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**Courier Citation Owner's Manual Issue C**  
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**OWNER'S  
MANUAL**



**COURIER "CITATION"  
DELUXE SOLID-STATE  
CITIZENS BAND TRANSCEIVER  
WITH DIGITAL CLOCK**

# SPECIFICATIONS

## GENERAL

- \* Transistors - 19
- \* IC (Integrated Circuit)-1
- \* Diodes - 16
- \* Self-contained speaker - 6" x 2" - 8 ohm voice coil
- \* Detachable, Noise-cancelling Dynamic Microphone with remote switch
- \* Illuminated Channel Indicator and "S"/RF power meter
- \* Modulation Indicator
- \* Transmit Indicator
- \* Receive Indicator
- \* 50 ohm antenna impedance
- \* Operated from a 117V 60 Hz AC supply
- \* 23 channel selector plus P.A. switch
- \* Slide Volume & Squelch controls
- \* AUTO ON-OFF power switch
- \* Delta Tuning switch
- \* External Speaker Jack
- \* P.A. JACK
- \* Co-axial type antenna connector
- \* Sealed receiver-transmitter relay switch
- \* T.V.I. - Television interference trap circuit
- \* Illuminated Digital clock
- \* Auto Noise Limiter switch

## RECEIVER SECTION

* Frequency Range (MHz)	26.965 to 27.255
* Sensitivity	0.3 $\mu$ V for 10 db S/N at 1000 Hz at 30% modulation
* Selectivity	BW 6 KHz at 6 db down
* Adj. channel Rejection	Better than 45 db
* Audio Distortion at 1000 Hz	Less than 10% at 3W
* Spurious Response	Better than 50 db
* Crossmodulation Rejection	Better than 40 db
* Intermodulation Rejection	Better than 50 db
* Readability	0.1 $\mu$ V at 85% modulation
* Squelch Sensitivity	0.1 $\mu$ V
* Squelch Stop Sensitivity	30 $\mu$ V (adjustable)
* Noise Limiter	Series gate
* Audio output at 8 ohms	3W minimum

# TRANSMITTER SECTION

* Frequency Range (MHz)	26.965 to 27.255
* Power Input at 117V AC	5W
* Power Output at 117V AC	3W
* Modulation (5 mW at mic.)	100%
* Emission (Class D Operation)	6A3
* Hum and Noise	40 db down
* Frequency Tolerance	Better than $\pm 0.005\%$
* Antenna Impedance	50 ohms
* Switching	Enclosed relay
* Modulation Distortion	Less than 15% at 85% modulation at 1000 Hz
* Spurious Suppression	Better than 50 db

## FCC LICENSE

Before transmitting with your transceiver, it is essential that you acquire an FCC Class D Citizens Radio Service license. A license application form #505 can be obtained from the Federal Communications Commission, Washington, D.C. 20554 or from the nearest FCC field office listed below.

