

# **ALIGNMENT      PROCEDURE**

Model: 148 NW ST  
Date: 10/16/99

**6. The frequency table of local oscillators and IF stage in transmitting state.**

Channel No.	Transmission frequencies allocated(MHz)	Local oscillator frequencies(MHz)			Carrier oscillator frequencies(MHz)		
		AM mode	USB mode	LSB mode	AM mode	USB mode	LSB mode
1	26.965	34.765	34.7665	34.7635			
2	26.975	34.775	34.7765	34.7735			
3	26.985	34.785	34.7865	34.7835			
4	27.005	34.805	34.8065	34.8035			
5	27.015	34.815	34.8165	34.8135			
6	27.025	34.825	34.8265	34.8235	7.800	7.8015	7.7985
7	27.035	34.835	34.8365	34.8335			
8	27.055	34.855	34.8565	34.8535			
9	27.065	34.865	34.8665	34.8635			
10	27.075	34.875	34.8765	34.8735			
11	27.085	34.885	34.8865	34.8835			
12	27.105	34.905	34.9065	34.9035			
13	27.115	34.915	34.9165	34.9135			
14	27.125	34.925	34.9265	34.9235			
15	27.135	34.935	34.9365	34.9335	7.800	7.8015	7.7985
16	27.155	34.955	34.9565	34.9535			
17	27.165	34.965	34.9665	34.9635			
18	27.175	34.975	34.9765	34.9735			
19	27.185	34.985	34.9865	34.9835			
20	27.205	35.005	35.0065	35.0035			
21	27.215	35.015	35.0165	35.0135			
22	27.225	35.025	35.0265	35.0235			
23	27.255	35.055	35.0565	35.0535			
24	27.235	35.035	35.0365	35.0335			
25	27.245	35.045	35.0465	35.0435	7.800	7.8015	7.7985
26	27.265	35.065	35.0665	35.0635			
27	27.275	35.075	35.0765	35.0735			
28	27.285	35.085	35.0865	35.0835			
29	27.295	35.095	35.0965	35.0935			
30	27.305	35.105	35.1065	35.1035			
31	27.315	35.115	35.1165	35.1135			
32	27.325	35.125	35.1265	35.1235			
33	27.335	35.135	35.1365	35.1335			
34	27.345	35.145	35.1465	35.1435			
35	27.355	35.155	35.1565	35.1535	7.800	7.8015	7.7985
36	27.365	35.165	35.1665	35.1635			
37	27.375	35.175	35.1765	35.1735			
38	27.385	35.185	35.1865	35.1835			
39	27.395	35.195	35.1965	35.1935			
40	27.405	35.205	35.2065	35.2035			

# ALIGNMENT INSTRUCTION

## 1. TEST CONDITION:

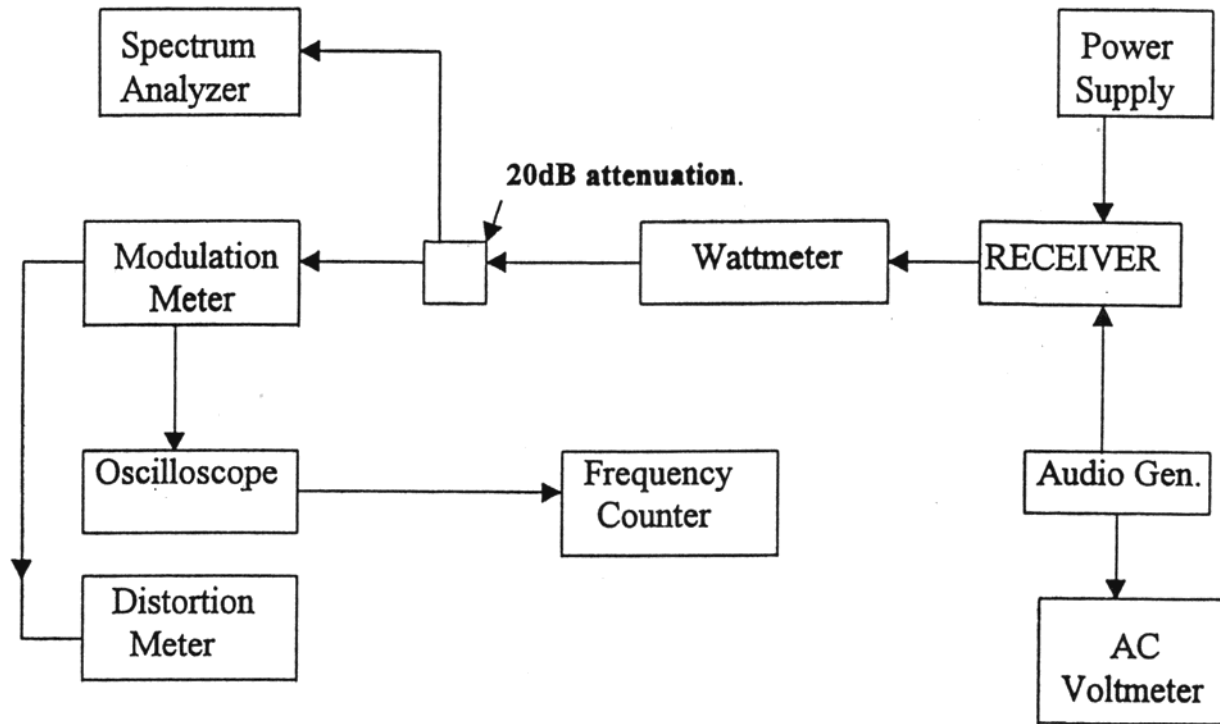
- 1.0. TEST TEMPERATURE 25 ±5 °C
- 1.1. STANDARD DC POWER: 13.8VDC
- 1.2. MEASUREMENT CHANNEL: CH19 (27.185MHz)
- 1.3. STANDARD AUDIO LOADING: 4 Ω
- 1.4. ANTENNA IMPEDANCE: 50 Ω
- 1.5. STANDARD RF INPUT: 1MV
- 1.5. STANDARD REF. MODULATION:   CB    30%  
  SSB    500Hz AND 2400Hz
- 1.6. STANDARD REF. AUDIO OUTPUT: 0.5W
- 1.7. FREQUENCY TABLE
- 1.8. THE PULSE GENERATOR: 1 us pulse at 100 ms and 1V peak-to-peak amplitude, with rise and fall time for less than 10 ns.

### CH NO. FREQ. (MHz)

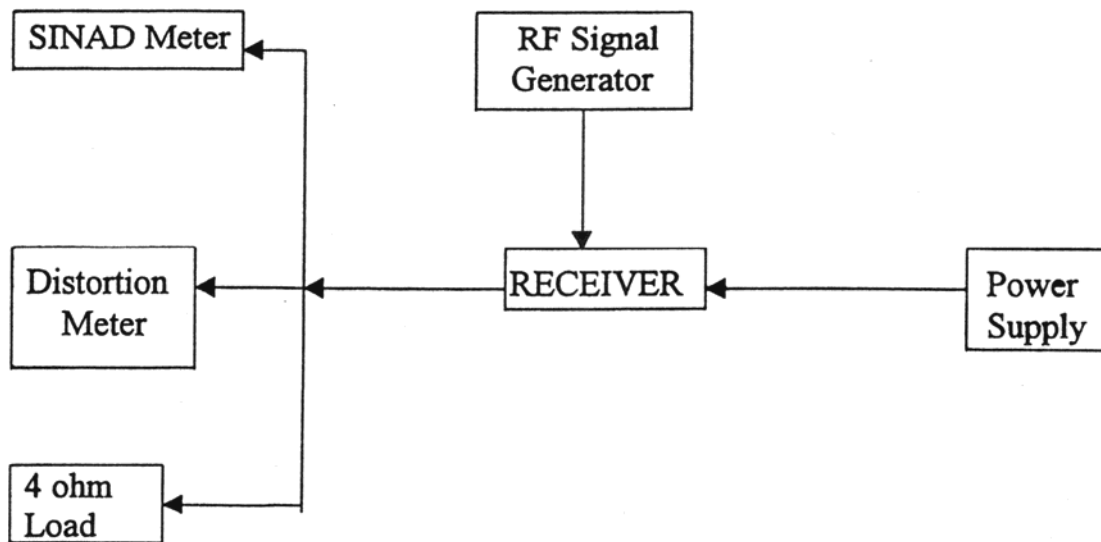
1	26.965
2	26.975
3	26.985
4	27.005
5	27.015
6	27.025
7	27.035
8	27.055
9	27.065
10	27.075
11	27.085
12	27.105
13	27.115
14	27.125
15	27.135
16	27.155
17	27.165
18	27.175
19	27.185
20	27.205
21	27.215
22	27.225
23	27.235
24	27.245
25	27.255
26	27.265
27	27.275
28	27.285
29	27.295
30	27.305
31	27.315
32	27.325
33	27.335
34	27.345
35	27.355
36	27.365
37	27.375
38	27.385
39	27.395
40	27.405

