 65067	
C354	56p	±5%	50V	SMD	3513 999 55322	
C355	1n2	±10%	50V	SMD	3513 999 55460	
C356	47n	±10%	50V	SMD	3513 999 55013	
C357	47	±20%	25V	elec	PS99423	
C358	1n5	±10%	50V	SMD	3513 999 55461	
C359	270n	±10%	50V	SMD	3513 999 55022	
C360	47n	±10%	50V	SMD	3513 999 55013	
C361	10	±10%	16V	SMD	3513 999 65067	
C364	1n	±10%	50V	SMD	3513 999 55459	
C365	10p	±5%	50V	SMD	3513 999 55313	
C366-368	100n	±10%	50V	SMD	3513 999 55498	
C369	1n	±10%	50V	SMD	3513 999 55459	
C370	15n	±10%	50V	SMD	3513 999 55472	
C371,372	10n	±10%	50V	SMD	3513 999 55471	
C373	270n	±10%	50V	SMD	3513 999 55022	
C374	10n	±10%	50V	SMD	3513 999 55471	
C376	100p	±5%	50V	SMD	3513 999 55325	
C377	10n	±10%	50V	SMD	3513 999 55471	
C378	10	±10%	16V	SMD	3513 999 65067	
C380	270n	±10%	50V	SMD	3513 999 55022	
C381	68p	±5%	50V	SMD	3513 999 55323	
C383	100n	±10%	50V	SMD	3513 999 55498	
C399	33p	±5%	50V	SMD	3513 999 55319	
C401	100p	±5%	50V	SMD	3513 999 55325	
C402	82p	±5%	50V	SMD	3513 999 55324	
C403	150p	±5%	50V	SMD	3513 999 55327	
C404	15p	±5%	50V	SMD	3513 999 55315	
C406	100p	±5%	50V	SMD	3513 999 55325	
C407	15p	±5%	50V	SMD	3513 999 55315	
C408	150p	±5%	50V	SMD	3513 999 55327	
C409	82p	±5%	50V	SMD	3513 999 55324	
C410	1n	±10%	50V	SMD	3513 999 55459	
C411	10	±20%	50V	elec	PS99436	
C412	47n	±10%	50V	SMD	3513 999 55013	
C413	100n	±10%	50V	SMD	3513 999 55498	
C414	10	±20%	50V	elec	PS99436	
C415	1	±20%	100V	elec	PS99455	
C416	180p	±5%	50V	SMD	3513 999 55328	
C417	10	±10%	16V	SMD	3513 999 65067	
C418	330p	±5%	50V	SMD	3513 999 55331	
C419	100n	±10%	50V	SMD	3513 999 55498	
C420	15p	±5%	50V	SMD	3513 999 55315	
C421	10	±20%	50V	elec	PS99436	
C425-427	1n2	±10%	50V	SMD	3513 999 55460	
C428	6p8	±0p5	50V	SMD	3513 999 55311	
C429	100n	±10%	50V	SMD	3513 999 55498	
C430	1n5	±10%	50V	SMD	3513 999 55461	
C431	47n	±10%	50V	SMD	3513 999 55013	
C432-434	10	±20%	50V	elec	PS99436	
C435	100n	±10%	50V	SMD	3513 999 55498	
C436	10	±20%	50V	elec	PS99436	
C437	1	±20%	100V	elec	PS99455	
C438	100n	±10%	50V	SMD	3513 999 55498	
C439	2n2	±10%	50V	SMD	3513 999 55463	
C440	10	±20%	50V	elec	PS99436	
C441	100n	±10%	50V	SMD	3513 999 55498	
C442	100n	±10%	50V	SMD	3513 999 55498	
C443	56p	±5%	50V	SMD	3513 999 55322	
C444	68p	±5%	50V	SMD	3513 999 55323	
C445	18p	±5%	50V	SMD	3513 999 55316	
C446	68p	±5%	50V	SMD	3513 999 55323	
C447	1n	±10%	50V	SMD	3513 999 55459	
C448,449	22p	±5%	50V	SMD	3513 999 55317	
C450	1n	±10%	50V	SMD	3513 999 55459	
C451	10	±10%	16V	SMD	3513 999 65067	
C452	18p	±5%	50V	SMD	3513 999 55316	
C453	10	±20%	50V	elec	PS99436	
C454	100n	±10%	50V	SMD	3513 999 55498	
C455	5p6	±0p5	50V	SMD	3513 999 55310	
C456	10	±20%	50V	elec	PS99436	
C457	2n2	±10%	50V	SMD	3513 999 55463	
C458	100n	±10%	50V	SMD	3513 999 55498	
C459	10	±20%	50V	elec	PS99436	
C460	100n	±10%	50V	SMD	3513 999 55498	

Cct Ref	Description				Part No	Remarks
Capacitors (Cont'd)						
C461	2n2	±10%	50V	SMD	3513 999 55463	
C462	6p8	±0p5	50V	SMD	3513 999 55311	
C463	1n	±10%	50V	SMD	3513 999 55459	
C464	10	±20%	50V	elec	PS99436	
C465	10p	±5%	50V	SMD	3513 999 55313	
C466	10	±20%	50V	elec	PS99436	
C467	2n2	±10%	50V	SMD	3513 999 55463	
C469	1n5	±10%	50V	SMD	3513 999 55461	
C471	10	±20%	50V	elec	PS99436	
C474	82p	±5%	50V	SMD	3513 999 55324	
C475	2n2	±10%	50V	SMD	3513 999 55463	
C476	18p	±5%	50V	SMD	3513 999 55316	
C477	100n	±10%	50V	SMD	3513 999 55498	
C478	22p	±5%	50V	SMD	3513 999 55317	
C479	10n	±10%	50V	SMD	3513 999 55471	
C480	1n	±10%	50V	SMD	3513 999 55459	
C481-483	100n	±10%	50V	SMD	3513 999 55498	
C484,485	10	±20%	50V	elec	PS99436	
C486	100n	±10%	50V	SMD	3513 999 55498	
C487	6p8	±0p5	50V	SMD	3513 999 55311	
C488	15n	±10%	50V	SMD	3513 999 55472	
C490	100p	±5%	50V	SMD	3513 999 55325	
C491	3n3	±10%	50V	SMD	3513 999 55465	
C492	100p	±5%	50V	SMD	3513 999 55325	
C493	22n	±10%	50V	SMD	3513 999 55010	
C494	10	±20%	50V	elec	PS99436	
C497	2n2	±10%	50V	SMD	3513 999 55463	
C499	10n	±10%	50V	SMD	3513 999 55471	
C501	100n	±10%	50V	SMD	3513 999 55498	
C503,504	22	±20%	25V	elec	3513 991 00079	
C505	1	±20%	100V	elec	PS99455	
C506	100	±20%	25V	elec	3513 991 00081	
C507	100n	±10%	50V	SMD	3513 999 55498	
C508	1n	±10%	50V	SMD	3513 999 55459	
C509	270n	±10%	50V	SMD	3513 999 55022	
