



DESCRIPTION

The uniboard contains portions of the station receiver and transmitter circuits, as shown in Figure 1. These portions are:

- Receive Synthesizer Circuitry
- Receiver I-F Amplifier and Detector

- Transmit Synthesizer Circuitry
- p/o Power Control Circuitry

All of these circuits are described in detail along with appropriate schematics in their related sections of the manual. The uniboard circuit board detail, photo illustrations, (see Figures 2 and 3) and parts list information are included in this section.

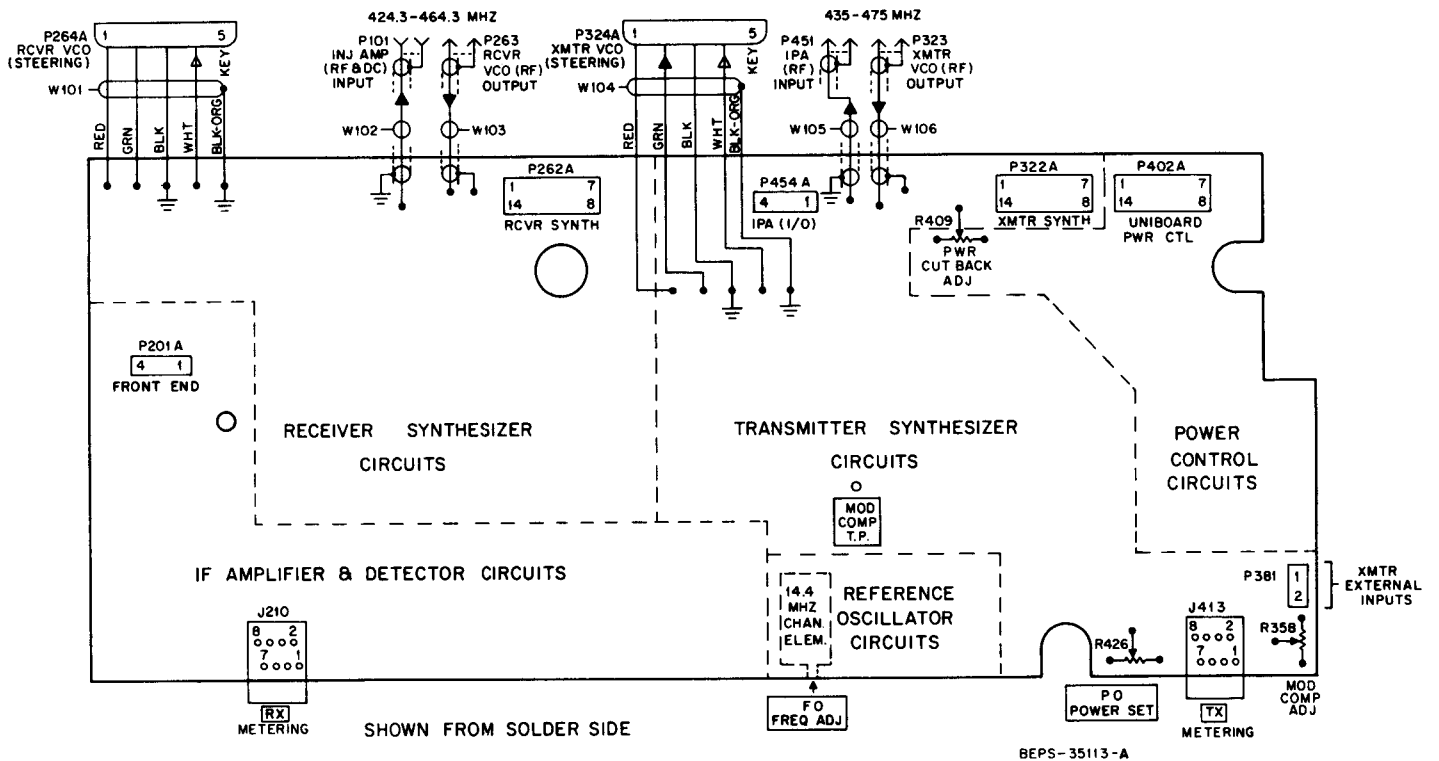


Figure 1. Uniboard Circuit Location and Interconnect Detail