1.9. TEST EQUIPMENT SETUP AS BELOW:

A. TX test equipment setup:



B. RX test equipment setup:



## 2. MAIN ALIGNMENT

### 2.1 VCO Alignment

TEST CONDITION & PROCEDURE	PURPOSE
1. Connect a DC voltage meter to TP9.	Adjust L19 for 3.2A0.1 V at CH1 Check CH40 VCO voltage is 4.2A0.2 V.
2. Connect an Oscilloscope to TP10.	Adjust L21 for Maximum output
3. Connect an Oscilloscope and frequency counter to TP1.	Adjust L20 for Maximum output
4. RX mode, AM, CH19. Voicelock. Midrange.	Adjust L23 for 34.985 MHz
LSB, CH19. Voicelock. Midrange.	Adjust L22 for 34.9835 MHz
USB, CH19. Voicelock. Midrange.	Adjust L59 for 34.9865 MHz

### 2.2. Carrier Alignment

TEST CONDITION & PROCEDURE	PURPOSE
1. Connect an Oscilloscope and frequency counter to TP14.	
2. TX mode, AM, CH19.	Adjust L31 for 7.8 MHz.
3. RX mode, LSB, CH19.	Adjust L30 for 7.7985 MHz.
USB, CH19.	Adjust CT2 for 7.8015 MHz.

## 3. RECEIVER ALIGNMENT

Connect an AC VTVM across speaker voice coil.

Adjust volume control to obtain a suitable indication. Set generator output low enough to prevent AGC limiting. Preset controls as follows, unless otherwise noted:

RF Gain Maximum, Voicelock Midrange, Squelch Minimum, NB/ANL off, HI/TONE/LOW tone

Test Equipment	Transceiver	Adjust	Remark
Output of signal generator thru 0.01uF to TP16 (TR15 Emitter). Fre=7.8 005 MHz, NO modulation. RF output 1000 uV.	CH19,USB	L7, L8, L9, L10, L12, L14.	Adjust for maximum output and minimum distortion.
Output of signal generator thru 0.01 uF to TP15 (FET1 Gate 1). Fre=455 KHz, 1000 Hz @ 30% Modulation. Output 100 mV.	CH19 , AM	L15, L13, L3	Adjust for maximum output and minimum distortion.
Output of signal generator to antenna input. Fre=27.185 MHz, 1000 Hz @ 30% Modulation. RF output 1 uV.	CH19, AM	L4, L5, L6,	Adjust for maximum output and the SINAD to 12 dB or more.
RF output of signal generator and pulse generator to antenna input by the combiner. Fre=27.185 MHz, 1000 Hz @ 30% Modulation.	CH19, AM NB/ANL/OFF SWITCH TO NB	L1, L2	Set pulse generator for OFF. Set RF generator for 12dB SINAD audio output. Set pulse generator for ON. Adjust for 10 dB SINAD or more of the audio output.

## 1. RECEIVER ADJUSTMENT

Connect an AC VTVM across speaker voice coil.

Adjust volume control to obtain a suitable indication.

Preset controls as follows, unless otherwise noted:

RF Gain Maximum, Voicelock Midrange, Squelch Minimum, NB / ANL off, HI/TONE/LOW tone

Test Equipment	Transceiver	Adjust	Remark
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% Modulation. RF output 1800uV.	CH19, AM Squelch max.	VR3	SQUELCH RANGE Adjust for audio output just breaks.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% Modulation. RF output 100uV.	CH19, AM	VR1	AM SIGNAL METER Adjust for 9 on signal scale of meter.
Output of signal generator to antenna input. 27.186MHz, no Modulation. RF output 100uV.	CH19, USB	VR2	SSB SIGNAL METER Adjust for 9 on signal scale of meter.

## 2. Transmitter Alignment

Connector a 50 ohm 25 watt dummy load to antenna connector.

Note: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.

Test Equipment	Transceiver	Adjust	Remark
1. Input of RF wattmeter to antenna input.	CH19, AM	L47, L48, L46, L45, L38	Adjust for maximum RF output.
2. Input of spectrum analyzer or harmonic meter to antenna input.	CH19,AM	L36	Adjust for Minimum at 54MHz (2 <sup>nd</sup> Harmonic)

## 3. Transmitter Adjustments

Connector a 50 ohm 25 watt dummy load to antenna connector.

Note: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.

<b>Test Equipment</b>	<b>Transceiver</b>	<b>Adjust</b>	<b>Remark</b>
1. Input of RF wattmeter to antenna input No modulation	CH19,USB Dynamike MINIMUM TX	VR7	CARRIER BLANCE Adjust for MINIMUM RF output.
2. Input of RF wattmeter to antenna input Insert a 0-500mA DC meter at TP8 No modulation.	CH19,USB Dynamike MINIMUM TX	VR9	DRIVER BIAS Adjust for 25mA.
3. Input of RF wattmeter to antenna input Insert a 0-500mA DC meter at TP7 No modulation.	CH19,USB Dynamike MINIMUM TX	VR8	FINAL BIAS Adjust for 50mA.
4. Input of RF wattmeter to antenna input Insert a two-tone, 500mV signal at mic input.	CH19,USB Dynamike MAXIMUM TX	VR11	SSB ALC Adjust for 12.0 watts PEP RF output maximum.
5. Input of RF wattmeter to antenna input	CH19, AM Dynamike MINIMUM TX	VR10	AM CARRIER POWER Adjust for 4.0 watts RF output.
6. Input of RF wattmeter to antenna input	CH19, AM Dynamike MINIMUM TX	VR6	RF PWR METER Adjust so RF PWR meter agrees with RF wattmeter.
7. Input of RF frequency counter to antenna input thru 20dB attenuation.	CH19, AM Dynamike MINIMUM TX	VR5	TX Carrier frequency Adjust for 27.185MHz $\pm 200$ Hz at the frequency counter.
8. Input of RF Modulation meter to antenna input thru 20dB attenuation. Output of AF generator to MIC jack, @ 1000Hz, 50mV	CH19, AM Dynamike MAXIMUM TX	VR501	MAXIMUM Modulation Adjust for 88-90% modulation. (AMC control)
9. Connector a 100 ohm RF load to antenna input. Set the S/RF\CAL\SWR switch to CAL position, and adjust the SWR control to the "CAL" mark on the meter then the S/RF\CAL\SWR switch to SWR position.	CH19, AM Dynamike MINIMUM TX	VR12	SWR Adjust for 2 on the SWR meter