C511-534	100p	±5%	50V	SMD	3513 999 55325	
C535	100n	±10%	50V	SMD	3513 999 55498	
C537	47p	±5%	50V	SMD	3513 999 55321	
C538	10	±20%	50V	elec	PS99436	
C539	47p	±5%	50V	SMD	3513 999 55321	
C540	22	±20%	100V	elec	PS99456	
C541,542	47p	±5%	50V	SMD	3513 999 55321	
C543	100p	±5%	50V	SMD	3513 999 55325	
C544-550	10n	±10%	50V	SMD	3513 999 55471	
C554-563	10n	±10%	50V	SMD	3513 999 55471	
C568,569	10n	±10%	50V	SMD	3513 999 55471	
C570	1n	±10%	50V	SMD	3513 999 55459	
C601	22p	±5%	50V	SMD	3513 999 55317	
C602	100n	±10%	50V	SMD	3513 999 55498	
C603	1n	±10%	50V	SMD	3513 999 55459	
C604	27p	±5%	50V	SMD	3513 999 55318	
C605	47p	±5%	50V	SMD	3513 999 55321	
C606	120p	±5%	50V	SMD	3513 999 55326	
C607	56p	±5%	50V	SMD	3513 999 55322	
C608	100n	±10%	50V	SMD	3513 999 55498	
C609	1n	±10%	50V	SMD	3513 999 55459	
C610	18p	±5%	50V	SMD	3513 999 55316	
C611	1n	±10%	50V	SMD	3513 999 55459	
C612	47p	±5%	50V	SMD	3513 999 55321	
C613	5p5-50p		variable	PCB mtg	PV99007	
C614	27p	±5%	50V	SMD	3513 999 55318	
C615	220p	±5%	50V	SMD	3513 999 55329	
C616	27p	±5%	50V	SMD	3513 999 55318	
C617	1	±20%	100V	elec	PS99455	
C618,619	100n	±10%	50V	SMD	3513 999 55498	
C620	220p	±5%	50V	SMD	3513 999 55329	
C621	10n	±10%	50V	SMD	3513 999 55471	
C622	22p	±5%	50V	SMD	3513 999 55317	
C624	1n	±10%	50V	SMD	3513 999 55459	
C627	47	±20%	25V	elec	PS99423	
C628	100n	±10%	50V	SMD	3513 999 55498	
C629	1n	±10%	50V	SMD	3513 999 55459	
C630	1	±20%	100V	elec	PS99455	
C632	1n5	±10%	50V	SMD	3513 999 55461	
C634	220p	±5%	50V	SMD	3513 999 55329	
C635	8p5-40p		variable		35313 999 70006	

Cct Ref	Description	Part No	Remarks
Capacitors (Cont'd)			
C636	27p ±5% 50V SMD	3513 999 55318	
C637	4p7 ±0p25 50V SMD	3513 999 55309	
C638	3p3 ±0p25 50V SMD	3513 999 55307	
C639	27p ±5% 50V SMD	3513 999 55318	
C641	47p ±5% 50V SMD	3513 999 55321	
C642	12p ±5% 50V SMD	3513 999 55314	
C643	47p ±5% 50V SMD	3513 999 55321	
C644	22p ±5% 50V SMD	3513 999 55317	
C645-648	100n ±10% 50V SMD	3513 999 55498	
C650	10p ±5% 50V SMD	3513 999 55313	
C651	2p2 ±0p25 50V SMD	3513 999 55305	
C652	1 ±20% 100V elec	PS99455	
C654,655	1n ±10% 50V SMD	3513 999 55459	
C657	1n5 ±10% 50V SMD	3513 999 55461	
C660,661	1n ±10% 50V SMD	3513 999 55459	
C663	12p ±5% 50V SMD	3513 999 55314	
C664-667	100n ±10% 50V SMD	3513 999 55498	
C680-685	10n ±10% 50V SMD	3513 999 55471	
C4100	18p ±5% 50V SMD	3513 999 55316	
C4101	100n ±10% 50V SMD	3513 999 55498	
C4106	100n ±10% 50V SMD	3513 999 55498	
C4107	2n2 ±10% 50V SMD	3513 999 55463	
Inductors			
L101,102	Choke 100µh ±10%	3513 993 22553	
L301	Inductor 1µh ±20% SMD	3513 999 98089	
L302	Inductor 220nh ±20% SMD	3513 999 98086	
L303	Coil	2422 549 40727	
L304	Inductor 10µh ±10% SMD	3513 999 98123	
L305	Inductor 220nh ±20% SMD	3513 999 98086	
L306	Inductor 1µh ±20% SMD	3513 999 98089	
L307,308	Inductor 100nh ±20% SMD	3513 999 98084	
L313,314	Choke 100µh ±10%	3513 993 22553	
L315	Choke 0µ22 ±10%	3513 993 22546	
L316	Inductor 100nh ±20% SMD	3513 999 98084	
L401,402	Inductor 1µh ±20% SMD	3513 999 98089	
L403	Inductor 2µ2 ±20% SMD	3513 999 98090	
L404	Inductor 680nh ±20% SMD	3513 999 98088	
L405-407	Inductor 1000µh ±10% SMD	3513 999 98125	
L408	Inductor 3µ3 ±10% SMD	3513 999 98123	
L409	Coil	2422 549 40728	
L410	Inductor 150nh ±20% SMD	3513 999 98085	
L411	Inductor 680nh ±20% SMD	3513 999 98088	
L412	Inductor 150nh ±20% SMD	3513 999 98085	
L413	Inductor 680nh ±20% SMD	3513 999 98088	
L414	Inductor 150nh ±20% SMD	3513 999 98085	
L415-417	Choke 100µh ±10%	3513 993 22553	
L418	Inductor 3µh3 ±20% SMD	3513 999 98099	
L419	Inductor 3µ3 ±10%	3513 999 98123	
L420	Choke 100µh ±10%	3513 993 22553	
L501	Bead 6-hole ferroxcube	4312 020 36700	
L504	Bead 6-hole ferroxcube	4312 020 36700	
L502-513	Inductor 220nh ±20% SMD	3513 999 98086	
L601	Choke assy toroidal	3513 509 00691	
L602	Inductor 47nh ±20% SMD	3513 999 98081	
L603	Inductor 15nh ±20% SMD	3513 999 98078	
L604	Coil	3513 509 01461	
L605	Coil	3513 509 01451	
L606	Coil	3513 509 01441	
L607,608	Choke RF min 1µh ±10%	FT99102	
L609	Coil	3513 509 01431	
L610	Coil	3513 509 01491	
L611	Coil	3513 509 01431	
L612,613	Inductor 10µh ±10%	3513 999 98123	
L614	Coil	3513 509 01421	