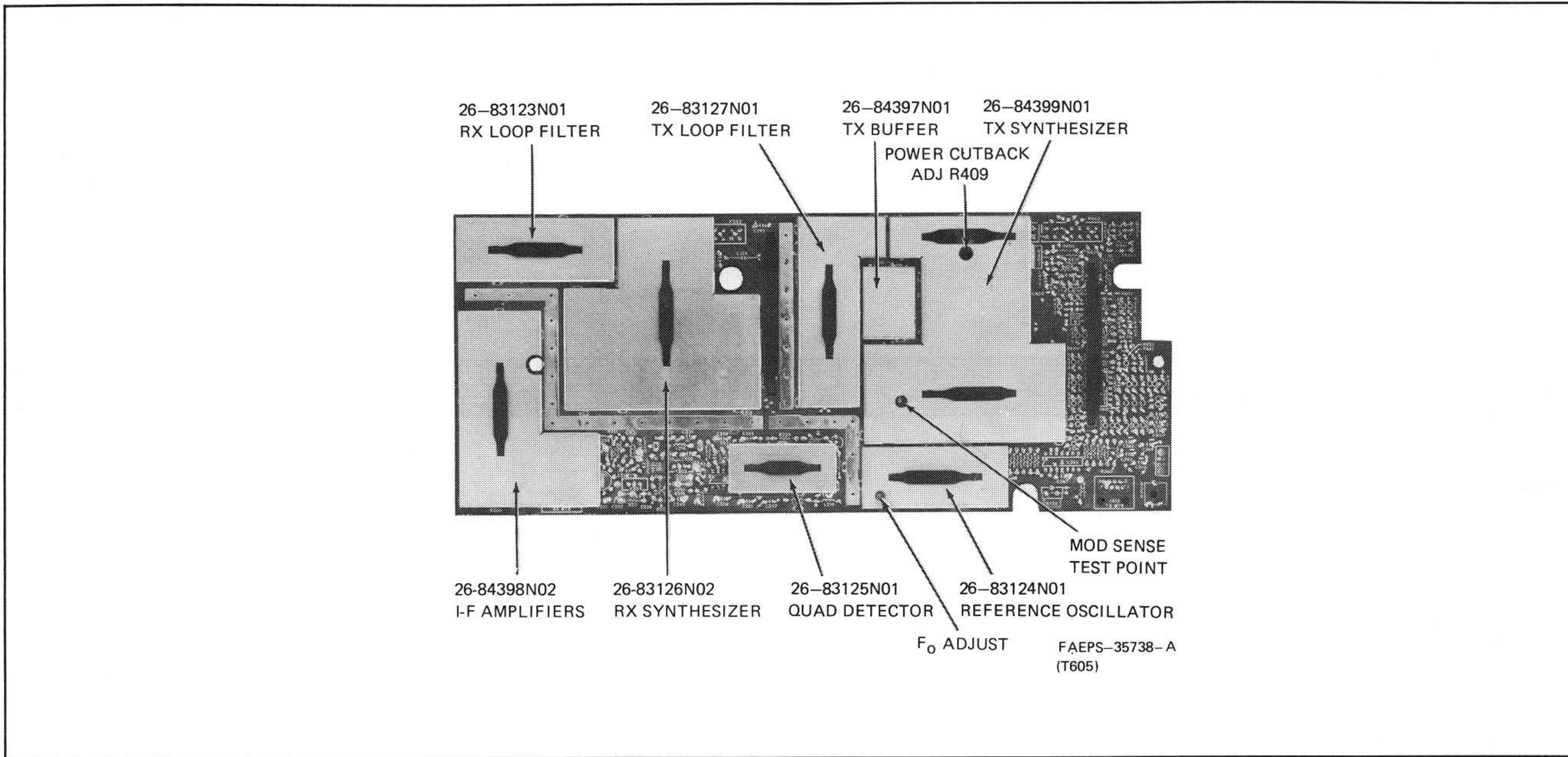


Figure 2. Solder Side Uniboard Shield Detail

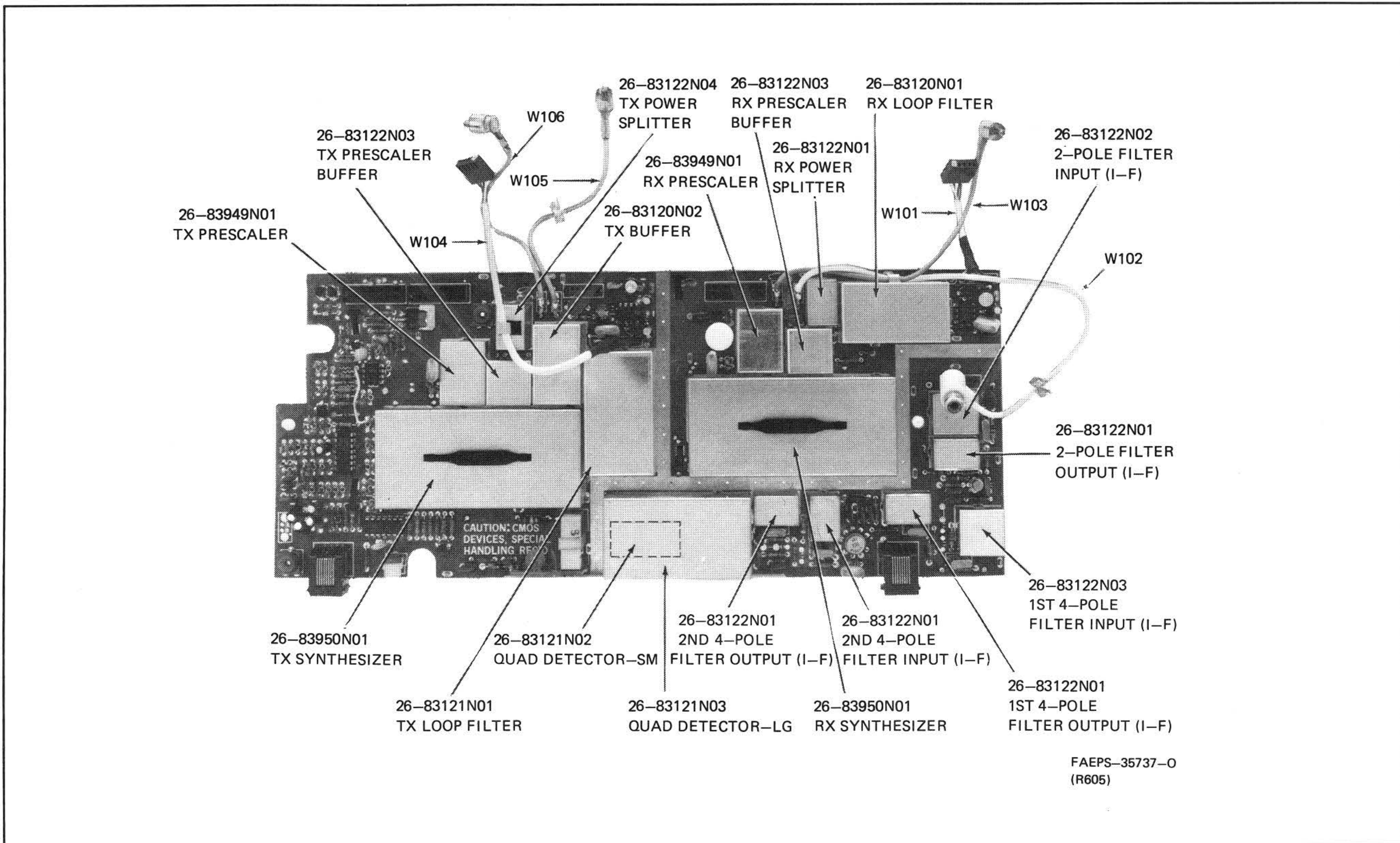
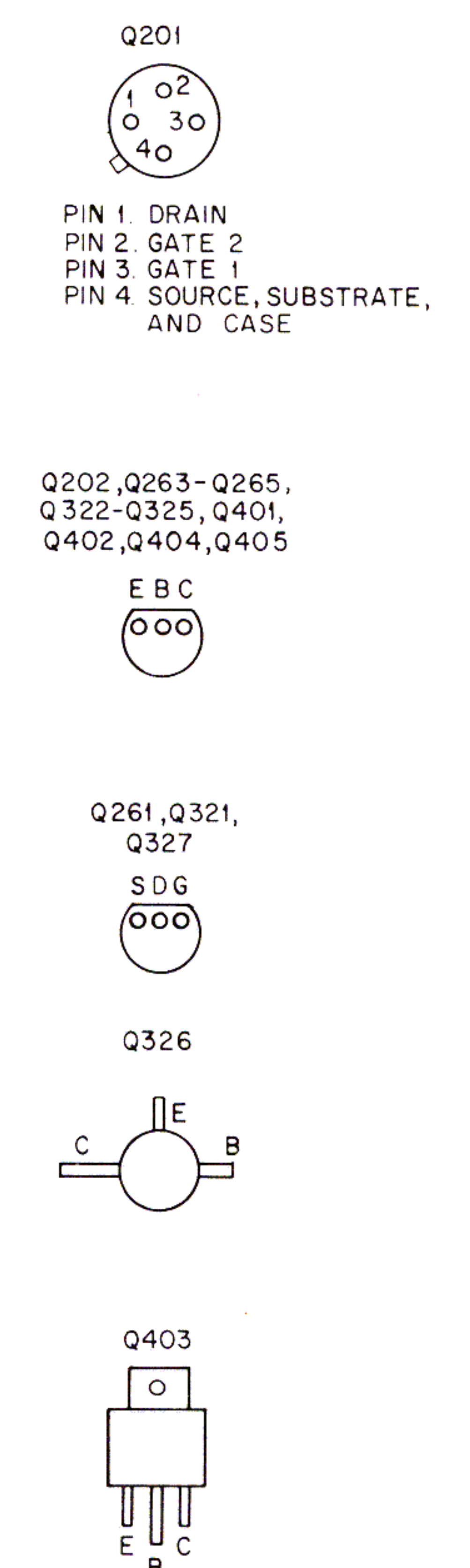
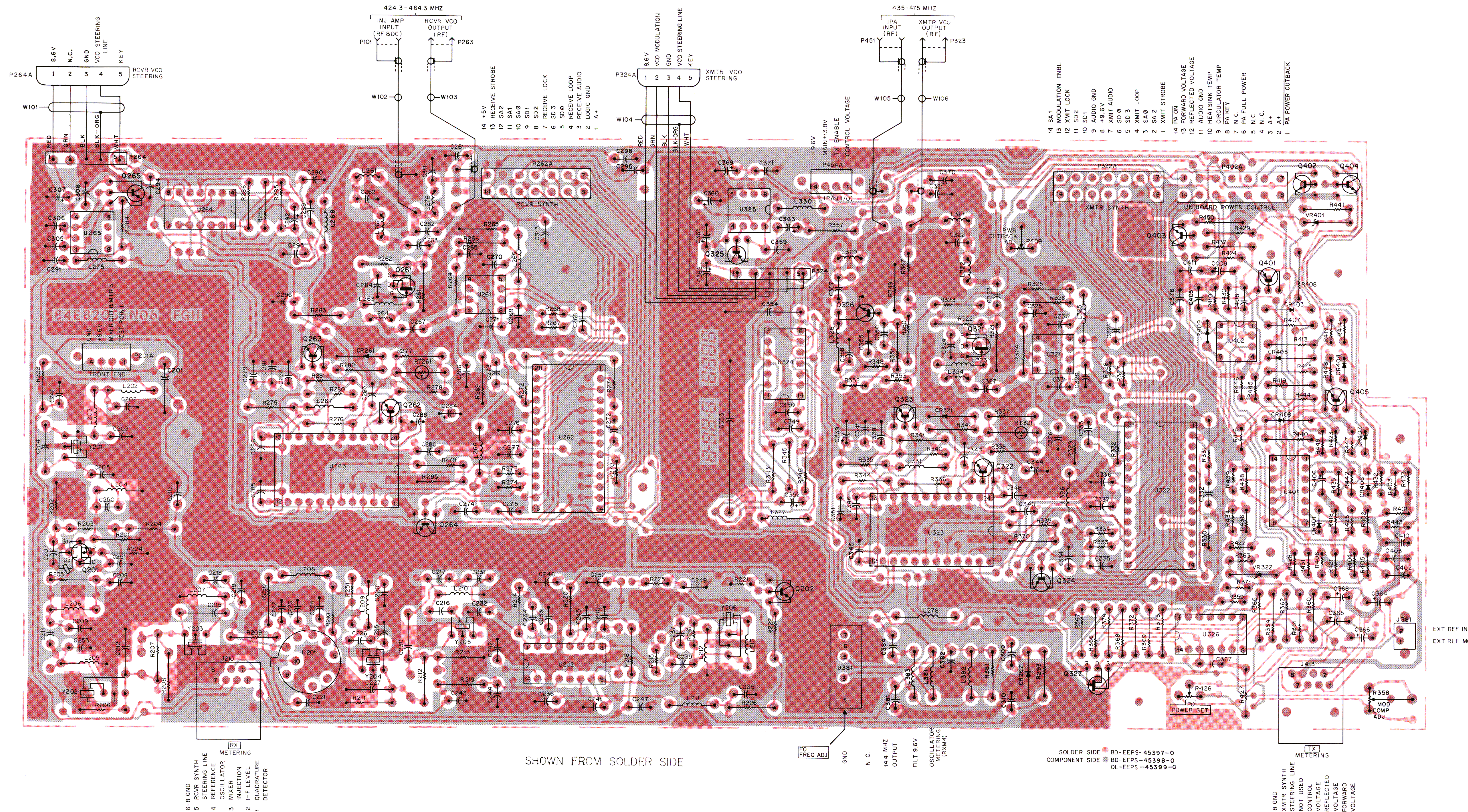


