



MOTOROLA

NRF4128A - C

Plus, Ultra, etc. (ordered as Ultra)

900 MHz RECEIVER SUPPLEMENT



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COMPONENT OVERLAYS and ELECTRICAL PARTS LIST



RECEIVER ELECTRICAL PARTS LIST

NRF4128C

900 MHz

REFERENCE DESIGNATOR	MOTOROLA PART NUMBER	DESCRIPTION
		CAPACITORS: Fixed, pF ±5%, 50V unless stated
C543	2113740F24	7.5
C544	2113740F49	82
C545	2113741F38	30
C547, C549	2113740F01	0.5
C550, C551	2113740L01	2.0
C552	2311040L02	2.2
C553	2113740F38	30
C556	2113740F12	2.4
C557	2113740A28	9.1
C558	2113740F51	100
C559	2113740F26	9.1
C560	2113740F08	1.6
C561	2113740F51	100
C562	2113740F09	1.6
C563	2113740F26	9.1
C564	2113740F01	0.5
C565	2113740A69	390
C566	2113740F34	20
C567	2160524A15	10
C568	2113740F35	22
C569	2113740F03	1.0
C570	2113740F23	6.8
C572	2113740F51	100
C573	2113740F38	30
C574	2113740F05	1.2
C575	2113740F07	1.6
C576	2113740F14	3.0
C577	2113740F01	0.5
C578	2113740F03	1.0
C579	2113740F01	0.5
C580, C581	2113741F49	0.01 µF
C582	2113741B51	0.018 µF
C583	2113741B41	0.0068 µF
C584	2311049A54	3.3 µF ±20%
C585 - C589	2113743K15	0.1 µF +80%-20%
C595	2113740F44	51
C596	2113740F30	13
C598	2113741A45	0.01 µF
C599	2113740F25	8.2
		FILTERS:
FL551	9162999Z03	Mini Block
FL552	4805620J23	17.9 MHz
FL553, FL554	9162995A12	455 MHz, Ceramic
		CONNECTOR:
J551	0902317J01	8 Pins
		ANTENNAS:
E551	8505996V01	900 MHz (Top Antenna)
E552	8505996V02	900 MHz (Bottom Antenna)
		COILS, RF:
L555	2462580C08	3 turns
L556	2462580B06	4 turns
L558	2462580C09	2 turns
L559	2405452C64	1.5 µH, Chip Coil
L560	2462587E54	120 µH, Chip Coil
L561	2405063H06	9.5 turns
L562	2462580C20	3 turns
L563	2405255J18	1.65 µH ±5%, Chip Coil
L564	2462580D20	5 turns
L565	2462580C06	2 turns
L567	2462580C09	2 turns
L568	2462587P18	3.3 µH
L569	2462587P20	4.7 µH
L571	2462580D11	5 turns
L572	2462575A06	6.8 µH ±10%, Chip Coil
		TRANSISTORS: (See Note 1)
Q551, Q552	4813827A07	MMBR941
Q553, Q554	4813827A03	MMBR901
Q555	4802197J09	NPN
Q556	4805218N33	SMBT1368TI
		RESISTORS: Fixed, Ω 5%, 1/8W unless stated
R551	0660076A31	180
R552, R554	0660076A41	470
R555	0660076A53	1.5k
R556	0660076A65	4.7k
R557	0660076A49	1.0k
R558	0660076A51	1.2k
R559	0660076A64	4.3k
R560	0660076A43	560
R561	0660076A67	5.6k
R564	0660076A73	10k
R565	0660076A37	330
R566	0611077A01	0

R567	0660076M01	0
U551	5102195J41	CIRCUIT MODULE: (See Note 1) 455 kHz IF Demodulator
Y551	KXN6387AA	CRYSTALS: (See Note 2) 1st Oscillator
Y552	4805713B24	44.455 MHz, 2nd Oscillator
NONREFERENCED ITEMS		
	1404216K01	BOOT, Crystal (Y552)
	1404233K01	BOOT, Crystal (Y551)
	1405180A02	INSULATOR, Crystal Filter (FL552)
	8405962F03	CIRCUIT BOARD, Receiver

NOTES:

- For optimum performance, order replacement transistors, diodes and circuit modules by Motorola part number only.
- When ordering crystal units, specify carrier frequency, crystal frequency, and Motorola part number.
- Gaps in numbering continuity of reference designators indicate the missing numbers are not used.