Miscellaneous			
XL1	Crystal 10Mhz	3513 900 60521	
	Bracket Antenna	3513 900 40151	
	Bush Ins(TO-220)	3513 990 16014	1/IC502,503,603
	Cover Screen	3513 901 10251	
	Hdr str male 2-pos'n	FC00837/02	
	Hdr str male 7-pos'n	FC00837/07	
	Heatsink plate assembly	3513 504 03991	

Cct Ref	Description	Part No	Remarks
Miscellaneous (Cont'd)			
	Heatsink plate antenna skt	3513 902 30341	
	Heatsink plate PA	3513 902 30351	
	Holder Crystal Oven	BT45165	
	Link Connector	FC99060	
	Nut st Hex M2,5	QA11604/X	
	Plug PCB mtd straight 2 x 7	FP99290	
	Retainer	BT48026	1/Xtal Oven
	Scr pan pozi M2,5 x 6mm Bt Ni	2522 178 16038	1/IC502,503,603; 1/TR606
	Scr st pan pozi M2,5 x 8mm	QJ11946/X	1/Oven 2/15-way socket
	Scr st tap pozi No.4 x 4,5mm	QJ08227/X	8/VCO covers
	Screen PA	3513 906 20131	
	Screen VCO	3513 906 20121	2/
	Skt BNC type	FS43779	
	Skt 'D' type rt angle 15-way	FS42136	
	Skt Dil 28-way	FS99148	1/IC305
	Washer Compression	QA99040	1/TR606
	Washer Insulating TO-126	QA99016	1/TR502,606
	Washer Thermal TO-220	3513 990 16254	1/IC502,503,603

PCB ASSEMBLY TX DRIVER UHF
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Semiconductors & ICs

IC101	IC 74HC4046 SMD		3513 999 50060
IC102	IC 74HC14-HDL SMD		3513 999 50056
IC103	IC 74HC4024 SMD		3513 999 50038
IC302	IC MB501LFP 2-MODL		3508 100 16310
IC303	IC TL072ID SMD		9338 369 30685
IC304	IC NJ8820GG SMD		4313 324 70001
IC305	Prom assy programmed		AT60171
IC306	IC 74HC574 SMD		3513 999 50027
IC307	IC 74HC688 SMD		3513 999 50034
IC308	IC 74HC126 SMD		3513 999 50069
IC309	Res 9-pin sil 10k ±5%		RN99528
IC401	IC 74HC404 6 SMD		3513 999 50060
IC402	IC 74HC4024 SMD		3513 999 50038
IC403	IC TL072ID SMD		9338 369 30685
IC404	Mixer RMS1 SMD		2722 162 90133
IC501	IC LM258 SMD		3513 999 45008
IC502	IC 7812 Volt Reg & Fix		FU99109
IC503	IC 7805 Volt Reg & Fix		3513 993 34014
IC504	IC LM324-HDL SMD		3513 999 45005
IC601	IC LM324-HDL SMD		3513 999 45005
IC602	IC 74HC00 SMD		3513 999 50000
IC603	IC LM317 SMD		FU99119
TR101	Transistor BFT92 SMD		3513 999 00010
TR102,103	Transistor BFR93 SMD		3513 999 00027
TR104,105	Transistor BCW72 SMD		3513 999 00015
TR106	Transistor BFR93 SMD		3513 999 00027
TR301	Transistor BCV62 SMD		9336 772 30215
TR302	Transistor BCW72 SMD		3513 999 00015
TR303-308	Transistor BFR93 SMD		3513 999 00027
TR401	Transistor BCW70 SMD		3513 999 00003
TR402	Transistor BFR93 SMD		3513 999 00027
TR404	Transistor BCV62 SMD		9336 772 30215
TR406	Transistor BFQ17 SMD		3513 999 00022
TR407-412	Transistor BCW72 SMD		3513 999 00015
TR413	Transistor BCW70 SMD		3513 999 00003
TR414	Transistor BFT92 SMD		3513 999 00010
TR415,416	Transistor BCW72 SMD		3513 999 00015
TR417	Transistor BFR93 SMD		3513 999 00027
TR418	Transistor BCV62 SMD		9336 772 30215
TR420	Transistor BFR93 SMD		3513 999 00027
TR421	Transistor SMD BF992		9336 150 00115
TR422-424	Transistor BFR93 SMD		3513 999 00027
TR425	Transistor BCW72 SMD		3513 999 00015
TR426	Transistor BCW70 SMD		3513 999 00003
TR427	Transistor BCW72 SMD		3513 999 00015
TR428	Transistor BCV62 SMD		9336 772 30215
TR429	Transistor BCW72 SMD		3513 999 00015
TR501	Transistor BCW72 SMD		3513 999 00015
TR502	Transistor BD437 Power GP		FV05887
TR503,504	Transistor BCX19		3513 999 00016
TR505	Transistor BCW70 SMD		3513 999 00003
TR506-508	Transistor BCW72 SMD		3513 999 00015

Cct Ref	Description	Part No.	Remarks
Semiconductors & ICs (Cont'd)			
TR601-603	Transistor BCW72 SMD	3513 999 00015	
TR604	Transistor MRF559	9337 939 60682	
TR605	Transistor BCW72 SMD	3513 999 00015	
TR606	Transistor BD437	FV05887	
TR607	Transistor BLU99 UHF POWER	9336 678 40112	
TR608	Transistor BCW72 SMD	3513 999 00015	
D101	Diode BBY31 SMD	3513 999 25000	
D102,103	Diode BAV99 SMD	3513 999 15002	
D105	Diode BAV99 SMD	3513 999 15002	
D301,302	Diode BBY31 SMD	3513 999 25000	
D303	Diode BAV99 SMD	3513 999 15002	
D305,306	Diode BAV99 SMD	3513 999 15002	
D307	Diode BBY31 SMD	3513 999 25000	
D401	Diode BAT17	3513 999 15006	
D402	Diode BAV99 SMD	3513 999 15002	
D404	Diode BZX84C2V7	3513 999 20001	
D405,406	Diode BAV99 SMD	3513 999 15002	
D407	Diode BAT17	3513 999 15006	
D409	Diode BAV99 SMD	3513 999 15002	