Figure 3. Component Side Uniboard Shield Detail

UNIBOARD MODEL TRN9880A COMPONENT SIDE DETAIL



- 6-8 GND
- 5 RCVR SYNTH STEERING LINE
- 4 REFERENCE OSCILLATOR
- 3 MIXER INJECTION
- 2 I-F LEVEL QUADRATURE DETECTOR
- 1 METERING

SHOWN FROM SOLDER SIDE

- FO FREQ ADJ
- GND
- N.C.
- 14.4 MHZ OUTPUT
- FILT 9.6V
- OSCILLATOR METERING (RAN-4)

- SOLDER SIDE ● BD-EEPS-45397-0
- COMPONENT SIDE ● BD-EEPS-45398-0
- OL-EEPS-45399-0

- 6-8 GND
- 5 XMTR SYNTH STEERING LINE
- 4 NOT USED
- 3 CONTROL VOLTAGE
- 2 REFLECTED VOLTAGE
- 1 FORWARD VOLTAGE

UNIBOARD PARTS LIST

parts list

TRN9880A Uniboard

PL-10850-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		capacitor, fixed: uF \pm 5% 100V unless otherwise stated
C201	2384538G08	47 \pm 20% 20V
C202	2111014H50	110pF
C203	2111014H27	12pF
C204	2182450B62	0.2pF 500V
C205	2111014H20	6.2pF \pm 0.5pF
C207,208	0811051A07	.01 63V
C209	2111014H25	10pF \pm 0.5pF
C210	0811051A07	.01 63V
C211	2111014H27	12pF
C212	2182450B44	0.82pF 500V
C215	2182450B07	0.39pF 500V
C216	2111014H13	3.3pF \pm 0.25pF
C217	2111014H32	20pF
C218	2111014H30	16pF
C219	2111014H28	13pF
C220	0811051A07	.01 63V
C221	0811051A13	0.1 63V
C222 thru 224	0811051A07	.01 63V
C225	2111014H33	22pF
C226	2111014H29	15pF
C227	2182450B61	1.0pF 500V
C230	2182450B29	0.51pF 500V
C231	2111014H38	36pF
C232	2111014H42	51pF
C233 thru 235	0811051A07	.01 63V
C236	0811051A13	0.1 63V
C237	2111014H22	7.5pF \pm 0.5pF
C239	2111014H20	6.2pF \pm 0.5pF
C240 thru 244	0811051A07	.01 63V
C245,246	2111015B05	220pF \pm 10%
C247,248	0811051A07	.01 63V
C249	2311054H08	10 \pm 10% 25V
C250 thru 252	0811051A07	.01 63V
C253	2111014H05	1.5pF 0.25pF
C261	2111014H32	20pF
C262	2111014H08	2pF \pm 0.25pF
C263 thru 265	2111014H32	20pF
C266	0811051A13	0.1 63V
C267	2111014H32	20pF
C268	0811051A13	0.1 63V
C269,270	2111014H32	20pF
C271	2111015B05	220pF \pm 10%
C272	0811051A03	.0022 63V
C273,274	2111015B05	220pF \pm 10%
C275,276	0811051A13	0.1 63V
C277	2111015B05	220pF \pm 10%
C278	0811051A07	.01 63V
C279	2311019A40	47 \pm 20% 25V
C280	2111014H49	100pF
C281,282	2111014H32	20pF
C283	0811051A06	.0088 63V
C284	2311019A40	47 \pm 20% 25V
C285	0811051A01	.001 63V
C286	0811051A05	.0047 63V
C288	0811051A01	.001 63V
C289	0811051A07	.01 63V
C290	2111014H32	20pF
C291	0811051A07	.01 63V
C292	2311013F03	0.15 \pm 10% 35V
C293	0811051A18	0.68 63V
C294	0811051A11	.047 63V
C295	0811051A07	.01 63V
C296	2111014H32	20pF
C298	2111014H32	20pF
C305	0811051A13	0.1 63V
C306	2311019A20	10 \pm 20% 25V
C307	2311054L14	4.7 \pm 10% 50V
C308	2311019A49	150 \pm 20% 16V
C309	2111014H32	20pF
C310	0811051A07	.01 63V
C311	2111014H32	20pF
C313	2111014H32	20pF
C321	2111014H32	20pF
C322	2111014H08	2pF \pm 0.25pF
C323 thru 325	2111014H32	20pF
C326	0811051A13	0.1 63V
C327	2111014H32	20pF
C328	0811051A13	0.1 63V
C329,330	2111014H32	20pF
C331	2111015B05	220pF \pm 10%
C332	0811051A03	.0022 63V
C333,334	2111015B05	220pF \pm 10%
C335,336	0811051A13	0.1 63V
C337	2111015B05	220pF \pm 10%
C338	0811051A07	.01 63V
C339	2311019A40	47 \pm 20% 25V
C340	2111014H49	100pF
C341	2111014H32	20pF
C343	0811051A06	.0088 63V
C344	2311019A40	47 \pm 20% 25V
C345	0811051A01	.001 63V
C346	0811051A05	.0047 63V
C348	2183162H07	.002 \pm 10% 50V
C349	0811051A07	.01 63V
C350	2111014H32	20pF
C351	0811051A07	.01 63V