CB 148NW BOM

Item	Description	Qty	LOCATION
CA-73N	MIC UNIT (ALL)	1	
CA-73NC	MIC CASING (ALL)	1	
CA-73NCXXX	MIC CASING COMMON	1	
KEJ-163	MIC PLUG 4 PIN FOR COBRA	1	A:KEJ-033
KEJ-033	MIC PLUG 4 PIN M24	0	
KEJW-SA26BK	STRAND WIRE UL1007 #26 BLACK	0.02	L=20mm
KEM-OT0702	SPONGY 38 OD x 26 ID x 5 THK	1	
KEM-OT7001	FELT DIA. 28	1	
KEM-OT9005	P.V.C. SLEEVE-CURL CORD	0.03	
KEM-P7001A	FRONT CABINET	1	E:548-G5128
KEM-P7001-01	FRONT CABINET W/O PRINTING	1	E:G5128
KEM-P7001A-Z	PRINTING FOR FRONT CABINET	1	E:G5128
KEM-P7002A	REAR CABINET	1	E:540
KEM-P7003A	MIC. BRACKET	1	E:540
KEM-P7103E	PTT SWITCH KNOB	1	E:572
KEM-P7107B	HANGING KNOB	1	E:566-G5189
KEM-TS2606B1N	TAPPING SCREW B/HD T2.6x6	1	
KEM-TS2608B1N	TAPPING SCREW B/HD T2.6x8	3	
KEM-TS3010P1B	TAPPING SCREW P/HD T3X10	1	
KEM-WI1003903X	SELF LOCKING WASHER DIA.4	1	
KEM-WP0952805N	M2.8 PLAIN WASHER 103J-1	1	
KEOE-OT041	FIBRE SLEEVING DIA 1.5mm	0.01	
KEOE-OT042	FIBRE SLEEVING DIA 2MM	0.025	L=10mm,L=15mm
KESP-016	MIC DYNAMIC	1	
KESW-079	PUSH-BUTTON SWITCH 4P2T	1	
KETC-036-5	CURL CORD 4 CORES 3.05M	1	
148NWB	MAIN UNIT	1	
148NWBBC	MAIN CASING (ALL)	1	
148NWBXXX	MAIN CASING COMMON	1	
KEJ-226H	HOUSING 2PIN UL1007 #26 275MM	1	METER
KEJ-227H	HOUSING 3PIN UL1007 #26 210MM	1	DYNAMIKE
KEJ-228H	HOUSING 3PIN UL1007 #26 90MM	1	VOICE LOCK
KEJ-229H	HOUSING 3PIN UL1007 #26 215MM	1	407LCM
KEJ-230H	HOUSING 4PIN UL1007 #26 135MM	1	MIC1234
KEJ-231H	HOUSING 6PIN UL1007 #26 300MM	1	CON408
KEJ-232H	HOUSING 6PIN UL1007 #26 235MM	1	CON402
KEJ-233H	HOUSING 6PIN UL1007 #26 270MM	1	CON401
KEJ-235H	HOUSING 10PIN UL1007 #26 285MM	1	CON403
KEJ-236H	HOUSING 11PIN UL1007 #26 310MM	1	CON404
KEJ-241	SOCKET 4PIN FOR MIC	1	J404
KEJ-264	CONNECTOR FOR EL AMP 2PIN	1	J1002 E:572
KEJW-SA22BK	STRAND WIRE UL1007 #22 BLACK	0.05	JW1003 E:639
KEJW-SA24GR	STRAND WIRE UL1007 #24 GREEN	0.2	JW1004 E:574
KEJW-SA24WE	STRAND WIRE UL1007 #24 WHITE	0.2	JW1006 E:574
KEJW-XXXBJW-23	WIRE BARE TINNED	0.024	JW01 E:647
KEM-AN3314003YB	M3.0 ANT TERMINAL (10014-6) NI BRASS	1	
KEM-MS2604P2N	M2.6x4 P/HD SCREW	11	
KEM-MS3006B2N	M3x6 B/HD SCREW	7	E:623
KEM-MS3008B2N	M3x8 B/HD SCREW	3	E:567
KEM-MS3008C2N	SCREW-MACHINE F/H M3X8	4	
KEM-M2352A-01	BRACKET-FRONT PANEL	1	E:618
KEM-M2354	COVER-BOTTOM	1	
KEM-M2355	COVER-TOP	1	
KEM-M2357	BRACKET-40CH SW	1	
KEM-M2358	BRACKET-PCB	1	
KEM-M2364	SHIELD	1	E:610,619
KEM-M2365-01	NAME PLATE	1	
KEM-M2368A	BRACKET (EL CONTACT)	1	E:513
KEM-M2369	CONTACT PCB BRACKET	1	
KEM-M2370A	SHIELD CAN FOR EL TAIL	1	E:555
KEM-M8403	INSERT 1	2	
KEM-M8407A	LOCK SPRING	2	
KEM-NF0553040Z	FLANGE NUT M3.0	4	
KEM-NH0553022G	HEX NUT M3.0x0.5x2.2T (3504-1)	2	E:567
KEM-OT0706	FELT STRIP 75X10MM	0.5	E:571
KEM-OT2352	FELT	4	
KEM-OT2353	INSULATION SHEET	1	E:610,619
KEM-OT2356A	CLAMP CUSHION	2	
KEM-OT2357	"EL" OVERLAY (16285-LA)	1	
KEM-OT2358	CUSHION FOR CONTACT PCB	1	
KEM-OT2359	CUSHION	1	E:578
KEM-OT2360	CUSHION	1	E:578



CB 148NW BOM

Item	Description	Qty	LOCATION
KEM-OT2361	CUSHION	4	E:578
KEM-OTS002	KEY HIMERON	4	E:565
KEM-OTS215	PVC TAPE	0.02	L=20MM
KEM-P2351-01	FRONT PANEL	1	
KEM-P2352	LED LENS	1	
KEM-P2353	BAND SELECT KNOB	1	
KEM-P2354A	OUTER KWOB	2	E:546
KEM-P2355B	INNER KNOB	2	E:655
KEM-P2356	VR KNOB	3	
KEM-P8405B	PUSH COVER	1	
KEM-TS3006B4Z	TAPTITE SCREW B/H T3x6	1	E:571
KEM-TS3006B5B	TAPTITE SCREW B/H S M3x6	16	
KEM-WE0643304N	M3 EXT TOOTH WASHER (304)	2	E:554
KEM-WF0703308X	FIBRE WASHER 7.00DX3.31DX0.8TH (1103-2)	2	E:510
KEOE-OT182	CABLE TIE TSL-102M 2.5X102MM	8	E:574,648
KEOE-OT402	METER ANALOG H-319-8456	1	M401
KEOE-OT412	"EL" LAMP (15897-EN)	1	E:574
KEOE-OT416-2	WIRE SHIELD UL258R#26X2C 148NW	1	JW1001(RED),JW1002(WHITE)
KEOE-OT417	HEAT SHRINKABLE TUBING @5.7X28	0.015	E:574,588,609
KEPC-348-A	PCB SW403 24X25.5X1.6MM DS FR4	1	E:508
KEPC-349-B	PCB SW404 27X25.5X1.6MM DS FR4	1	
KEPC-386-A	PCB EL CONNECTOR 12x8.5x1.6mm SS 94HB	1	E:572
KEPC-451-A	PCB RF/GAIN 19.5X29X1.6MM SS	1	E:635
KEPC-452-A	PCB VOL/SQ 19.5X29X1.6MM SS	1	E:635
KER-D104B103A-A	VR DUAL SHAFT 100KBO/10KAI W/SW ALPHA	1	VR401/405
KER-D502B102B-A	VR DUAL SHAFT 5KBO/1KAI ALPHA W ALPHA	1	E:625 VR404/406
KER-102CBB	RES. C-FILM 1/4W 5% S 1K	1	E:625 R192
KER-102P02-2	POT RV16A-10-20K-A13 A1KOHM FOR148N	1	E:E502 VR403
KER-203P07-3	POT. RV16A-10-20K-B24 B20KOHM FOR 148	1	E:627 VR402
KER-502P11-3	POT. RV16A-10-20K-B53 B5KOHM FOR 148	1	E:627 VR701
KESP-085-1	SPEAKER YD93-3A 40HM 5W	1	E:627 SPK
KESW-090	SWITCH SLIDE 3P3T	4	E:632 SW403,405,407,408
KESW-091	SWITCH SLIDE 3P2T	1	SW404
148NWB1	MAIN PCB (ALL)	1	
148NWB1XXX	MAIN PCB COMMON	1	
KCD-KDS184	DIODE SWITCH KDS184 SOT-23	1	D50 E:574
KCD-KDS226	DIODE SWITCHING SOT-23 PACKAGEKDS226	1	D49 E:574
KEC-E104HRMU	CAP. ELECT. 50V M 0.1UF	1	C101
KEC-E105HRMU	CAP. ELECT. 50V M% 1UF	6	C33,144,148,174,191,230
KEC-E106ERMU	CAP. ELECT. 16V M% 10UF	3	C13,C173,C121 E:550,642
KEC-E108ERMU	CAP. ELECT. 16V M% 1000UF	2	C84,181
KEC-E108FRMU	CAP. ELECT. 25V M% 1000UF	2	C172,175
KEC-E225HRMU	CAP. ELECT. 50V M% 2.2UF	3	C99,132,232
KEC-E226ERMU	CAP. ELECT. 16V M% 22UF	2	C73,109
KEC-E227ERMU	CAP. ELECT. 16V M% 220UF	2	C18,186
KEC-E336ERMU	CAP. ELECT. 16V M% 33UF	2	C72,180
KEC-E474HRMU	CAP. ELECT. 50V M% 0.47UF	5	C23,25,108,135,231
KEC-E475FRMKA	CAP. ELECT. 25V M% 4.7UF	1	C115 E:551
KEC-E475HRMU	CAP. ELECT. 50V M% 4.7UF	3	C24,C92,C136
KEC-E476ERMU	CAP. ELECT. 16V M% 47UF	5	C74,95,153,176,531
KEC-MY104IRKA	CAP. MYLAR 100V K% 0.1UF	1	C205
KEC-TRO32	CAP. TRIMMER JTC06C200 20PF	1	CT2 E:665
KEC-TRO20	CAP. TRIMMER TZ03T200ER 20PF	0	
KEC-T105ERMU	CAP. TANT. 16V M% 1UF	2	C62,C67
KEC-T106ERMU	CAP. TANT. 16V M% 10UF	2	C100,103
KEC-T224GRMU	CAP. TANT. 35V M% 0.22UF	1	C10
KEC-T225ERMU	CAP. TANT. 16V M% 2.2UF	2	C80,81
KEC-T474GRMU	CAP. TANT. 35V M% 0.47UF	3	C29,90,104
KEC-T685ERMU	CAP. TANT. 16V M% 6.8UF	1	C179
KEC-100FRDNPOT	CAP. CER. 50V CH D% 10PF	1	C131
KEC-101FRJNPOT	CAP. CER. 50V CH J% 100PF	4	C15,17,45,149
KEC-102FAMBT	AXIAL CERAMIC 0.001UF UPO50B102MK 50V	20	C5,8,11,14,35,37,39,42,43,44,70,71,154,170,185,209 ,403,404,407,40 E:574,615