D410	Diode BBY31 SMD	3513 999 25000	
D412	Diode BAV99 SMD	3513 999 15002	
D414,415	Diode BBY31 SMD	3513 999 25000	
D418,419	Diode HSMP-3820	9313 000 03683	
D420,421	Diode BAV99 SMD	3513 999 15002	
D501,502	Diode BAV99 SMD	3513 999 15002	
D503	Led green MV5474C	3513 993 47002	
D504	Diode BZX84C6V8	3513 999 20011	
D505	Diode BZX84C2V7	3513 999 20001	
D506,507	Diode BAV99 SMD	3513 999 15002	
D508,509	Diode BAW56	3513 999 15001	
D510	Diode BZX84C6V2 M C	3513 999 20010	
D511	Diode BAV99 SMD	3513 999 15002	
D512	Led green MV5474C	3513 993 47002	
D513	Diode BAV99 SMD	3513 999 15002	
D514	Led red	3513 993 46000	
D601	Diode BAW56	3513 999 15001	
D603	Diode BAV99 SMD	3513 999 15002	
D604	Diode BZX84C8V2	3513 999 20013	
D605	Diode BZX84C5V6	3513 999 20009	
D606	Diode BZX84C6V8	3513 999 20011	
D607,608	Diode BAT17	3513 999 15006	
D609	Led red	3513 993 46000	
D610	Diode BZX84C8V2	3513 999 20013	
Resistors			
R101	820 ±2% 0,1W SMD	3513 999 80223	
R102	12k ±2% 0,1W SMD	3513 999 80237	
R103	680 ±2% 0,1W SMD	3513 999 80222	
R104	100 ±2% 0,1W SMD	3513 999 80212	
R105,106	1k ±2% 0,1W SMD	3513 999 80224	
R107	3k9 ±2% 0,1W SMD	3513 999 80231	
R108	820 ±2% 0,1W SMD	3513 999 80223	
R109	100 ±2% 0,1W SMD	3513 999 80212	
R110,111	470 ±2% 0,1W SMD	3513 999 80220	
R112	10k ±2% 0,1W SMD	3513 999 80236	
R114	47k ±2% 0,1W SMD	3513 999 80244	
R115	120 ±2% 0,1W SMD	3513 999 80213	
R116,117	4k7 ±2% 0,1W SMD	3513 999 80232	
R118	100k ±2% 0,1W SMD	3513 999 80248	
R119	2k2 ±2% 0,1W SMD	3513 999 80228	
R120	4k7 ±2% 0,1W SMD	3513 999 80232	
R121,122	2k2 ±2% 0,1W SMD	3513 999 80228	
R123	820 ±2% 0,1W SMD	3513 999 80223	
R127	1k ±2% 0,1W SMD	3513 999 80224	
R128	6k8 ±2% 0,1W SMD	3513 999 80234	
R129	1k8 ±2% 0,1W SMD	3513 999 80227	
R130	47 ±2% 0,1W SMD	3513 999 80208	
R131	390 ±2% 0,1W SMD	3513 999 80219	
R132	1k ±2% 0,1W SMD	3513 999 80224	
R133	4k7 ±2% 0,1W SMD	3513 999 80232	
R134	100 ±2% 0,1W SMD	3513 999 80212	
R135	1k ±2% 0,1W SMD	3513 999 80224	
R136	10k ±2% 0,1W SMD	3513 999 80236	
R301	22 ±2% 0,1W SMD	3513 999 80204	
R302	100 ±2% 0,1W SMD	3513 999 80212	

Cct Ref	Description				Part No.	Remarks
Resistors (Cont'd)						
R303	2k2	±2%	0,1W	SMD	3513 999 80228	
R304	22k	±2%	0,1W	SMD	3513 999 80240	
R305,306	3k3	±2%	0,1W	SMD	3513 999 80230	
R307	1k8	±2%	0,1W	SMD	3513 999 80227	
R308	100	±2%	0,1W	SMD	3513 999 80212	
R309	100k	±2%	0,1W	SMD	3513 999 80248	
R310	27	±2%	0,1W	SMD	3513 999 80205	
R311	22	±2%	0,1W	SMD	3513 999 80204	
R312	82	±2%	0,1W	SMD	3513 999 80211	
R313	270	±2%	0,1W	SMD	3513 999 80217	
R314,315	3k9	±2%	0,1W	SMD	3513 999 80231	
R316	120	±2%	0,1W	SMD	3513 999 80213	
R317,318	68	±2%	0,1W	SMD	3513 999 80210	
R319	560	±2%	0,1W	SMD	3513 999 80221	
R320	22	±2%	0,1W	SMD	3513 999 80204	
R321	27	±2%	0,1W	SMD	3513 999 80205	
R322	82	±2%	0,1W	SMD	3513 999 80211	
R323	270	±2%	0,1W	SMD	3513 999 80217	
R324,325	3k9	±2%	0,1W	SMD	3513 999 80231	
R326	560	±2%	0,1W	SMD	3513 999 80221	
R327	330	±2%	0,1W	SMD	3513 999 80218	
R328	47	±2%	0,1W	SMD	3513 999 80208	
R329	18	±2%	0,1W	SMD	3513 999 80203	
R330	39k	±2%	0,1W	SMD	3513 999 80243	
R331,332	10k	±2%	0,1W	SMD	3513 999 80236	
R333	680k	±2%	0,1W	SMD	3513 999 80258	
R334	3k3	±2%	0,1W	SMD	3513 999 80230	
R335	22k	±2%	0,1W	SMD	3513 999 80240	
R336	6k8	±2%	0,1W	SMD	3513 999 80234	
R337,338	10k	±2%	0,1W	SMD	3513 999 80236	
R339	22k	±2%	0,1W	SMD	3513 999 80240	
R340	10k	±2%	0,1W	SMD	3513 999 80236	
R347	1k5	±2%	0,1W	SMD	3513 999 80226	
R348	10k	±2%	0,1W	SMD	3513 999 80236	
R357,358	10k	±2%	0,1W	SMD	3513 999 80236	
R360	10k	±2%	0,1W	SMD	3513 999 80236	
R361	12k	±2%	0,1W	SMD	3513 999 80237	
R363	100	±2%	0,1W	SMD	3513 999 80212	
R364-372	10k	±2%	0,1W	SMD	3513 999 80236	
R401	47	±2%	0,1W	SMD	3513 999 80208	
R402	56	±2%	0,1W	SMD	3513 999 80209	
R403	1k	±2%	0,1W	SMD	3513 999 80224	
R405	100	±2%	0,1W	SMD	3513 999 80212	
R404	2k7	±2%	0,1W	SMD	3513 999 80229	
R406,407	1k	±2%	0,1W	SMD	3513 999 80224	
R408	220	±2%	0,1W	SMD	3513 999 80216	
R409	10k	±2%	0,1W	SMD	3513 999 80236	
R410	3k9	±2%	0,1W	SMD	3513 999 80231	
R411	560	±2%	0,1W	SMD	3513 999 80221	
R412	1k	±2%	0,1W	SMD	3513 999 80224	
R413	8k2	±2%	0,1W	SMD	3513 999 80235	