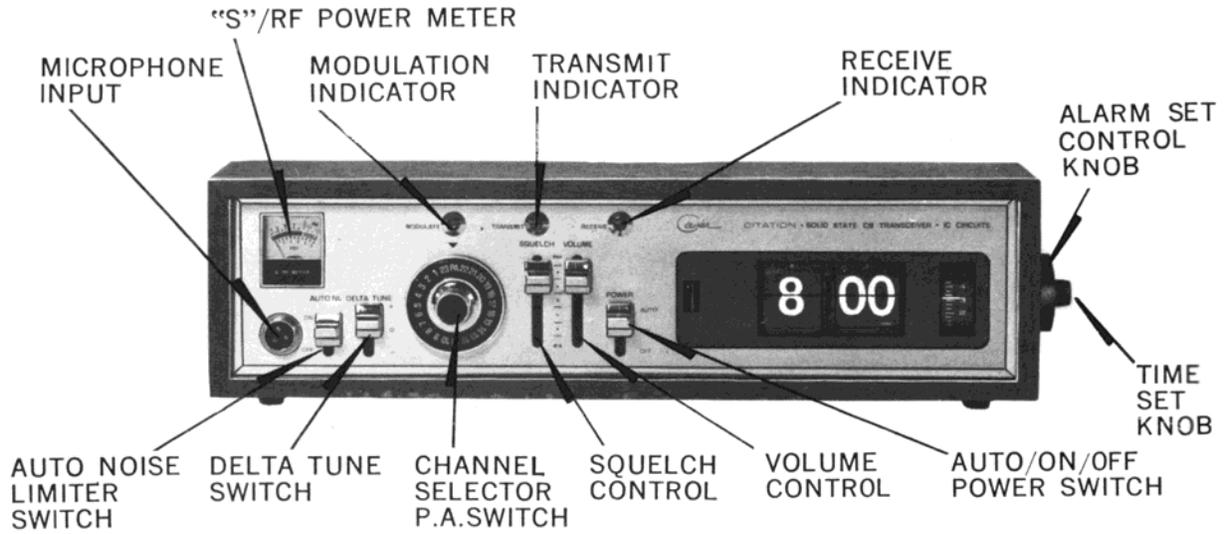
Complete the form and mail with \$ 8.00 to:

Federal Communication Commission  
Gettysburg, Pennsylvania 17325

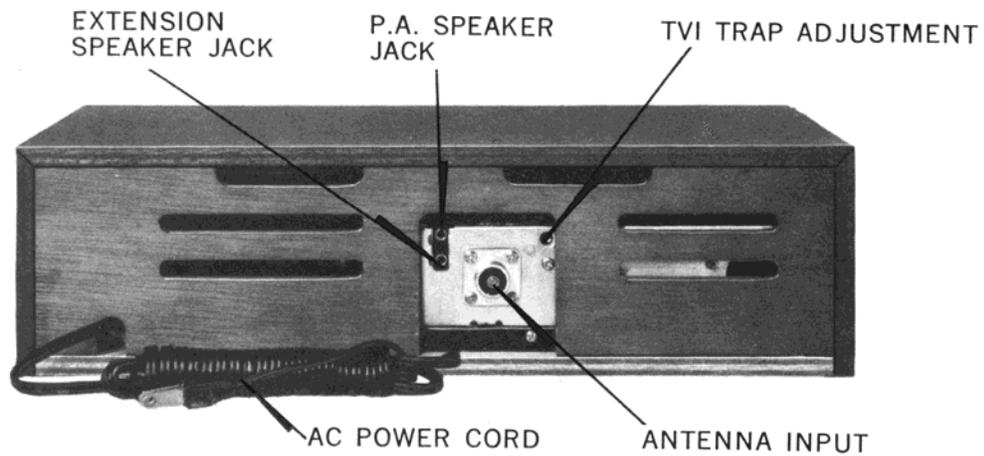
It is also a requirement to read and know Part 95 of the FCC Rules and Regulations that apply to the operation of a Class D Citizens Band unit. Copies of this regulation can be obtained from the Federal Communications Commission, Washington, D.C. 20554, or from any FCC Field Office listed below:

Mobile, Ala. 36602	Boston, Mass. 02109
Anchorage, Alaska 99501	Detroit, Mich. 48226
Los Angeles, Cal. 90014	St. Paul, Minn. 55102
San Diego, Cal. 92101	Kansas City, Mo. 64106
San Francisco, Cal. 94126	Buffalo, N.Y. 10014
San Pedro, Cal. 90731	Portland, Ore. 97205
Denver, Col. 80202	Philadelphia, Pa. 19106
Miami, Fla. 33606	San Juan, P.R. 00903
Tampa, Fla. 33606	Beaumont, Tex. 77704
Atlanta, Ga. 31402	Dallas, Tex. 75202
Savannah, Ga. 31502	Houston, Tex. 77002
Honolulu, Hawaii 96808	Norfolk, Va. 23510
Chicago, Ill. 60604	Seattle, Wash. 98104
New Orleans, La. 70130	New York, N.Y. 10014
Baltimore, Md. 21202	