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C352	2311054L02	0.47 ± 10% 50V
C353	0883862M02	2 ± 10%
C354	0811051A09	.022 63V
C355 thru 358	2111014H32	20pF
C359	0811051A13	0.1 63V
C360	2311019A20	10 ± 20% 25V
C361	2311054L14	4.7 ± 10% 50V
C362,363	2311019A40	47 ± 20% 25V
C364	2311019A20	10 ± 20% 25V
C365,366	2311054H08	10 ± 10% 25V
C367	0811051A07	.01 63V
C368	2311019A20	10 ± 20% 25V
C369	2311019A46	100 ± 20% 25V
C370,371	2111014H32	20pF
C372	0811051A07	.01 63V
C376	0811051A16	0.33 63V
C381,382	0811051A07	.01 63V
C384	2111014H25	10pF ± 0.5%
C402,403	2111014H38	36pF
C405	0811051A07	.01 63V
C406	2311054K06	1.0 ± 20% 50V
C408	0811051A03	.0022 63V
C409	2311054L04	0.68 ± 10% 50V
C410	2111014H38	36 100V
C411	0811051A11	.047 63V
CR261	4883329G02	diode: (see note)
CR262	4882139G01	silicon
CR321	4883329G02	germanium
CR401	4883654H01	silicon
CR403 thru 409	4883654H01	silicon
J210	0983112N02	connector:
J413	0983112N02	female: 8-contact
L202	2411047B31	coil:
L203	2411047C53	1.8uH
L204	2482549D24	15uH
L205 thru 207	2411047C53	15uH
L208	2482723H35	23uH
L209,210	2411047C53	15uH
L211	2482723H35	23uH
L212	2411047B58	24uH
L213	2482549D24	15uH
L261	2411030A06	7 turns
L262	2411030A02	3 turns
L263	2482723H28	0.29uH
L264	2411030C05	rf choke: green
L265 thru 268	2482723H33	14uH
L275	2482723H33	14uH
L276	2411030A06	7 turns
L278	2482835G32	0.6uH
L321	2411030A06	7 turns
L322	2411030A02	3 turns
L323	2482723H28	0.29uH
L324	2411030C05	rf choke: green
L325 thru 327	2482723H33	14uH
L328	2482723H28	0.29uH
L329	2411030A02	3 turns
L330,331	2482723H33	14uH
L361 thru 363	2482723H33	14uH
P101	3084158N01	connector:
P101A	2980014A01	coax cable: w/receptacle
P201A	0983109N02	coax clip terminal
P262A	0983110N01	female: 4-contact
P263A	2980014A01	female: 14-contact
P264A	2883441F05	coax clip terminal
P322A	0983110N01	male: 5-contact
P323A	2980014A01	female: 14-contact
P324A	2883441F05	coax clip terminal
P402A	0983110N01	male: 5-contact
P451A	2980014A01	female: 14-contact
P454A	0983109N02	coax clip terminal
Q201	4800869687	transistor: (see note)
Q201	4883865T01	field-effect type M9687
Q202	4800869643	field-effect type M85T01
Q261	4800869639	PNP type M9643
Q262,263	4800869643	field-effect type M9639
Q264	4800869642	PNP type M9643
Q265	4800869681	NPN type M9642
Q321	4800869639	PNP type M9681
Q322,323	4800869643	field-effect type M9639
Q324	4800869642	PNP type M9643
Q325	4800869681	NPN type M9642
Q326	4884411L83	PNP type M9681
Q327	4800869725	PNP type M11L83
Q401	4800869643	field-effect type M9725
Q402	4800869642	PNP type M9643
Q403	4800869640	NPN type M9642
Q404,405	4800869642	PNP type M9640