R414-416	470	±2%	0,1W	SMD	3513 999 80220	
R417	2k2	±2%	0,1W	SMD	3513 999 80228	
R418	100	±2%	0,1W	SMD	3513 999 80212	
R419	22k	±2%	0,1W	SMD	3513 999 80240	
R420	47	±2%	0,1W	SMD	3513 999 80208	
R421,422	10k	±2%	0,1W	SMD	3513 999 80236	
R423	3k3	±2%	0,1W	SMD	3513 999 80230	
R427	470	±2%	0,1W	SMD	3513 999 80220	
R428	330	±2%	0,1W	SMD	3513 999 80218	
R429	680	±2%	0,1W	SMD	3513 999 80222	
R430	220	±2%	0,1W	SMD	3513 999 80216	
R431	1k	±2%	0,1W	SMD	3513 999 80224	
R433	1k	±2%	0,1W	SMD	3513 999 80224	
R434	820	±2%	0,1W	SMD	3513 999 80223	
R435	1k	±2%	0,1W	SMD	3513 999 80224	
R436	150	±2%	0,1W	SMD	3513 999 80214	
R437	22k	±2%	0,1W	SMD	3513 999 80240	
R438	100	±2%	0,1W	SMD	3513 999 80212	
R439	10k	±2%	0,1W	SMD	3513 999 80236	
R440	2k2	±2%	0,1W	SMD	3513 999 80228	
R441	100	±2%	0,1W	SMD	3513 999 80212	
R442	33	±2%	0,1W	SMD	3513 999 80206	
R443	10k	±2%	0,1W	SMD	3513 999 80236	
R444	5k6	±2%	0,1W	SMD	3513 999 80233	
R445	10k	±2%	0,1W	SMD	3513 999 80236	

Cct Ref	Description				Part No.	Remarks
Resistors (Cont'd)						
R446	220	±2%	0,1W	SMD	3513 999 80216	
R447	100	±2%	0,1W	SMD	3513 999 80212	
R448	82	±2%	0,1W	SMD	3513 999 80211	
R449	22	±2%	0,1W	SMD	3513 999 80204	
R450	220	±2%	0,1W	SMD	3513 999 80216	
R451,452	10k	±2%	0,1W	SMD	3513 999 80236	
R453	33	±2%	0,1W	SMD	3513 999 80206	
R454	820	±2%	0,1W	SMD	3513 999 80223	
R455	39	±2%	0,1W	SMD	3513 999 80207	
R456,457	150	±2%	0,1W	SMD	3513 999 80214	
R458	5k6	±2%	0,1W	SMD	3513 999 80233	
R459	1k8	±2%	0,1W	SMD	3513 999 80227	
R460	270	±2%	0,1W	SMD	3513 999 80217	
R461	10k	±2%	0,1W	SMD	3513 999 80236	
R462	33	±2%	0,1W	SMD	3513 999 80206	
R463	5k6	±2%	0,1W	SMD	3513 999 80233	
R464	150	±2%	0,1W	SMD	3513 999 80214	
R465	100	±2%	0,1W	SMD	3513 999 80212	
R466,467	22k	±2%	0,1W	SMD	3513 999 80240	
R468	47k	±2%	0,1W	SMD	3513 999 80244	
R469,470	10k	±2%	0,1W	SMD	3513 999 80236	
R471	270k	±2%	0,1W	SMD	3513 999 80253	
R472	6k8	±2%	0,1W	SMD	3513 999 80234	
R473	10k	±25%	Pot Cermet		3513 999 95007	
R474	100k	±2%	0,1W	SMD	3513 999 80248	
R478	5k6	±2%	0,1W	SMD	3513 999 80233	
R479	100	±2%	0,1W	SMD	3513 999 80212	
R480	47	±2%	0,1W	SMD	3513 999 80208	
R481	150	±2%	0,1W	SMD	3513 999 80214	
R485	220	±2%	0,1W	SMD	3513 999 80216	
R486	10k	±2%	0,1W	SMD	3513 999 80236	
R487	470	±2%	0,1W	SMD	3513 999 80220	
R488	10k	±2%	0,1W	SMD	3513 999 80236	
R489	47k	±2%	0,1W	SMD	3513 999 80244	
R490	10k	±2%	0,1W	SMD	3513 999 80236	
R501	1k	±2%	0,1W	SMD	3513 999 80224	
R502	820k	±2%	0,1W	SMD	3513 999 80259	
R503	680	±2%	0,1W	SMD	3513 999 80222	
R504	470k	±2%	0,1W	SMD	3513 999 80256	
R505	100	±2%	0,1W	SMD	3513 999 80212	
R506	56k	±2%	0,1W	SMD	3513 999 80245	
R507	Thermistor ptc 70°C				PL23137	
R508	4Ω7	±5%	0,125W	SMD	3513 999 80008	
R509	100k	±2%	0,1W	SMD	3513 999 80248	
R510	100	±2%	0,1W	SMD	3513 999 80212	
R511	470	±2%	0,1W	SMD	3513 999 80220	
R512	15k	±2%	0,1W	SMD	3513 999 80238	
R513	3k3	±2%	0,1W	SMD	3513 999 80230	
R514-516	10k	±2%	0,1W	SMD	3513 999 80236	
R517	6k8	±2%	0,1W	SMD	3513 999 80234	
R518	1M	±2%	0,1W	SMD	3513 999 80260	
R519	3k3	±2%	0,1W	SMD	3513 999 80230	
R520,521	100k	±2%	0,1W	SMD	3513 999 80248	
R522	1k	±2%	0,1W	SMD	3513 999 80224	
R523	3k9	±2%	0,1W	SMD	3513 999 80231	
R524	470	±2%	0,1W	SMD	3513 999 80220	
R525	390	±2%	0,1W	SMD	3513 999 80219	
R526	4k7	±2%	0,1W	SMD	3513 999 80232	
R527	100k	±2%	0,1W	SMD	3513 999 80248	
R528	56k	±2%	0,1W	SMD	3513 999 80245	
R529	39k	±2%	0,1W	SMD	3513 999 80243	
R530	27k	±2%	0,1W	SMD	3513 999 80241	
R531,532	4k7	±2%	0,1W	SMD	3513 999 80232	
R533	10k	±2%	0,1W	SMD	3513 999 80236	
R534	47k	±2%	0,1W	SMD	3513 999 80244	
R535	100k	±2%	0,1W	SMD	3513 999 80248	
R536,537	2k2	±2%	0,1W	SMD	3513 999 80228	
R538,539	1k5	±2%	0,1W	SMD	3513 999 80226	
R540	220	±2%	0,1W	SMD	3513 999 80216	
R541,542	2k2	±2%	0,1W	SMD	3513 999 80228	
R543-545	4Ω7	±5%	0,125W	SMD	3513 999 80008	
R547	680k	±2%	0,1W	SMD	3513 999 80258	
R601	10k	±2%	0,1W	SMD	3513 999 80236	
R602	1k	±2%	0,1W	SMD	3513 999 80224	
R603-606	10k	±2%	0,1W	SMD	3513 999 80236	
R607	5k6	±2%	0,1W	SMD	3513 999 80233	

Cct Ref	Description				Part No.	Remarks
Resistors (Cont'd)						
R608	2k2	±2%	0,1W	SMD	3513 999 80228	
R609	1k	±2%	0,1W	SMD	3513 999 80224	