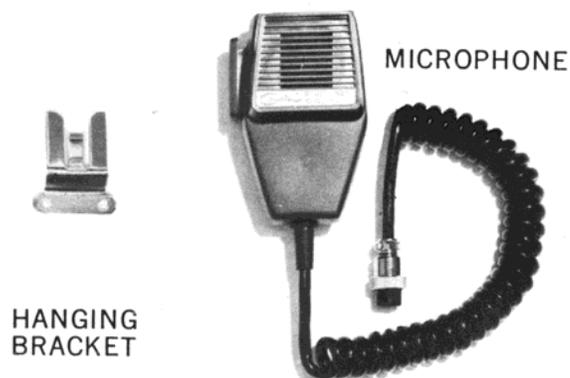
## FRONT VIEW



## BACK VIEW



## ACCESSORIES



# GENERAL DESCRIPTION

Your COURIER "CITATION" Citizens Band Transceiver is a quality piece of electronic equipment skillfully constructed from the finest solid-state electronic components.

It incorporates many unique features which make it a highly selective, sensitive and quiet receiver, as well as a powerful transmitter. The COURIER "CITATION" is equipped with a full set of synthesis crystals so that it will cover all 23 channels of the Class D Citizens Radio Service.

## INSTALLATION

### ELECTRIC CLOCK OPERATION

1. Connect the AC power cord to a convenient 117V AC (60 Hz) outlet.  
Your instrument is now functioning as an illuminated electric clock.
2. Turn the TIME SET knob counter-clockwise to set the clock to the correct time. Since this is a 24-hour mechanism, the proper AM or PM time setting must be chosen.

**YOUR "CITATION" TRANSCEIVER MUST BE POWERED FROM THE AC LINE ONLY.**

**NEVER CONNECT IT TO DC.**

### ANTENNA INSTALLATION

Your COURIER "CITATION" is designed to operate with any base antenna manufactured by any one of several good Citizens Band antenna manufactures. Your choice of the type of antenna to use at your base depends in large measure upon how and where the antenna is to be mounted, what type of directional radiation is desired, and how much money is to be spent. All COURIER dealers carry a large selection of base antennas, and are qualified to assist in selecting those which best suit your particular requirement.

Your COURIER CITATION features an antenna matching circuit which under most conditions requires no peaking if the antenna load is between 35 ohms and 100 ohms.

When a base station antenna is installed, it is necessary to connect the COURIER "CITATION" to the antenna with a 52 ohm coaxial cable. Type RG 58/U is recommended for lengths under 50 feet; and RG 8/U for lengths over 50 feet. In the event you want to check the antenna match, use a Relative Field Strength meter (such as the Courier Port-A-Lab.).

# OPERATING PROCEDURE

Operation of the COURIER "CITATION" is very simple. The unit has seven external controls; VOLUME, SQUELCH, AUTO-ON-OFF POWER SWITCH, AUTO NOISE LIMITER, DELTA TUNE, CHANNEL SELECTOR and DIGITAL CLOCK.

## TO RECEIVE

1. Make certain that the COURIER "CITATION" has the antenna connector plugged into the unit.
2. Slide power switch to the "ON" position. The channel indicator, receive indicator and the "S"/RF power meter lights will go on.
3. Adjust the slide Squelch control to the maximum (MAX) (AWAKE) position.
4. Advance the VOLUME control until you hear a rushing noise, and then adjust this control to a comfortable level.
5. Set the CHANNEL SELECTOR to the desired channel.
6. The SQUELCH control is used to limit the amount of background noise which comes through the receiver. Adjust this control until the COURIER "CITATION" is on the "threshold", which is that point where the background noise is eliminated. A signal will override, the squelch. However, if you have too much squelch action, it will require, a stronger signal to override it.
7. The ANL switch is actuated whenever it is desired to reduce ignition noise or other man - made impulse noise.
8. The "level" or "S" meter provides visible measurement of incoming signal strength.
9. DELTA TUNING

When receiving a station that is not clear due to variation of transmitter operating frequency, change to plus (+) or minus (-) positions with the delta tune knob until the signal clarity is improved.