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R201	0611009A63	resistor, fixed: ± 5% 1/4W
R202,203	0611009A73	unless otherwise stated
R204	0611009A17	3.9k
R205	0611009A41	10k
R206	0611009A91	47
R207	0611009A41	470
R208	0611009A87	56k
R209	0611009A41	470
R210	0611009A29	39k
R211	0611009A91	470
R212	0611009A41	470
R213	0611009A87	39k
R214	0611009A45	680
R215	0611009E49	1k
R216	0611009E85	4.7k
R218	0611009B04	180k
R219	0611009A99	120k
R220	0611009A49	1k
R221	0611009E79	18k
R222	0611009A47	820
R223	0611009A99	120k
R224	0611009A25	100
R225	0611009E89	47k
R226	0611009A33	220
R250	0611009A17	47
R251	0611009A33	220
R261	0611009A25	100
R262	0611009A17	47
R263	0611009A25	100
R264	0611009A19	56
R265	0611009A73	10k
R266	0611009A49	1k
R267,268	0611009E85	4.7k
R269	0611009A41	470
R270	0611009E85	4.7k
R271	0611009A41	470
R272	0611009A49	1k
R273	0611009E87	5.6k
R274	0611009A65	4.7k
R275	0611009A01	10
R276	0611009A29	150
R277	0611009A39	390
R278	0611009A33	220
R279	0611009A89	47k
R280	0611009A01	10
R281	0611009A56	2k
R282	0611009A59	2.7k
R283	0611009A82	62k
R284	0611009B05	200k
R285	0611009A71	8.2k
R286	0611009A61	3.3k
R283	0611009A81	22k
R295	0611009A99	120k
R321	0611009A25	100
R322	0611009A17	47
R323	0611009A25	100
R324	0611009A19	56
R325	0611009A73	10k
R326	0611009A49	1k
R327,328	0611009E85	4.7k
R329	0611009A41	470
R330	0611009E85	4.7k
R331	0611009A41	470
R332	0611009A49	1k
R333	0611009E87	5.6k
R334	0611009E85	4.7k
R335	0611009A01	10
R336	0611009A29	150
R337	0611009A39	390
R338	0611009A33	220
R339	0611009A89	47k
R340	0611009A01	10
R341	0611009A56	2k
R342	0611009A59	2.7k
R343	0611009B18	680k
R344	0611009B05	200k
R345	0611009A77	15k
R346	0611009A61	3.3k
R347	0611009A11	27
R348	0611009E58	2k
R349	0611009A14	36
R350	0611009A11	27
R351	0611009A87	5.6k
R352	0611009E58	2.4k
R353	0611009E35	270
R357	0611009A73	10k
R358	1884248R09	var 10k ± 20% 1/2W
R359	0611009E41	470
R360	0611009A99	120k
R361	0611009A92	62k
R362	0611009A99	120k
R363	0611009E32	200
R364	0611009A33	220
R365	0611009A49	1k
R366	0611009A73	10k
R367	0611009A81	22k