R610	10k	±2%	0,1W	SMD	3513 999 80236	
R612	22Ω	±5%	0,5W	carb	PM00009	
R613	4Ω7	±5%	0,125W	SMD	3513 999 80008	
R614	27	±2%	0,1W	SMD	3513 999 80205	
R615	10	±2%	0.1W	SMD	3513 999 80200	
R616	680	±2%	0,1W	SMD	3513 999 80222	
R617-619	33k	±2%	0,1W	SMD	3513 999 80242	
R620,621	10k	±2%	0,1W	SMD	3513 999 80236	
R622	10k	±25%	Pot Cermet		3513 999 95007	
R623	27k	±2%	0,1W	SMD	3513 999 80241	
R624	10k	±2%	0,1W	SMD	3513 999 80236	
R625	100k	±2%	0,1W	SMD	3513 999 80248	
R629	10k	±2%	0,1W	SMD	3513 999 80236	
R630	47	±2%	0,1W	SMD	3513 999 80208	
R631,632	2k7	±2%	0,1W	SMD	3513 999 80229	
R633	12k	±2%	0,1W	SMD	3513 999 80237	
R634	4k7	±2%	0,1W	SMD	3513 999 80232	
R635	15k	±2%	0,1W	SMD	3513 999 80238	
R636,637	10k	±2%	0,1W	SMD	3513 999 80236	
R638	15k	±2%	0,1W	SMD	3513 999 80238	
R639	1k	±2%	0,1W	SMD	3513 999 80224	
R640	2k7	±2%	0,1W	SMD	3513 999 80229	
R641	4k7	±2%	0,1W	SMD	3513 999 80232	
R642	10k	±2%	0,1W	SMD	3513 999 80236	
R643	6Ω8	±5%	0,25W	c film	PM01410	
R644	2k	±2%	0,1W	SMD	3513 999 80228	
R645	100	±2%	0,1W	SMD	3513 999 80212	
R646	220	±2%	0,1W	SMD	3513 999 80216	
R649	6Ω8	±5%	0,25W	c film	PM01410	
Capacitors						
C101	47n	±10%	50V	SMD	3513 999 55013	
C102	10	±10%	16V	SMD	3513 999 65067	
C103	47n	±10%	50V	SMD	3513 999 55013	
C104,105	1n	±10%	50V	SMD	3513 999 55459	
C106	180p	±5%		cer	3513 991 06056	
C107	0p8-10pf		variable		4313 326 10081	
C108	56p	±5%	50V	SMD	3513 999 55322	
C109	82p	±5%	50V	SMD	3513 999 55324	
C110	47n	±10%	50V	SMD	3513 999 55013	
C111,112	10	±20%	50V	elec	PS99436	
C113	100n	±10%	50V	SMD	3513 999 55498	
C114	47n	±10%	50V	SMD	3513 999 55013	
C115	10	±20%	50V	elec	PS99436	
C116	10n	±10%	50V	SMD	3513 999 55471	
C117	100n	±10%	50V	SMD	3513 999 55498	
C118,119	47n	±10%	50V	SMD	3513 999 55013	
C120	10	±20%	50V	elec	PS99436	
C121	47n	±10%	50V	SMD	3513 999 55013	
C122,123	100n	±10%	50V	SMD	3513 999 55498	
C124	47n	±10%	50V	SMD	3513 999 55013	
C125	1n	±10%	50V	SMD	3513 999 55459	
C126	10	±20%	50V	elec	PS99436	
C127,128	10n	±10%	50V	SMD	3513 999 55471	
C129	180p	±5%		cer	3513 991 06056	
C130	1n	±10%	50V	SMD	3513 999 55459	
C131	10p	±10%	50V	SMD	3513 999 55313	
C301	47	±20%	25V	elec	PS99423	
C302	47n	±10%	50V	SMD	3513 999 55013	
C303	1	±20%	100V	elec	PS99455	
C304	1n	±10%	50V	SMD	3513 999 55459	
C305	10	±20%	50V	elec	PS99436	
C306	1n	±10%	50V	SMD	3513 999 55459	
C307	47n	±10%	50V	SMD	3513 999 55013	
C309	10p	±10%	50V	SMD	3513 999 55313	
C310	4p7	±0p25	50V	SMD	3513 999 55309	
C311	1p	±0p25	50V	SMD	3513 999 55301	
C312,313	1n	±10%	50V	SMD	3513 999 55459	
C315,316	10p	±5%	50V	SMD	3513 999 55313	
C317	1p5	±0p25	50V	SMD	3513 999 55303	
C318-320	1n	±10%	50V	SMD	3513 999 55459	
C321	47n	±10%	50V	SMD	3513 999 55013	
C322	1p2	±0p25	50V	SMD	3513 999 55302	

Cct Ref	Description				Part No.	Remarks
Capacitors (cont'd)						
C323	1n	±10%	50V	SMD	3513 999 55459	
C324	10	±20%	50V	elec	PS99436	
C325	47n	±10%	50V	SMD	3513 999 55013	
C326-330	1n	±10%	50V	SMD	3513 999 55459	
C331	47n	±10%	50V	SMD	3513 999 55013	
C332	1n	±10%	50V	SMD	3513 999 55459	
C333	47n	±10%	50V	SMD	3513 999 55013	
C334	10	±20%	50V	elec	PS99436	
C335	1n	±10%	50V	SMD	3513 999 55459	
C336	1p2	±0p25	50V	SMD	3513 999 55302	
C337	2p2	±0p25	50V	SMD	3513 999 55305	
C338	1n	±10%	50V	SMD	3513 999 55459	
C348-350	1n	±10%	50V	SMD	3513 999 55459	
C351	47n	±10%	50V	SMD	3513 999 55013	
C352	10	±10%	16V	SMD	3513 999 65067	
C353	4p7	±0p25	50V	SMD	3513 999 55309	
C354	8p2	±0p5	50V	SMD	3513 999 55312	
C355	1n2	±10%	50V	SMD	3513 999 55460	
C356	1	±20%	100V	elec	PS99455	
C357	270n	±10%	50V	SMD	3513 999 55022	
C358	10n	±10%	50V	SMD	3513 999 55471	
C359	10	±10%	16V	SMD	3513 999 65067	
C360	47n	±10%	50V	SMD	3513 999 55013	
C361	10	±10%	16V	SMD	3513 999 65067	
C362	0p8-8pf		variable		2022 800 00218	
C364	270n	±10%	50V	SMD	3513 999 55022	
C365	1n	±10%	50V	SMD	3513 999 55459	
C366-368	100n	±10%	50V	SMD	3513 999 55498	
C369	1n	±10%	50V	SMD	3513 999 55459	
C370	15n	±10%	50V	SMD	3513 999 55472	
C371,372	10n	±10%	50V	SMD	3513 999 55471	
C373	270n	±10%	50V	SMD	3513 999 55022	
C374	10n	±10%	50V	SMD	3513 999 55471	
C376	100p	±5%	50V	SMD	3513 999 55325	
C377	10n	±10%	50V	SMD	3513 999 55471	