## YOUR COURIER "CITATION" CAN BE ADJUSTED TO TURN ON AUTOMATICALLY

1. Place the AUTO ON-OFF power switch to in the ON position.
2. Set the CHANNEL SELECTOR to the desired channel and adjust the VOLUME and SQUELCH controls to the proper level.
3. Turn the ALARM SET control knob clockwise to the desired time.
  - \* The transceiver will remain on for about one hour after the selected time, and then turn off. (To continue operation, turn AUTO-ON-OFF to ON position.)
4. Slide AUTO-ON-OFF switch to the AUTO position.
5. The "citation" will now turn ON at the desired time.

## **TO TRANSMIT**

1. Make certain your antenna, power, and microphone connectors are secure.
2. Wait until the desired channel is clear.
3. When the channel is clear, depress the microphone switch and talk into the microphone. The microphone should be about two inches from your mouth and should be held at a 45 degree angle. Do not shout into the microphone. The COURIER "CITATION" uses a sensitive dynamic microphone with a noise canceller. As you talk, background noises are built-in absorbed and are not transmitted.
4. As you depress the microphone, you will note that the red modulation indicator, and transmit indicator lights up and the RF meter will indicate relative indicator output power.

As you talk, the brilliance of the modulation light will increase as your talk power increases.

## **PUBLIC ADDRESS FACILITY AND EXTERNAL SPEAKER**

You will note that on the rear of the COURIER "CITATION" chassis there are two jacks (P.A. and EXT. SPEAKER jack).

To use the external speaker facility plug an 8 ohm speaker line, which terminates in a Herman H. Smith, Inc. Miniature Phone Plug, Pt. No. 480 or equivalent, into the external speaker position. When the external speaker is plugged in, it will automatically cut out the internal speaker and all incoming signals will be heard on the external speaker.

To use the Public Address facility, prepare an 8-ohm horn or speaker which terminates in a Herman H. Smith, Inc. Miniature Phone Plug, Pt. No. 480 or equivalent. To operate the P.A. speaker, plug it into the "P.A." jack on the rear of the unit. Turn the unit "ON". Turn the selector switch to the P.A. position. (Between channels 22 and 23). When you talk into the microphone, your voice will be reproduced over the Public Address speaker.

You can adjust the volume of the external speaker with the volume control on the front of the unit.

## T.V.I. SUPPRESSION

The "CITATION" design includes an adjustable trap to attenuate interference to television receivers. This trap is factory adjusted and normally requires no further adjustment. In case of severe interference however, the trap can be adjusted while observing a television receiver, for minimum interference.

## CRYSTAL SYNTHESIS

Your COURIER "CITATION" comes equipped with crystals for all 23 transmit and receiver frequencies of the Citizens Radio Service.

Crystal selection is determined by the "synthesis" technique; that is 14 crystal frequencies are selectively mixed to provide 46 crystal fixed transmit and receive frequencies.

These crystals plug into the printed circuit board. Listed below, you will find which crystals affect each of the specific channel frequencies. You will also find a diagram locating each of these crystals as they are placed on the printed circuit board.

To determine which channels are affected by which crystals locate your transmit or receive channel. The crystal frequency at the top of that column, and the crystal frequency at the left of that column are the two crystals which determine that channel. For example, channel 6 transmit is determined by the 10.625 and the 37.650 crystals.

### TRANSMIT

	37.600	37.650	37.700	37.750	37.800	37.850
10.635	1	5	9	13	17	21
10.625	2	6	10	14	18	22
10.615	3	7	11	15	19	—
10.595	4	8	12	16	20	23

### RECEIVE

	37.600	37.650	37.700	37.750	37.800	37.850
10.180	1	5	9	13	17	21
10.170	2	6	10	14	18	22
10.160	3	7	11	15	19	—
10.140	4	8	12	16	20	23

# STANDARD WARRANTY

Courier Communications, Inc. warrants the equipment herein described to be free from defective material and workmanship; and agrees to remedy any such defect by repair or replacement, at the company's option, which in the company's judgement was a defect in material or workmanship at the time of manufacture, provided that the owner warranty registration card is returned to the company within 10 days after purchase, and provided that the equipment is returned to the company or our authorized dealer for examination, with all transportation charges prepaid.