CB 148NW BOM

Item	Description	Qty	LOCATION
KEC-102FRZFT	CAP. CER. 50V F Z% 0.001UF	2	C402,C208 E:574
KEC-103DAMY5ST	AXIAL CERAMIC 0.01UF EP050Y103MN 16V	24	C78,93,96,97,107,110,111,112,114,113,118,119, 120,126,129,164,198,199,201,202,532,533,534,535, E:519,595
KEC-103FRZFT	CAP. CER. 50V F Z% 0.01UF	1	C409
KEC-104ERZY5VT	CAP. CER. 25V Y5V Z% 0.1UF	1	C76 E:595
KEC-104FRKSRMU	MULTILAYER CERAMIC K% 0.1UF 50V	9	C36,79,155,183,187,192,195,501,237
KEC-104FRZFT	CAP. CER. 50V F Z% 0.1UF	1	C57 E:574
KEC-109FRCNPOT	CAP. CER. 50V CH C% 1PF	3	C130,137,139
KEC-120FRJNPOT	CAP. CER. 50V CH J% 12PF	1	C31
KEC-121FRJNPOT	CAP. CER. 50V CH J% 120PF	1	C122
KEC-181FRJNPOT	CAP. CER. 50V CH J% 180PF	1	C143
KEC-209FRCNPOT	CAP. CER. 50V CH C% 2PF	3	C41,47,163
KEC-220FRJNPOT	CAP. CER. 50V CH J% 22PF	3	C68,85,86
KEC-221FRJNPOT	CAP. CER. 50V CH J% 220PF	5	C64,66,123,177,178
KEC-222DAMY5RT	AXIAL CERAMIC 0.0022UF EP050X222MN 16V	2	C69,105,
KEC-223FAZRHT	AXIAL CERAMIC 0.022UF RH050F223Z 50V	32	C2,C4,C6,C7,C16,C21,C22,C27,C46,C49,C50,C51,C52 C53,C54,C55,C58,C61,C63,C82,C83,C87,C124,C182,C190 C197,C204,C215,C227,C228,C229,C401
KEC-240FRJNPOT	CAP. CER. 50V CH J% 24PF	1	C213
KEC-270FRJNPOT	CAP. CER. 50V CH J% 27PF	1	C98
KEC-271FRKBT	CAP. CER. 50V B K% 270PF	2	C156,C28 E:574
KEC-309FRDNPOT	CAP. CER. 50V CH D% 3PF	1	C145
KEC-330FRJNPOT	CAP. CER. 50V CH J% 33PF	3	C1,128,142
KEC-331FRKSLT	CAP. CER. 50V SL K% 330PF	3	C161,235,236
KEC-390FRJNPOT	CAP. CER. 50V CH J% 39PF	1	C26
KEC-391FRKSLT	CAP. CER. 50V SL K% 390PF	3	C146,150,152
KEC-409FRDNPOT	CAP. CER. 50V CH D% 4PF	1	C38
KEC-470FRJNPOT	CAP. CER. 50V CH J% 47PF	5	C88,89,147,207,520
KEC-471FRKSLT	CAP. CER. 50V SL K% 470PF	2	C117,212
KEC-472DAMXT	AXIAL CERAMIC 0.0047UF EP050X472MN 16V	20	C30,32,34,102,138,140,151,157,158,159,160,165,166, 167,168,169,171,200,223,224,
KEC-473FRKBT	CAP. CER. 50V B K% 0.047uF	12	C19,C56,C59,C60,C75,C77,C94,C188,C193,C194,C225 C512 E:512,574
KEC-509FRCNPOT	CAP. CER. 50V CH C% 5PF	4	C48,65,116,125
KEC-680FRJNPOT	CAP. CER. 50V CH J% 68PF	2	C162,C521 E:574
KEC-683ERKYRT	CAP. CER. 25V YR K% 0.068UF	1	C91E:512
KEC-820FRJNPOT	CAP. CER. 50V CH J% 82PF	3	C9,127,141
KECF-0083	CRYSTAL FILTER 7.8MHZ	1	FT2
KECF-0084	CRYSTAL FILTER 7.8MHZ FL-067Z	1	FT3
KECF-0098	CER FILTER CFWS455HT	1	FT1 A:KECF-0018 E:508
KECF-0018	CER. FILTER CFW455HT	0	
KED-KDV251M	DIODE VARICAP KDV251M	2	D35,69
KED-ZB3V9	DIODE ZENER BZX 55/C 3V9	1	Z1 E:642
KED-2-2AP261	DIODE GERMANIUM 2-2AP261	11	D1,D2,D10,D21,D22,D45,D46,D54,D71,D73,D74
KED-1K261	DIODE GERMANIUM 1K261	0	
KED-4004-A	DIODE IN4004	2	D4,D55 E:G5509
KED-4004	DIODE 1N4004	0	
KED-4148-A	DIODE IN4148 TOYO KUNI	46	D3,D5,D6,D7,D8,D9,D11,D13,D14,D15,D16,D17,D18,D19 D20,D23,D24,D31,D32,D33,D34,D36,D37,D38,D39,D40 D41,D42,D47,D48,D51,D52,D53,D58,D59,D60,D61,D63 D65,D66,D67,D68,D75,D76,D771,D501 E:564
KED-4148	DIODE 1N4148	0	
KEFB-006	COIL TOROIDAL 35UH 5T	1	L44
KEFB-007	CORE BEAD 0.11UH +/-20%	1	L34
KEFB-008	COIL CHOKE 39UH +/-20% TRA-069	1	L1002 E:574
KEI-179TK	COIL IFT TKAC-K5781N 7.8MHZ 10MM	1	L1
KEI-180TK	COIL IFT TKAC-K5782N	1	L2
KEI-181TK	COIL IFT TKXC-K5783UH 27MHZ 10MM	1	L46
KEI-182TK	COIL IFT TKAC-K5784X 7.96MHZ 10MM	1	L7
KEI-183TK	COIL IFT TKAC-K5785Y 7.96MHZ 10MM	1	L10
KEI-184TK	COIL IFT TKXN-K5786Z 10.7MHZ 10MM	1	L59
KEI-185TK	COIL IFT TKXN-5787Z 7.96MHZ 10MM	1	L22
KEI-186TK	COIL IFT TKXC-K5788N 34.9MHZ 10MM	1	L20
KEI-187TK	COIL IFT TKXN-K5789Z 27MHZ 10MM	1	L45