C378,379	47n	±10%	50V	SMD	3513 999 55013	
C380,381	270n	±10%	50V	SMD	3513 999 55022	
C401	33p	±5%	50V	SMD	3513 999 55319	
C402	33p	±5%	50V	SMD	3513 999 55319	
C403,404	120p	±5%	50V	SMD	3513 999 55326	
C406,407	100n	±10%	50V	SMD	3513 999 55498	
C408	1n	±10%	50V	SMD	3513 999 55459	
C409	100n	±10%	50V	SMD	3513 999 55498	
C410	10	±10%	16V	SMD	3513 999 65067	
C411	10	±20%	50V	elec	PS99436	
C412	47n	±10%	50V	SMD	3513 999 55013	
C413	100n	±10%	50V	SMD	3513 999 55498	
C414	10	±20%	50V	elec	PS99436	
C415	1	±20%	100V	elec	PS99455	
C416	180p	±5%	50V	SMD	3513 999 55328	
C417	10	±10%	16V	SMD	3513 999 65067	
C418	330p	±5%	50V	SMD	3513 999 55331	
C419	100n	±10%	50V	SMD	3513 999 55498	
C420	15p	±5%	50V	SMD	3513 999 55315	
C421	10	±20%	50V	elec	PS99436	
C425-427	1n2	±10%	50V	SMD	3513 999 55460	
C428	3p3	±0p25	50V	SMD	3513 999 55307	
C429	100n	±10%	50V	SMD	3513 999 55498	
C430	1n2	±10%	50V	SMD	3513 999 55460	
C431	100n	±10%	50V	SMD	3513 999 55498	
C432-434	10	±20%	50V	elec	PS99436	
C435	100n	±10%	50V	SMD	3513 999 55498	
C436,437	10	±20%	50V	elec	PS99436	
C438	100n	±10%	50V	SMD	3513 999 55498	
C439	10n	±10%	50V	SMD	3513 999 55471	
C440	10	±20%	50V	elec	PS99436	
C441	1n5	±10%	50V	SMD	3513 999 55461	
C442	330p	±5%	50V	SMD	3513 999 55331	
C443,444	8p2	±0p5	50V	SMD	3513 999 55312	
C445	4p7	±0p25	50V	SMD	3513 999 55309	
C446	2p2	±0p25	50V	SMD	3513 999 55305	
C447	1n	±10%	50V	SMD	3513 999 55459	
C448	1p	±0p25	50V	SMD	3513 999 55301	
C449	10	±20%	50V	elec	PS99436	
C450	47n	±10%	50V	SMD	3513 999 55013	
C451,452	1n	±10%	50V	SMD	3513 999 55459	

Cct Ref	Description				Part No.	Remarks
Capacitors (cont'd)						
C453,454	10	±20%	50V	elec	PS99436	
C455	1n	±10%	50V	SMD	3513 999 55459	
C456	8p2	±0p5	50V	SMD	3513 999 55312	
C457	1n	±10%	50V	SMD	3513 999 55459	
C458	1p8	±0p25	50V	SMD	3513 999 55304	
C459	10	±20%	50V	elec	PS99436	
C460-462	1n	±10%	50V	SMD	3513 999 55459	
C463	10p	±5%	50V	SMD	3513 999 55313	
C464	10	±20%	50V	elec	PS99436	
C465-467	1n	±10%	50V	SMD	3513 999 55459	
C469	2p2	±0p25	50V	SMD	3513 999 55305	
C471	10	±20%	50V	elec	PS99436	
C472	47n	±10%	50V	SMD	3513 999 55013	
C473	1n	±10%	50V	SMD	3513 999 55459	
C474	10	±20%	50V	elec	PS99436	
C475	47n	±10%	50V	SMD	3513 999 55013	
C476	1p8	±0p25	50V	SMD	3513 999 55304	
C477	1n	±10%	50V	SMD	3513 999 55459	
C478	3p3	±0p25	50V	SMD	3513 999 55307	
C479,480	1n	±10%	50V	SMD	3513 999 55459	
C481-483	100n	±10%	50V	SMD	3513 999 55498	
C484,485	10	±20%	50V	elec	PS99436	
C486	100n	±10%	50V	SMD	3513 999 55498	
C487	1n	±10%	50V	SMD	3513 999 55459	
C488	15n	±10%	50V	SMD	3513 999 55472	
C489	1n	±10%	50V	SMD	3513 999 55459	
C490	100p	±5%	50V	SMD	3513 999 55325	
C491	3n3	±10%	50V	SMD	3513 999 55465	
C492	100p	±5%	50V	SMD	3513 999 55325	
C493	22n	±10%	50V	SMD	3513 999 55010	
C494	10	±10%	16V	SMD	3513 999 65067	
C495	10	±20%	50V	elec	PS99436	
C497	1n	±10%	50V	SMD	3513 999 55459	
C498	2p2	±0p25	50V	SMD	3513 999 55305	
C499	1n	±10%	50V	SMD	3513 999 55459	
C501	100n	±10%	50V	SMD	3513 999 55498	
C502	10	±20%	50V	elec	PS99436	
C503,504	22	±20%	25V	elec	3513 991 00079	
C505	1	±20%	100V	elec	PS99455	
C506	100	±20%	25V	elec	3513 991 00081	
C507	100n	±10%	50V	SMD	3513 999 55498	
C508	1n	±10%	50V	SMD	3513 999 55459	
C509,510	270n	±10%	50V	SMD	3513 999 55022	
C511-534	100p	±5%	50V	SMD	3513 999 55325	
C535	100n	±10%	50V	SMD	3513 999 55498	
C536	10	±20%	50V	elec	PS99436	
C537	47p	±5%	50V	SMD	3513 999 55321	
C538	10	±10%	16V	SMD	3513 999 65067	
C539	47p	±5%	50V	SMD	3513 999 55321	
C540	22	±20%	100V	elec	PS99456	
C541,542	47p	±5%	50V	SMD	3513 999 55321	
C543	100p	±5%	50V	SMD	3513 999 55325	
C551-563	10n	±10%	50V	SMD	3513 999 55471	
C564-567	100n	±10%	50V	SMD	3513 999 55498	
C568,569	10n	±10%	50V	SMD	3513 999 55471	
C570	1n	±10%	50V	SMD	3513 999 55459	
C601	22p	±5%	50V	SMD	3513 999 55317	
C602	100n	±10%	50V	SMD	3513 999 55498	
C603	1n	±10%	50V	SMD	3513 999 55459	
C604	5p6	±0p5	50V	SMD	3513 999 55310	
C605	18p	±5%	50V	SMD	3513 999 55316	
C606,607	10p	±5%	50V	SMD	3513 999 55313	
C608	15p	±5%	50V	SMD	3513 999 55315	
C609	6p8	±0p5	50V	SMD	3513 999 55311	
C610	10p	±5%	50V	SMD	3513 999 55313	
C611	1n	±10%	50V	SMD	3513 999 55459	
C612	56p	±5%	50V	SMD	3513 999 55322	