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R368	0611009A73	10k
R369	0611009A71	8.2k
R370	0611009A99	120k
R371	0611009E85	4.7k
R372	0611009A73	10k
R373	0611009A80	20k
R374	0611009A99	120k
R381	0611009A25	100
R401	0611009E81	22k
R402	0611009E49	1k
R403	0611009E09	22
R404	0611009E97	100k
R405	0611009E99	120k
R406	0611009E49	1k
R407	0611009A81	3.3k
R408	0611009A64	4.3k
R409	1884248R09	var 10k ±20% 1/2W
R410	0611009E73	10k
R413	0611009A29	150
R414	0611009E49	1k
R415	0611009A81	22k
R416	0611009E73	10k
R417	0611009E85	4.7k
R418	0611009E97	100k
R419	0611009A42	510
R421	0611009E86	5.1k
R422	0611009E97	100k
R423	0611009E85	4.7k
R424	0611009A73	10k
R425	0611009E89	6.8k
R426	1884248R26	var 10k ±20% 1/2W
R427	0611009A49	1k
R428	0611009E85	4.7k
R429	0611009A57	2.2k
R430	0611009E97	100k
R431	0611009E81	22k
R432	0611009E83	88k
R433,434	0611009E73	10k
R435	0611009E81	22k
R436	0611009E86	5.1k
R437	0611009A57	2.2k
R438,439	0611009F18	680k
R440	0611009A85	4.7k
R441	0611009A73	10k
R442	0611009E89	6.8k
R443	0611009F18	680k
R444	0611009B06	220k
R445,446	0611009E85	4.7k
R447,448	0611009E73	10k
R449	0611009F06	220k
R450	0611009A01	10
thermistor:		
RT261	0600858402	1k @ 25C
RT321	0600858402	1k @ 25C
integrated circuit: (see note)		
U201	5183222M13	3-stage differential amplifier
U202	5184320A78	i-f/quad phase detector amplifier
U281	5180235C10	3/4 two modulus prescaler
U282	5184788F83	synthesizer
U283	5183977M36	S & H phase detector
U284	5184887K84	quad bilateral switch
U285	5184788F85	low noise super-low-pass filter
U321	5180235C10	3/4 two modulus prescaler
U322	5184788F83	synthesizer
U323	5183977M36	S & H phase detector
U324	5184887K84	quad bilateral switch
U325	5184788F85	low noise super-low-pass filter
U326	5184821K32	quad operational amplifier
U381	5180291B02	oscillator: KXN1096A
U401	5184821K74	comparator
U402	5184821K89	dual operational amplifier
voltage regulator: (see note)		
VR322	4882256C03	Zener: 4.7V
VR401	4882256C15	Zener: 5.1V
cable assembly:		
W101	0180711E54	receiver vco steering: includes;
	1583498F05	shell housing
	1584301K03	5-contact housing
	2884302K01	key plug
	2983499F01	terminal: 5 used
	3084204N01	3.5" 4-conductor cable
	3982717M01	female contact: 4 used
W102	0180751D84	injection amplifier input: includes;
	3084158N01	coax cable (includes P101)
	4284011N01	coax clip
W103	0180751D87	receiver vco output: includes;
	2882365D02	P263 male coax connector
	3000859004	7.25" coax cable
W104	0180711E53	transmitter vco steering: includes;
	1583498F05	shell housing
	1584301K03	5-contact housing
	2884302K01	key plug
	2983499F01	terminal: 5 used

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	3084204N01	6.63" 4-conductor cable
	3982717M01	female contact: 4 used
W105	0180751D89	IPA input: includes;
	2882365D02	P451 male coax connector
	3000859004	6" coax cable
	4284011N01	coax connector clip
W106	0180751D85	transmitter vco output: includes;
	2882365D02	P323 male coax connector
	3000859004	6" coax cable
crystal:		
Y201	4884398K08	10.796 MHz
Y202 thru 206	9180011E05	10.7 MHz
non-referenced items		
	0400049854	WASHER, spacer: for U201
	2683120N01	SHIELD, circuit board top
	2683120N02	SHIELD, circuit board top
	2683121N01	SHIELD, transmitter
	2683121N02	SHIELD, transmitter
	2683121N03	SHIELD, transmitter
	2683122N01	SHIELD, circuit board top: 5 used
	2683122N02	SHIELD, circuit board top
	2683122N03	SHIELD, circuit board top: 3 used
	2683122N04	SHIELD, circuit board top
	2683123N01	SHIELD, circuit board bottom
	2683124N01	SHIELD, circuit board bottom
	2683125N01	SHIELD, circuit board bottom
	2683126N02	SHIELD, circuit board bottom
	2683127N01	SHIELD, circuit board bottom
	2683049N01	SHIELD, circuit board top: 2 used
	2683950N01	SHIELD, circuit board top: 2 used
	2684397N01	SHIELD, solder side transmitter
	2684398N02	SHIELD, i-f
	2684399N02	SHIELD, transmitter
	5483865R01	LABEL, bar code
	5584300B01	HANDLE: 2 used
	5584300B02	HANDLE: 7 used
	5584300B05	HANDLE
	7505295B01	PAD, crystal base: 6 used
	7683980B01	CORE, ferrite: for Q201

note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.