This warranty shall be invalid in the event of (A) unauthorized repair or alteration: (B) misuse, neglect or accident: (C) connection, installation or operation in a manner at variance with the instruction manual: (D) alteration, disfigurement or removal of the serial number: or, (E) resale of the equipment to a new owner.

The period of ninety (90) days from the date of original purchase there will be no charge for warranty repair or replacement.

Thereafter, warranty repair or replacement will be made only if the equipment is accompanied by a money order in the amount of \$ 10.00 for repair or replacement of the equipment plus \$ 3.50 for return freight, insurance and handling.

All obligations of the company under the warranty shall cease with regard to the microphone and crystals after the initial 90 days warranty period, and shall cease with regard to the remainder of the equipment after a period of one (1) year from date of purchase.

Courier Communications, Inc. reserve the right to make any change in design, or to make addition to, or improvement in its products without assuming any obligation to install them in its equipment previously manufactured.

This warranty is in lieu of all other warranties expressed or implied, and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

No shipments are to be made to the factory unless authorized in writing.

## **COURIER COMMUNICATIONS, INC.**

100 Hoffman Place, Hillside,  
New Jersey 07205

## REPLACEMENT PARTS LIST

<u>Symbol No.</u>	<u>Description</u>	<u>Part No.</u>
<b>SEMI CONDUCTORS</b>		
Q1	2SC930 Transistor	2SC930
Q2	2SC929 "	2SC929
Q3, 4, 5, 8, 9, 12	2SC772 "	2SC772
Q10, 11	2SC537 "	2SC537
Q13	2SC715 "	2SC715
Q14	2SC815 "	2SC815
Q15	2SC781 "	2SC781
Q16	2SC799 "	2SC799
Q17	2SB187 "	2SB187
Q18	2SB407 "	2SB407
Q19	2SB186 "	2SB186
Q6, 7	2SD223 "	2SD223
IC	LD-3001 Integrated Circuit	LD-3001
D4, 8	RD-7A (1S332) Diode	RD-7A
D11	RD-35A "	RD-35A
D1, 2, 6	1S953 "	1S953
D3, 5, 9, 10, 14, 15, 16	1S188 "	1S188
D13	RD-7A (1S332) "	RD-7A
D12	1S1849 "	1S1849
D7	SH-1 "	SH-1
TH1	SDT-500 Thermistor	SDT-500
C.F.	Ceramic filter	R-S1398

### CRYSTALS

X1	HC-25U 37.600 MHz	R-H05401
X2	" 37.650 MHz	R-H05402
X3	" 37.700 MHz	R-H05403
X4	" 37.750 MHz	R-H05404
X5	" 37.800 MHz	R-H05405
X6	" 37.850 MHz	R-H05406
X7	" 10.140 MHz	R-H05407
X8	" 10.160 MHz	R-H05408
X9	" 10.170 MHz	R-H05409
X10	" 10.180 MHz	R-H05410
X11	" 10.595 MHz	R-H05411
X12	" 10.615 MHz	R-H05412
X13	" 10.625 MHz	R-H05413
X14	" 10.635 MHz	R-H05414

Symbol No.	Description				Part No.
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**RESISTORS**