C613	2p7	±0p25	50V	SMD	3513 999 55306	
C614	15p	±5%	50V	SMD	3513 999 55315	
C615	1n	±10%	50V	SMD	3513 999 55459	
C617	1	±20%	100V	elec	PS99455	
C618,619	100n	±10%	50V	SMD	3513 999 55498	
C620	220p	±5%	50V	SMD	3513 999 55329	
C621	10n	±10%	50V	SMD	3513 999 55471	
C622	10	±20%	50V	elec	PS99436	
C623	10p	±5%	50V	SMD	3513 999 55313	

Cct Ref	Description	Part No.	Remarks
Capacitors (Cont'd)			
C624	100n ±10% 50V SMD	3513 999 55498	
C625	1 ±20% 100V elec	PS99455	
C626	100n ±10% 50V SMD	3513 999 55498	
C627	47 ±20% 25V elec	PS99423	
C628	100n ±10% 50V SMD	3513 999 55498	
C629	1n ±10% 50V SMD	3513 999 55459	
C630	1 ±20% 100V elec	PS99455	
C631	10 ±20% 50V elec	PS99436	
C632	1n ±10% 50V SMD	3513 999 55459	
C633	100n ±10% 50V SMD	3513 999 55498	
C634	33p ±5% 50V SMD	3513 999 55319	
C635	5p6 ±0p5 50V SMD	3513 999 55310	
C636,637	3-10p variable SMD	3513 999 70001	
C638	1p ±0p25 50V SMD	3513 999 55301	
C639	4p7 ±0p25 50V SMD	3513 999 55309	
C640	2p2 ±0p25 50V SMD	3513 999 55305	
C641	5p6 ±0p5 50V SMD	3513 999 55310	
C642	2p2 ±0p25 50V SMD	3513 999 55305	
C643	4p7 ±0p25 50V SMD	3513 999 55309	
C644	2p2 ±0p25 50V SMD	3513 999 55305	
C645,646	100n ±10% 50V SMD	3513 999 55498	
C647	3-10p variable SMD	3513 999 70001	
C649	1n ±10% 50V SMD	3513 999 55459	
C650	470p ±5% cer	PN99886	
C651	10n ±10% 50V SMD	3513 999 55471	
C653	10p ±5% 50V SMD	3513 999 55313	
C654	1n ±10% 50V SMD	3513 999 55459	
C656,657	1n ±10% 50V SMD	3513 999 55459	
C4100	0p8-10pf variable	4313 326 10081	
C4101	1p ±0p25 50V SMD	3513 999 55301	
C4102	1n ±10% 50V SMD	3513 999 55459	
C4103	47n ±10% 50V SMD	3513 999 55013	
C4104	1n ±10% 50V SMD	3513 999 55459	
C4105	22n ±10% 50V SMD	3513 999 55010	
C4106	22n ±10% 50V SMD	3513 999 55010	
Inductors			
L101,102	Choke 100µh ±10%	3513 993 22553	
L301	Inductor 1µh ±20% SMD	3513 999 98089	
L302	Inductor 22nh ±20% SMD	3513 999 98079	
L303,304	Inductor 1µh ±20% SMD	3513 999 98089	
L305	Inductor 22nh ±20% SMD	3513 999 98079	
L306	Inductor 1µh ±20% SMD	3513 999 98089	
L307	Inductor 22nh ±20% SMD	3513 999 98079	
L308,309	Inductor 1µh ±20% SMD	3513 999 98089	
L313,314	Choke 100µh ±10%	3513 993 22553	
L315	Choke 0µ22 ±10%	3513 993 22546	
L401	Inductor 220nh ±20% SMD	3513 999 98086	
L402	Inductor 470nh ±20% SMD	3513 999 98087	
L403,404	Inductor 220nh ±20% SMD	3513 999 98086	
L405-407	Inductor 1000µh ±10% SMD	3513 999 98125	
L408-411	Inductor 1µh ±20% SMD	3513 999 98089	
L412	Inductor 22nh ±20% SMD	3513 999 98079	
L413	Inductor 1µh ±20% SMD	3513 999 98089	
L414	Inductor 22nh ±20% SMD	3513 999 98079	
L415-417	Choke 100µh ±10%	3513 993 22553	
L418	Inductor 22nh ±20% SMD	3513 999 98079	
L419	Inductor 1µh ±20% SMD	3513 999 98089	
L420	Choke 100µh ±10%	3513 993 22553	
L501	Bead 6-hole ferroxcube	4312 020 36700	
L502-513	Inductor 220nh ±20% SMD	3513 999 98086	
L514	Bead 6-hole ferroxcube	4312 020 36700	
L601	Choke assy toroidal	3513 509 00691	
L602	Inductor 220nh ±20% SMD	3513 999 98086	
L603	Inductor 1µh ±20% SMD	3513 999 98089	
L604	Coil air spaced	3513 509 00641	
L613	Coil	3513 509 00641	
L614	Coil	3513 509 01421	
Miscellaneous			
SK501	Skt 'D' type rt angle 15-way	FS42136	
SK601	Skt BNC type	FS43779	
Y101	Crystal 10Mhz	3513 900 60521	
	Bracket Antenna	3513 900 40151	

Cct Ref	Description	Part No.	Remarks
Miscellaneous (Cont'd)			
	Bush In(TO-220)	QA99024	1/IC502,503,603
	Cable Semi Rigid 55mm	AT70253	T11,T12
	Cover Screen	3513 901 10251	
	Hdr str male 2-pos'n	FC00837/02	
	Hdr str male 7-pos'n	FC00837/07	
	Heatsink plate	3513 901 30341	
	Heatsink plate assembly	3513 504 03991	
	Holder Crystal Oven	BT45165	
	Link Connector	FC99060	
	Nut st hex M2,5	QA11604/X	2/15-way plug; 1/IC502,503,603; 1/TR606
	Plug PCB mtd straight 2 x 7	FP99290	
	Retainer	BT48026	1/Xtal Oven
	Scr st pan pozi M2,5 x 6mm	QJ11945/X	1/IC502,503,603; 1/TR606
	Scr st pan pozi M2,5 x 8mm	QJ11946/X	1/Oven 2/15-way socket
	Scr st tap pozi No.4 x 4,5	QJ08227/X	8/VCO Covers
	Screen PA	3513 906 20131	
	Screen VCO	3513 906 20121	
	Skt Dil 28-way	FS99148	1/IC305
	Washer Compression	QA99040	1/TR606
	Washer Insulating TO-126	QA99016	1/TR502,606
	Washer Thermal TO-220	QA99111	1/IC502,503,603