CB 148NW BOM

Item	Description	Qty	LOCATION
KEI-188TK	COIL IFT TKXC-5772AN 27MHZ 10MM	1	L6
KEI-189TK	COIL IFT TKAN-K5773Z 7.96MHZ 10MM	1	L31
KEI-190TK	COIL IFT TKAC-K5774N 7.96MHZ 10MM	1	L12
KEI-191TK	COIL IFT TKXN-K5775Z 10.7MHZ 10MM	1	L23
KEI-192TK	COIL IFT TKXC-K5776N 34.9MHZ 10MM	1	L47
KEI-193TK	COIL IFT VTKXNA-K5777Z 35MHZ 10MM	1	L19
KEI-194TK	COIL IFT TKXC-K5778N 33MHZ 10MM	1	L21
KEI-195TK	COIL IFT TKXC-K5779N 27MHZ 10MM	1	L5
KEI-196TK	COIL IFT TKAN-K5780Z 7.96MHZ 10MM	1	L30
KEI-197TK	COIL IFT TKXN-K5790N 7.96MHZ 10MM	1	L14
KEI-198TK	COIL IFT TKAC-K5791X 7.96MHZ 10MM	1	L48
KEI-199TK	COIL IFT TKAC-K5792Y 7.96MHZ 10MM	1	L8
KEI-200TK	COIL IFT TKXC-K5793X 27MHZ 10MM	1	L4
KEI-201TK	COIL IFT TKAC-K5794Y 7.96MHZ 10MM	1	L9
KEI-202TK	COIL IFT RLE-K5296N 455KHZ 10MM	1	L15
KEI-203TK	COIL IFT RLE-K5297N 455KHZ 10MM	1	L13
KEI-204TK	COIL IFT ROC-K5298N 455KHZ 10MM	1	L3
KEIC-KA7809	IC VOLTAGE REGULATOR TO-220	1	IC4 E:643
KEIC-KIA7809P	IC KIA7809P VOLTAGE REGULATOR TO-200A	0	
KEIC-KIA7217AP	IC KIA7217AP	1	IC6 E:574
KEIC-MMB8719	IC MMB8719 PLL	1	IC1
KEIC-TDA6131XS	IC MIXER TDA6131XS P-TSSOP-16	1	IC5 E:642
KEIC-UPC1037HA	IC UPC1037HA	1	IC3
KEJ-010-1	JACK ANTENNA RECEPTACLE	1	ANT(J40) E:613
KEJ-012	SPEAKER JACK JC-304B	2	J401 J402 E:574
KEJ-060	JACK DC POWER 2S-I0813 #01	1	DC JACK E:574
KEJ-239	DC TERMINAL UL1007 #24 225MM DARK GR	1	TP7
KEJ-240	DC TERMINAL UL1007 #24 225MM VIOLET	1	TP8
KEJW-CO003	WIRE SHIELD UL1533#26 130mm GY	1	SHEL
KEJW-CO004	WIRE SHIELD UL1533 #26 GREY 170MM	2	SHEL1, SHEL2
KEJW-SA22BK	STRAND WIRE UL1007 #22 BLACK	0.08	JB-(50MM)JW1003 E:574,615
KEJW-SA22RD	STRAND WIRE UL1007 #22 RED	0.49	POFF (L=300mm), PON (L=140mm)JB+ (L=50mm) E:615
KEJW-TA24AE	TINNED WIRE UL1007 #24 ORANGE	0.29	J15(0.2),J4(0.09)
KEJW-TA24BK	TINNED WIRE UL1007 #24 BLACK	0.13	J11(0.13)
KEJW-TA24BL	TINNED WIRE UL1007 #24 BLUE	0.33	J7(0.26),J8(0.07) E:508,609
KEJW-TA24BN	TINNED WIRE UL1007 #24 BROWN	0.36	J12(0.1), J2(0.15),JDG(0.05), JDG1(0.05) E:580
KEJW-TA24GR	TINNED WIRE UL1007 #24 GREEN	0.43	L=220MM - J6,L=210MM - SPK+ E:539
KEJW-TA24GY	TINNED WIRE UL1007 #24 GRAY	0.2	J9(0.2)
KEJW-TA24RD	TINNED WIRE UL1007 #24 RED	0.31	J14(0.18),JA(0.07),J16(60MM) E:508,568,609
KEJW-TA24VI	TINNED WIRE UL1007 #24 VIOLET	0.22	J8(0.22)
KEJW-TA24WE	TINNED WIRE UL1007 #24 WHITE	0.2	J10(0.2)
KEJW-TA24YW	TINNED WIRE UL1007 #24 YELLOW	0.67	J5(0.2), SPK-(0.21), JD(0.05), JD1(0.05) ST5 E:580
KEJW-XXXBJW-20	WIRE BARE TINNED 0.8MM	0.05	ANT
KEJW-XXXBJW-23	WIRE BARE TINNED	1.422	L=15MM - JW23,JW36,JW65,R190 L=15.5MM - JW55,JW61 L=16MM - JW1 JW16,JW26,JW29,JW32, JW33,JW34,JW37,JW44,JW46,JW49,JW57, JW66,JW8,JW70,JW71,JW72,R43 L=17MM - JW6,JW10,JW12,JW19,JW20, JW21,JW22,JW31,JW42,JW53,JW56,JW63, L=18MM - JW3,JW4,JW47,JW48,JW62,JW6 L=19MM - JW5,JW27,JW54 L=20MM - JW15,JW11,JW24,JW25,JW28,JW43,JW51 L=22MM - JW14,JW64,R190 L=24MM - JW13,JW35,JW39,JW60,L=23MM - JW2 L=25MM - JW7,JW9,JW41,JW50,JW52,L405 L=26MM - JW58,JW59,L=28MM - JW45,L=50MM - D56 E:508,568,642,645,658
KEL-S063	COIL SPRING 3X0.7X5T:R	1	L41
KEL-S064	COIL SPRING 8.1X0.8X6.5T:R	2	L35,37,
KEL-V158-HA	COIL VARIABLE 0.15UH 20%	2	L36,L38
KEL-101MA-1	COIL FIXED 100UH 10%	2	L16,33
KEL-149LH-3	COIL CHOKE 4X0.8X8T:R	2	L39,L42