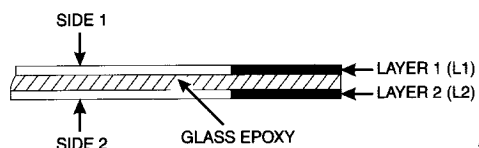
WARNING

Substitution of components may impair intrinsic safety.



This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge.

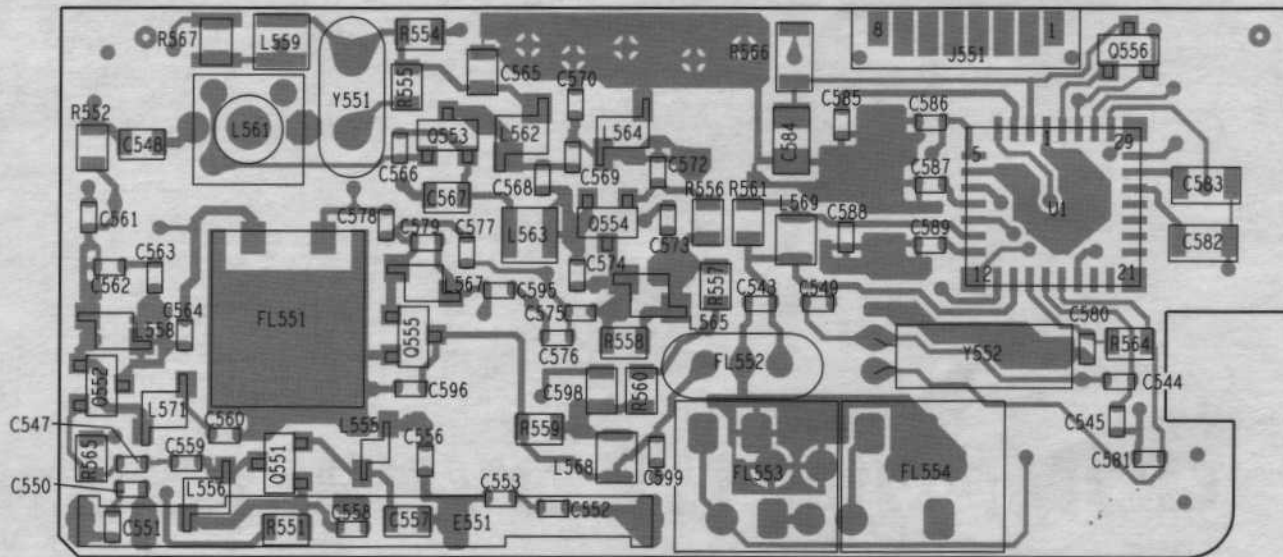
TWO-LAYER CIRCUIT BOARD DETAIL SHOWING COPPER AND GLASS-EPOXY LAYERS VIEWED FROM EDGE OF BOARD