R705, 706	1 ohm	$\pm 5\%$	$\frac{1}{2}W$	R-R010J
R702	10 ohm	"	$\frac{1}{4}W$	R-R100J
R707	56 ohm	"	"	R-R560J
R704	1 Kohm	"	"	R-R102J
R915, 919	100 ohm	$\pm 10\%$	"	R-R101K
R918	68 ohm	"	"	R-R680K
R907, 908, 312	330 ohm	"	"	R-R331K
R903	390 ohm	"	"	R-R391K
R101, 507, 508, 725, 726, 727	470 ohm	"	"	R-R471K
R911, 904	560 ohm	"	"	R-R561K
R703	680 ohm	"	"	R-R681K
R708, 711, 305, 913, 710, 102, 103, 104, 105, 301, 920	1 Kohm	"	"	R-R102K
R304, 307, 515	1.5 Kohm	"	"	R-R152K
R517	1.8 Kohm	"	"	R-R182K
R912	2.2 Kohm	"	"	R-R222K
R308, 514, 714	2.7 Kohm	"	"	R-R272K
R506, 916, 513	3.3 Kohm	"	"	R-R332K
R309, 512	3.9 Kohm	"	"	R-R392K
R712, 713, 905, 909,	4.7 Kohm	"	"	R-R472K
R910	5.6 Kohm	"	"	R-R562K
R302, 914	6.8 Kohm	"	"	R-R682K
R510,	8.2 Kohm	"	"	R-R822K
R906,	10 Kohm	"	"	R-R103K
R509, 917	12 Kohm	"	"	R-R123K
R303	18 Kohm	"	"	R-R183K
R922	47 Kohm	"	"	R-R473K
R503	68 Kohm	"	"	R-R683K
R311	100 Kohm	"	"	R-R104K
R502	180 Kohm	"	"	R-R184K
R310	220 Kohm	"	"	R-R224K
R501, 505	330 Kohm	"	"	R-R334K
R504	470 Kohm	"	"	R-R474K
R921	33 ohm	"	"	R-R330K
R924	6.8 ohm	"	"	R-R680K
R922	270 Kohm	"	"	R-R274K
R902	150 Kohm	"	"	R-R154K

<u>Symbol No.</u>	<u>Description</u>	<u>Part No.</u>
<b>CAPACITORS</b>		
C921, 943	8 pF $\pm 0.5$ pF	Ceramic R-CKD080D
C302	10 pF "	" R-CKD100D
C904	12 pF $\pm 10\%$	" R-CKD120K
C508	20 pF "	" R-CKD200K
C105, 914, 916, 918, 920	25 pF "	" R-CKD250K
C946, 109	30 pF $\pm 5\%$	" R-CKD300D
C101, 931	30 pF $\pm 10\%$	" R-CKD300K
C911	40 pF "	" R-CKD400K
C107, 311, 901, 903, 907, 912, 926, 950	50 pF "	" R-CKD500K
C909	80 pF "	" R-CKD800K
C923, 937, C933,	100 pF "	" R-CKD101K
C110, 940, 941, 947, 948	220 pF "	" R-CKD221K
C902	270 pF "	" R-CKD271K
C928	0.002 $\mu$ F $\pm 20\%$	" R-CKD202M
C102, 103, 104, 106, 108, 301, 303, 316, 936, 944, 906, 910, 915, 917, 919, 922, 925, 927, 929, 932, 935, 506, 507	0.01 $\mu$ F $+80\% - 22\%$	" R <sup>c</sup> CKD103Z
C304, 305, 308, 309, 312, 314, 719, 720	0.04 $\mu$ F "	" R-CKD403Z
C942	0.05 $\mu$ F "	" R-CKD503Z
C306, 923	500 pF $\pm 10\%$	" R-CKD501Z
C905	0.002 $\mu$ F $\pm 20\%$	Mylar R-CQS202M
C502, 703, 704, 708	0.0047 $\mu$ F "	" R-CQS471M
C315	0.0075 $\mu$ F "	" R-CQS751M
C501, 714, 950	0.01 $\mu$ F "	" R <sup>c</sup> CQS103M
C709	0.04 $\mu$ F "	" R-CQS403M
C713	0.05 $\mu$ F "	" R-CQS503M
C908, C913	1000 pF $\pm 10\%$	Styrol R-CQT102M
C723	0.02 $\mu$ F $\pm 10\%$	Mylar R-CQS203M
C724	0.001 $\mu$ F $\pm 20\%$	" R-CQS102M
C711	0.2 $\mu$ F "	MP R-CQT204Q
C701	0.2 $\mu$ F 10V	Electrolytic R-C9120
C721	1 $\mu$ F 50V	" R-C9235
C313	2 $\mu$ F 10V	" R-C9174