CB 148NW BOM

Item	Description	Qty	LOCATION
KEL-221MA-1	COIL AXIAL 220UH 10% AL0305-221K	3	L24,25,26
KEL-471MA-1	COIL AXIAL 470UH 5% AL0305-471J	8	L17,27,28,29,32,57,58,60
KEM-AN3314003YB	M3.0 ANT TERMINAL (10014-6) NI BRASS	2	
KEM-MS3006B2N	M3x6 B/HD SCREW	4	E:556,567
KEM-MS3008B2N	M3x8 B/HD SCREW	7	E:567
KEM-MS3010B2N	M3X10 B/HD SCREW	1	
KEM-MS3012C2N	SCREW-MACHINE F/H M3X12	1	
KEM-M2351A	SIDE PANEL	2	
KEM-M2353	REAR PANEL	1	
KEM-M2366A	HEAT SINK	1	
KEM-M2371	SHIELD CASE	1	E:652
KEM-NH0553022G	HEX NUT M3.0x0.5x2.2T (3504-1)	9	E:567
KEM-OT2354	SHOULDER WASHER	2	
KEM-OT2358	CUSHION FOR CONTACT PCB	1	E:511
KEM-OT2362	INSULATED SHEET	1	E:652
KEM-OT9002	BLIND RIVET DIA 3.2x6	1	
KEM-P9001	SLEEVE-JACK (FORKEJ-012)	2	
KEM-TS3006B4Z	TAPTITE SCREW B/H T3x6	6	E:571
KEM-WI0643304N	INNER TOOTHED LOCK WASHER DIA. 3 (404)	5	E:621
KEM-WS0553307Z	WASHER SPRING ID3.3X5.5XT0.7	9	E:621
KEOE-OT040	FIBRE SLEEVING DIA. 1MM	0.012	JW7
			E:590
KEOE-OT124	MICA SHEET FOR TA7222P	1	YM1
			E:574
KEOE-OT125-1	MICA SHEET FOR 2SC1957Q03.0MM	3	YM2,YM3,YM4
			E:574
KEOE-OT128	BUSHING FOR 2SC2075	1	FOR TR36
			E:574
KEOE-OT182	CABLE TIE TSL-102M 2.5X102MM	2	E:598
KEOE-OT190	FREEITE BEAD HF55BTL 3.5X8R	7	L40,43,49,51,52,404,501
KEOE-OT400	COIL RF CHOKE 10UH CORE	2	L401,402
KEPC-332-D	PCB MAIN 194X188X1.6MM 94HB	1	E:649
KEPC-350-B	PCB SMD DIODE 15X18X1.6MM DS FR4	1	E:574
KER-100JBB	RES. C-FILM 1/8W 5% S 10	5	R63,130,181,183,255
KER-101JBB	RES. C-FILM 1/8W 5% S 100	16	R21,R38,R51,R52,R55,R75,R105,R108,R139,R179,R186
			R188,R189,R241,R257,R501
			E:642
KER-102JBB	RES. C-FILM 1/8W 5% S 1K	27	R20,24,33,36,42,48,49,56,61,87,90,92,104,115,170
			R121,138,140,146,153,167,164,195,222,194
			R503,R136
			E:E503,516,521,550
KER-102KV5F637A	RES. SEMI KV5F637A 1KOHM	3	VR3,VR12,VR501
			E:566,617
KER-103CBB	RES. C-FILM 1/4W 5% S 10K	1	R178
KER-103EVM5AGA	RES. SEMI. EVM5AGA00B 10KB	1	VR7
KER-103JBB	RES. C-FILM 1/8W 5% S 10K	28	R11,12,14,16,19,22,23,53,78,89,93,101,113,119
			R132,142,145,152,154,157,158,203,223,237,238,239
			R161,73
			E:E503,596
KER-103KV5F637A	RES. SEMI. KV5F637A 10K	1	VR11
			E:633
KER-103D8A	RES. SEMI. EVN-D8A-A03 10K	0	
KER-103RH06J	RES. SEMI. RH0615C14J 10K	0	
KER-103D8Y	RES. SEMI. EVN-D8Y-A03-B14 10K	0	
KER-104JBB	RES. C-FILM 1/8W 5% S 100K	4	R10,82,83,225
KER-104KV5F637A	RES. SEMI. KV5F637A 100K	1	VR6
KER-105JBB	RES. C-FILM 1/8W 5% S 1M	3	R80,127,258
KER-122JBB	RES. C-FILM 1/8W 5% S 1.2K	2	R45,R185
			E:576,582,617
KER-123JBB	RES. C-FILM 1/8W 5% S 12K	5	R39,R65,R98,R174,R79
			E:595,596
KER-151JBB	RES. C-FILM 1/8W 5% S 150	5	R29,R106,R177,R254,R265
			E:654
KER-152JBB	RES. C-FILM 1/8W 5% S 1.5K	8	R26,R27,R64,R112,R135,R165,R191,R95
			E:576
KER-153JBB	RES. C-FILM 1/8W 5% S 15K	1	R66
			E:595
KER-182JBB	RES. C-FILM 1/8W 5% S 1K8	1	R124
KER-183JBB	RES. C-FILM 1/8W 5% S 18K	3	R2,149,159
KER-184JBB	RES. C-FILM 1/8W 5% S 180K	2	R35,54
KER-202JBB	RES. C-FILM 1/8W 5% S 2K	1	R235
			E:E508
KER-220JBB	RES. C-FILM 1/8W 5% S 22	1	R62
KER-221FBB	RES. C-FILM 2W 5% 220 OHM	1	R193
KER-221JBB	RES. C-FILM 1/8W 5% S 220	9	R5,25,37,60,70,143,150,205,209
KER-222JBB	RES. C-FILM 1/8W 5% S 2.2K	11	R41,R50,R97,R102,R120,R141,R160,R175,R259,R103,R30
			E:516,582

CB 148NW BOM

Item	Description	Qty	LOCATION
KER-223JBB	RES. C-FILM 1/8W 5% S 22K	6	R125,R128,R151,R156,R163,R202 E:568
KER-224JBB	RES. C-FILM 1/8W 5% S 220K	1	R110
KER-242JBB	RES. C-FILM 1/8W 5% S 2K4	1	R46
KER-271DBB	RES. C-FILM 1/2W 5% S 270	1	R180
KER-271JBB	RES. C-FILM 1/8W 5% S 270	1	R117
KER-272JBB	RES. C-FILM 1/8W 5% S 2.7K	5	R7,91,144,187,207
KER-273JBB	RES. C-FILM 1/8W 5% S 27K	1	R114
KER-274JBB	RES. C-FILM 1/8W 5% S 270K	1	R206
KER-330JBB	RES. C-FILM 1/8W 5% S 33	1	R256
KER-330JFB	RES. C-FILM 1/8W 5% F 33	1	R517 E:642
KER-331JBB	RES. C-FILM 1/8W 5% S 330	5	R3,R8,R15,R31,R184 E:582
KER-332JBB	RES. C-FILM 1/8W 5% S 3.3K	12	R1,17,28,34,58,77,88,116,134,166,201,224 E:E508
KER-333JBB	RES. C-FILM 1/8W 5% S 33K	3	R96,99,129 E:E503
KER-339JBB	RES. C-FILM 1/8W 5% S 3.3	1	R68
KER-362JFB	RES. C-FILM 1/8W 5% F 3.6K	1	126
KER-392JBB	RES. C-FILM 1/8W 5% S 3.9K	4	R32,R47,R109,R173 E:568
KER-470DBB	RES. C-FILM 1/2W 5% S 47	1	R169
KER-470JBB	RES. C-FILM 1/8W 5% S 47	1	R198
KER-471JBB	RES. C-FILM 1/8W 5% S 470	7	R4,R57,R67,R122,R71,R204,R94 E:516,583
KER-472JBB	RES. C-FILM 1/8W 5% S 4.7K	5	R72,R131,R196,R197,R162 E:550
KER-472KVSF637A	RES. SEMI. KVSF637A 4.7KOHM	5	VR1,VR2,VR5,VR10,VR9 E:617
KER-473JBB	RES. C-FILM 1/8W 5% S 47K	5	R6,86,118,133,226 E:E508,516
KER-474JBB	RES. C-FILM 1/8W 5% S 470K	1	R13 E:595
KER-501KVSF637A	RES. SEMI. KVSF637A 500 OHM KOA	1	VR8 E:566
KER-504KVSF637A	RES. SEMI. KVSF637A 500K	1	R85 E:600
KER-560JBB	RES. C-FILM 1/8W 5% S 56	1	R107
KER-561JBB	RES. C-FILM 1/8W 5% S 560	2	R111,R228
KER-562JBB	RES. C-FILM 1/8W 5% S 5.6K	2	R18,R40 E:550
KER-563JBB	RES. C-FILM 1/8W 5% S 56K	1	R155
KER-564JBB	RES. C-FILM 1/8W 5% S 560K	1	R234
KER-622JBB	RES. C-FILM 1/8W 5% S 6.2K	1	R74 E:E503
KER-680JBB	RES. C-FILM 1/8W 5% S 68	3	R9,76,266
KER-681JBB	RES. C-FILM 1/8W 5% S 680	3	R199,R168,R182 E:521,583,617,642
KER-682JBB	RES. C-FILM 1/8W 5% S 6.8K	4	R69,100,200,416
KER-683JBB	RES. C-FILM 1/8W 5% S 68K	2	R81,84
KER-821JBB	RES. C-FILM 1/8W 5% S 820	3	R59,R232,R233 E:582
KER-822JBB	RES. C-FILM 1/8W 5% S 8.2K	5	R44,123,147,148,236
KER-823JFB	RES. C-FILM 1/8W 5% F 82K	1	R250 E:642
KET-BF964SA	FET BF964SA (TO 50)	1	FET1 A:KET-BF964SB E:E506
KET-BF964SB	FET BF964S(B) (TO50)	0	
KET-J310	FET J310	1	FET3
KET-KTA1266	TRANSISTOR KTA1266(GR) PNP	6	TR7,13,25,27,47,48
KET-KTC3192(O)	TRANSISTOR KTC3192(O) NPN	4	TR16,TR17,TR18,TR52
KET-KTC3192Y	TRANSISTOR KTC3192(Y) AT NPN	1	TR12(D12)
KET-KTC3194Y	TRANSISTOR KTC3194(Y) NPN	11	TR1,TR2,TR3,TR9,TR11,TR15,TR20,TR29,TR30,TR32,TR34
KET-KTC3194O	TRANSISTOR KTC3194(O) NPN	1	TR14
KET-KTC3198	TRANSISTOR KTC3198(GR) NPN	16	TR4,TR5,TR6,TR8,TR10,TR12,TR19,TR21,TR22,TR23,TR26 TR31,TR33,TR42,TR43,TR53 E:579
KET-KTC4369Y	TRANSISTOR KTC4369Y NPN (TO-2201S)	3	TR28,TR37,TR41 E:574
KET-SS8550D	TRANSISTOR PNP SS8550D	2	TR44,TR40 E:550,561
KET-LM8550J	TRANSISTOR PNP LM8550J	0	
KET-2SC1969C	TRANSISTOR 2SC1969C NPN (TO-220)	1	TR36 E:574
KET-2SC2166C	TRANSISTOR 2SC2166(C) NPN (TO-220)	1	TR38

CB 148NW BOM

Item	Description	Qty	LOCATION
KET-2SC2314F	TRANSISTOR 2SL2314(F) NPN	1	E:574
KET-2SC945AP	TRANSISTOR NPN 2SC945AP	4	TR39
			TR24,TR35,TR45,TR46
			E:550,579
KET-2SK192ABL	FET 2SK192A-BL	1	FET2
			E:611
KETR-033-1	TRANSFORMER LHOKE EI28C-086C	1	T1
KEX-0342	CRYSTAL HC49U 7.3450MHZ 30PM 95P	1	X1
KEX-0343	CRYSTAL HC49U 11.3250MHZ 20PPM30PF U	1	X3
KEX-0344	CRYSTAL HC49U 7.80MHZ 20PM 42P	1	X4
KEX-0346	CRYSTAL HC49U 10.24MHE 20PPM 20PF KO	1	X2
148NWB2	40CH PCB (ALL)	1	
148NWB2XXX	40CH PCB COMMON	1	
KEJ-071W	WAFER 5267-07A (7P)	1	J401W
KEJ-237H	HOUSING 7PIN UL1007 #26 215MM	1	J401H
KEJW-FC043	FLAT CABLE 12 CORES 5-60-5MMU L2.5MM	1	JW201
KESW-089	CHANNEL SELECTOR GPS-0738 40CH	1	SW401
148NWB2SB	40CH PCB BOTTOM SMD	1	
KCC-103FRKBM	CAP. CER. CHIP 50V B K% 0.01UF	1	C911
KCC-104ERZFM	CAP. CER. CHIP 25V F Z% 0.1UF	1	C931
KCC-106BRZFM-1	CAP. CER. CHIP 10V F Z% 10UF	4	C924,C925,C926,C932
			E:586
KCC-222FRKBM	CAP. CER. CHIP 50V B K% 0.0022UF	1	C910
KCC-225BRZFM-1	CAP. CER. CHIP 10V F Z% 2.2uF	1	C929
			E:586
KCC-471FRJNPOM	CAP. CER. CHIP 50V NPO J% 470PF	1	C934
KCC-683FRKBM	CAP. CER. CHIP 50V B K% 0.068UF	1	C912
KCR-100A	RES. CHIP 1/10W 10	1	R928
KCR-104A	RES. CHIP 1/10W 100K	2	R951,R952
KCR-222A	RES. CHIP 1/10W 2.2K	14	R401,R402,R403,R404,R405,R406,R407,R408,R409,R410
			R411,R412,R413,R414
KCR-273A	RES. CHIP 1/10W 27K	1	R923
KCR-334A	RES. CHIP 1/10W 330K	1	R924
KCR-472A	RES. CHIP 1/10W 4.7K	1	R922
KCT-KTC3875Y	TR. NPN KTC3875Y HFE120-240	1	TR901
KEIC-KIA78L05F	IC KIA78L05F REGULATOR SOT-89	1	IC903
KEIC-TA31101AF	IC TA31101AF COMPANDER SOP	1	IC901
KEIC-TC4066BF	IC TC4066BF-EL ANA SW	1	IC902
148NWB2ST	40CH PCB TOP SMD	1	
KCC-103FRKBM	CAP. CER. CHIP 50V B K% 0.01UF	3	C916,C918,C920
KCC-104ERZFM	CAP. CER. CHIP 25V F Z% 0.1UF	1	C915
KCC-106BRZFM-1	CAP. CER. CHIP 10V F Z% 10UF	3	C917,C923,C928
			E:586
KCC-223FRKBM	CAP. CER. CHIP 50V B K% 0.022uF	1	C909
KCC-225BRZFM-1	CAP. CER. CHIP 10V F Z% 2.2uF	1	C930
			E:586
KCC-473FRKBM	CAP. CER. CHIP 50V B K% 0.047U	2	C922,C933
KCC-474DRZFM	CAP. CER. CHIP 16V F Z 0.47UF	2	C914,C921
			E:585
KCC-682FRKBM	CAP. CER. CHIP 50V B K% 0.0068UF	1	C935
KCR-102A	RES. CHIP 1/10W 1K	1	R912
KCR-123A	RES. CHIP 1/10W 12K	1	R927
KCR-182A	RES. CHIP 1/10W 1.8K	1	R911
KCR-222A	RES. CHIP 1/10W 2.2K	1	R910
KCR-331A	RES. CHIP 1/10W 330	1	R920
KCR-334A	RES. CHIP 1/10W 330K	1	R936
KCR-472A	RES. CHIP 1/10W 4.7K	3	R921,R925,R935
KCR-681A	RES. CHIP 1/10W 680	2	R926,R937
			E:521,550
KCT-KTC3875Y	TR. NPN KTC3875Y HFE120-240	1	TR902
KEPC-335-C	PCB 40CH SELECT 42X53X1.6MM DS	1	E:585
148NWB3	VCO PCB (ALL)	1	
148NWB3XXX	VCO PCB COMMON	1	
148NWB3S	VCO PCB SMT	1	
KCC-100FRCNPOM	CAP. CER. CHIP 50V CH C% 10PF	1	C603
KCC-102FRJNPOM	CAP. CER. CHIP 50V CH J% 0.001UF	1	C605
KCC-103FRKBM	CAP. CER. CHIP 50V B K% 0.01UF	2	C601,608
KCC-121FRJNPOM	CAP. CER. CHIP 50V CH J% 120PF	1	C606
KCC-391FRJNPOM	CAP. CER. CHIP 50V CH J% 390PF	1	C607
KCC-509FRCNPOM	CAP. CER. CHIP 50V CH C% 5PF	1	C602
KCC-560FRJNPOM	CAP. CER. CHIP 50V CH J% 56PF	1	C604
KCD-KDS181SA3	DIODE SWITCHING KDS181SA3	2	D602
KCD-KDV251S	DIODE VARICAP CHIP KDV251S 12V	1	D601
KCR-101A	RES. CHIP 1/10W 100	1	R602
KCR-102A	RES. CHIP 1/10W 1K	2	R604,608
KCR-103A	RES. CHIP 1/10W 10K	1	R609
KCR-221A	RES. CHIP 1/10W 220	1	R603