<u>Symbol No.</u>	<u>Description</u>		<u>Part No.</u>
<b>CAPACITORS</b>			
C702, 707, 722	4.7 $\mu$ F	6.3V	Electrolytic R-C9882
C307, 310, 706, 505	33 $\mu$ F	6.3V	" R-C9811
C717	33 $\mu$ F	16V	" R-C9584
C503	100 $\mu$ F	10V	" R-C9200
C710	330 $\mu$ F	16V	" R-C9861
C712	470 $\mu$ F	16V	" R-C9874
C718	2000 $\mu$ F	20V	" R-C9827
C705, 504	10 $\mu$ F	10V	" R-C9244

<u>Symbol No.</u>	<u>Description</u>	<u>Part No.</u>
<b>COILS AND TRANSFORMER</b>		
L1	antenna coil	R-W2376-1
L2	antenna coil	R-W2403-1
L3	oscillator coil, transmitting	R-W8311-4
L4	RF choke coil	R-W1080
L5	oscillator coil, receiving	R-W8312-4
L6	RF choke coil	R-W1070
L7	RF choke coil	R-W1081-4
L8, L9	RF coil	R-W4055-1
L10	RF coil	R-W4063-4
L11	RF driving coil, transmitting	R-W4056
L12	RF choke coil	R-W4070-3
L13	RF choke coil	R-W1569-3
L14	final tank coil	R-W9078-1
L15	$\pi$ coil	R-W9079-1
L16	RF coil	4-262R111
L17	RF coil	4-253R13230
T1	IF transformer	R-W5T349
T2	IF transformer	R-W5T308
T3	IF transformer	R-W5T366
T4	IF transformer	R-W5T367
T5	IF transformer	R-W5T352-1
T6	input transformer	R-W6375
T7	output transformer	4-254R532
T9	choke transformer	R-W6384

Symbol No.

Description

Part No.

*MISCELLANEOUS*

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R516	squelch control 10KB	R-R2003
R701	volume control 10KD	R-R2004
R511	miniature trimmer control, sq, adjusting 10KB	R-R11013
R306	miniature trimmer control, current adjusting 50KB	R-R11010
R519	miniature trimmer control, S meter adjusting 5KB	R-R11012
R709	miniature trimmer control, voltage adjusting 500B	R-R116552
R518	miniature trimmer control, S meter adjusting 10KB	R-R11023
R715	miniature trimmer control, over mod adjusting 20KB	R-R11016
R521	miniature trimmer control, RF power meter adjusting 100KB	R-R11011
SP	speaker 8 ohm	R-R6496
C945	trimmer capacitor 70 pF	R-C0068
C946	trimmer capacitor 200 pF	R-C0506
S3	automatic noise limiter switch	R-S4471
S2	delta tuning switch	R-S4472
S1	channel selector switch	R-S4473
	S/RF meter	4-511R104-A
	power switch,	4-231R134
	relay	R-S4485
	socket	R-S2181
	socket, EXT. SP and P.A.	R-S2081a
	antenna input jack	R-S2525
	plug, microphone	R-S2202
	socket, microphone input	R-S2516
	microphone	R-S6493a
	fuse holder, AC	R-S1038
	fuse, 0.7A AC	R-S1041a
	pilot lamp, 6V 21 mA transmit indicator	R-S1393
	pilot lamp, 6V 21 mA indicators (5 used)	R-S1393(1)
	heat sink. Q15	R-27142
	neon lamp, with/resistor	4-61R111A
	digital clock, 117V 60Hz	4-952R108
	Wood cabinet, top section	123-0-111R116
	Wood cabinet, bottom section	123-2-126R207