CB 148NW BOM

Item	Description	Qty	LOCATION
KCR-332A	RES. CHIP 1/10W 3.3K	1	R601
KCR-512A	RES. CHIP 1/10W 5.1K	1	R606
KCR-682A	RES. CHIP 1/10W 6.8K	1	R605
KCR-822A	RES. CHIP 1/10W 8.2K	1	R607
KCT-KTC3880S	TR. CHIP NPN KTC3880S SOT-23	2	TR601,602 E:E502
KEPC-370-B	PCB VCO 33X21X1.6MM DS FR4	1	
148NWB4	LED PCB (ALL)	1	
148NWB4XXX	LED PCB COMMON	1	
KED-A402BR-L4	LED DUAL DIGITS DISPLAY A402BR	0	
KED-LA4042-11B	DIODE LED 7 SEGS 2 DIGITS LA4042-11 BRRN	1	LED2 E:636
KED-L204R	DIODE LED EL204HD RED	1	LED3
KED-L64GR	DIODE LED LT0362-25-D63 RED-GREEN	1	LED1
KEJW-FC058	FLAT CABLE 4PIN 3-40-3MM PITCH2MM	1	JW402
KEJW-FC059	FLEXIBLE F. C. 19PIN PITCH 1.78MM 46MM	1	JW401
KEJW-SA24BL	STRAND WIRE UL1007 #24 BLUE	0.2	JW1007 E:574
KEJW-SA24BN	STRAND WIRE UL1007 #24 BROWN	0.2	JW1005 E:574 E:638
KEOE-OT414-A	COVER FOR CB DUAL DIGIT DISPLAY	1	
KEOE-OT414	COVER FOR A402BR-L4 RED	0	
KEPC-334-D	PCB LED 24X55X1.6MM DS FR4	1	
KESW-064	PUSH BUTTON SWITCH 2C2P W/LOCK	1	SW1
148NWB5	NIGHT WATCH (ALL)	1	
148NWB5XXX	NIGHT WATCH COMMON	1	
KEC-E107FRMU	CAP. ELECT. 25V M% 100UF	2	C1002,C1007
KEC-E477FRMU-1	CAP.ELECT 25V M% 470UF 10x12mm	1	C1006 E:509
KEC-MY683IRKP	CAP. MYLAR 100V K% 0.068UF	1	C1005
KEC-T106ERMU	CAP. TANT. 16V M% 10UF	1	D1001 E:570
KEJW-SA24AE	STRAND WIRE UL1007 #24 ORANGE	0.2	JW1008
KEJW-SA24RD	STRAND WIRE UL1007 #24 RED	0.2	JW1011L=200MM E:568
KEJW-SA24YW	STRAND WIRE UL1007 #24 YELLOW	0.24	JW1009
KEJW-XXBJW-23	WIRE BARE TINNED	0.02	J1001
KEL-102HA-5	COIL FIXED 1mH 10% WITH UL TUBE	1	L1001
KEM-MS3006C2N	SCREW-MACHINE F/H M3X6MM	2	E:567
KEM-M2367	BRACKET FOR SHIELD CASE	1	E:567
KEM-M8411A	SHIELD CASING	1	E:567
KEM-OT8407	SHIELD CUCHION 19X14X1,0	1	E:604
KET-LM8050J	TRANSISTOR NPN LM8050J	1	Q1001
KET-2SC945AP	TRANSISTOR NPN 2SC945AP	2	Q1002,Q1003
148NWB55	NIGHT WATCH SMT	1	
KCC-102FRKBB	CAP. CER. CHIP 50V B K% 0.001UF	2	C1003,C1004
KCC-104ERZFM	CAP. CER. CHIP 25V F Z% 0.1UF	1	C1008 E:574
KCD-LL4148	DIODE CHIP LL4148	2	D1002,D1003 E:G5607
KCD-LS4148	DIODE CHIP LS4148	0	
KCD-TZMCSV1	DIODE CHIP ZENER TZMCSV1 0.5W 5.1V	1	D1001 E:G5516
KCD-ZMM5V1	DIODE CHIP ZENER ZMM5V1 0.5W 5.1V	0	
KCR-100A	RES. CHIP 1/10W 10	1	R1006
KCR-102A	RES. CHIP 1/10W 1K	4	R1001,R1002,R1007,R1011
KCR-205A	RES. CHIP 1/10W 2M	1	R1004
KCR-242A	RES. CHIP 1/10W 2.4K	1	R1008
KCR-272A	RES. CHIP 1/10W 2.7K	2	R1009,R1010
KCR-513A	RES. CHIP 1/10W 51K	2	R1005,R1015
KCR-514A	RES. CHIP 1/10W 510K	1	R1003
KCR-561A	RES. CHIP 1/10W 560	1	R1018 E:508
KCR-681A	RES. CHIP 1/10W 680	1	R1019 E:508
KCR-821A	RES. CHIP 1/10W 820	1	R1012
KCR-911A	RES. CHIP 1/10W 910	2	R1013,R1014 E:547
KCR-912A	RES. CHIP 1/10W 9.1K	2	R1016,R1017
KEIC-IMP803	IC IMP803 EL LAMP SOP 8PINS	1	IC1001
KEPC-389-C	PCB EL 26X30X1.6MM SS 94HB	1	
148NWP	PACKING (ALL)	1	
148NWPXXXX	PACKING COMMON	1	
KEM-M2359	MOUNTING PLATE	1	
KEM-M2360	BRACKET-MIC BODY	1	
KEM-OT2355	RUBBER WASHER ID7XOD25XT1.5	4	
KEM-OT9002	BLIND RIVET DIA 3.2x6	2	
KEM-PB1010-04	POLYBAG (100X100)	2	
KEM-PB2006-04	POLYBAG - D.C. CORD	1	E:556
KEM-PB2818-04	CARD POLYBAG	1	E:556

CB 148NW BOM

Item	Description	Qty	LOCATION
KEM-PB4111-10	POLYBAG (410X110)	1	
KEM-PB4131-10	POLYBAG 410X310X0.1MM	1	
KEM-PB6511-10A	POLYBAG 650X110X0.1MM	1	E:644
KEM-PK0632	95 RULE BOOKLET	1	
KEM-PK0633	FCC LABEL	1	
KEM-PK0732	SHIPPING CARTON POLYBAG	0.167	
KEM-PK2351-01	GIFT BOX	1	
KEM-PK2352A	INNER BOX	1	
KEM-PK2353-05	SHIPPING CARTON	0.167	E:653
KEM-PK2355	CUSHION (MIC)	1	
KEM-PK2356	CUSHION (MIN UNIT)	2	
KEM-PK2358-05	OWNER'S MANUAL	1	E:656
KEM-PK2366-01	LABEL BAR CODE UPC	0.334	
KEM-PK8412	BLANK LABEL 30X45	1	
KEM-PK2370	FITTING CARDBOARD	0.167	
KEM-PK2371X1232	BARCODE SERIAL NO. LABEL	3	
KEM-PK8411	BLANK LABEL 60X20	1	E:553
KEM-PK2373	GIFTBOX FITTING (1)	2	E:578
KEM-PK2374	GIFTBOX FITTING (2)	2	E:578
KEM-PK2375	GIFTBOX FITTING (3)	2	E:578
KEM-PK2927C	CUSTOMER ASSISTANCE CARD	1	
KEM-PK8409	REGISTRATION CARD	1	
KEM-PK8415-02	P.O.P LBEL	1	
KEM-PK8418B	LINER	1	
KEM-PK8609-03	BAR CODE CARTON LABEL	0.33	E:628
KEM-PK8610	BLANK LABEL 100X50(CLBG30JY10050)	1	E:628
KEM-P2357	SCREW MOUNTING M6X12(P1)	4	
KEM-TS3010P1N	TAPPING SCREW P/HD T3X10	2	
KEM-TS5012T3Z	TAPPING SCREW T/HD 5X12	4	
KEM-WE0643304N	M3 EXT TOOTH WASHER (304)	2	
KEM-WE1005306N	OUTER TOOTHED LOCK WASHER DIA. 5 (306)	4	
KEOE-OT415	DC CORD WITH 3A FUSE FOR 148ST	1	





**I48 GTL**  
**I48 GTL ST**  
**I48 NW ST SM**

**6500 W. Cortland St., Chicago, IL 60707**  
**Technical Support Number 1-800-638-3680**  
**Customer Service Number 1-773-889-3087**