AEFF-10805-D

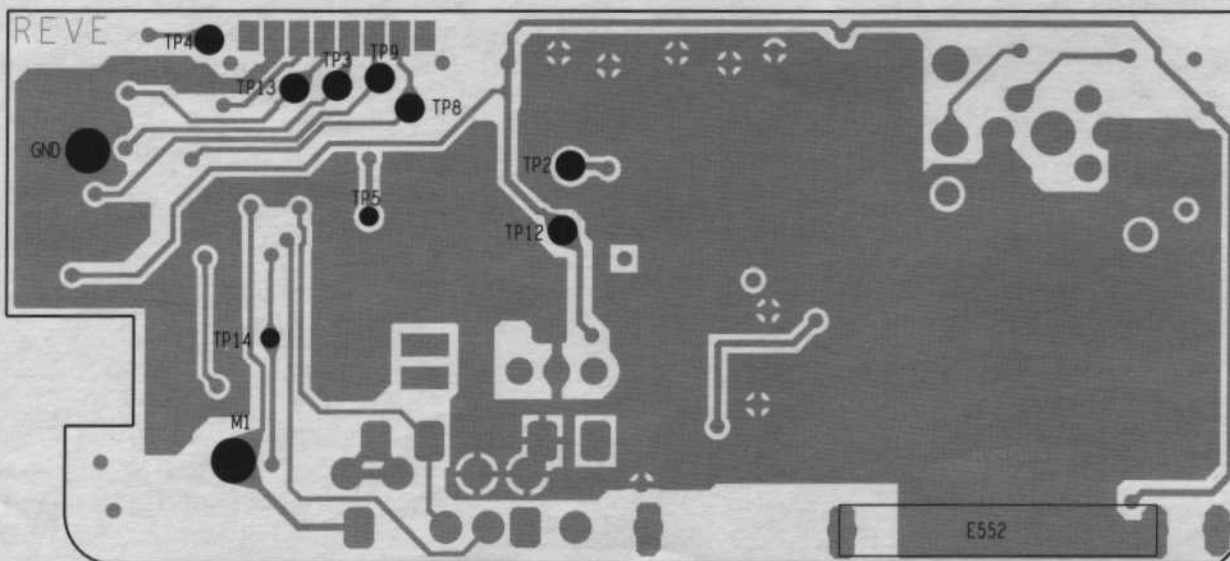
Two-Layer Circuit Board Construction

NRF4128C LAYER 1 AND SIDE 1 COMPONENTS (VIEWED FROM SIDE 1)



L1-BGBP-962918-0
OL-BGBP-962917-0

NRF4128C LAYER 2 AND SIDE 2 WITH TEST POINT LOCATIONS (VIEWED FROM SIDE 2)



L2-BGBP-962921-0
OL-BGBP-962919-0

RECEIVE
NRF4128C

REFERENCE
DESIGNATOR

C543
C544
C545
C547, C549
C550, C551
C552
C553
C556
C557
C558
C559
C560
C561
C562
C563
C564
C565
C566
C567
C568
C569
C570
C572
C573
C574
C575
C576
C577
C578
C579
C580, C581
C582
C583
C584
C585 - C589
C595
C596
C598
C599

FL551
FL552
FL553, FL554

J551

E551
E552

L555
L556
L558
L559
L560
L561
L562
L563
L564
L565
L567
L568
L569
L571
L572

Q551, Q552
Q553, Q554
Q555
Q556

R551
R552, R554
R555
R556
R557
R558
R559
R560
R561
R564
R565
R566

RECEIVER ELECTRICAL PARTS LIST

NRF4128B

900 MHz

REFERENCE DESIGNATOR	MOTOROLA PART NUMBER	DESCRIPTION
		CAPACITORS: Fixed, pF ±5%, 50V unless stated
C543	2113740F24	7.5
C544	2113740F49	82
C545	2113741F38	30
C547, C549	2113740F01	0.5
C550, C551	2113740L01	2.0
C552	2311040L02	2.2
C553	2113740F38	30
C556	2113740F12	2.4
C557	2113740A28	9.1
C558	2113740F51	100
C559	2113740F26	9.1
C560	2113740F08	1.6
C561	2113740F51	100
C562	2113740F09	1.8
C563	2113740F26	9.1
C564	2113740F01	0.5
C565	2113740A69	390
C566	2113740F34	20
C567	2160524A15	10
C568	2113740F35	22
C569	2113740F03	1.0
C570	2113740F23	6.8
C572	2113740F51	100
C573	2113740F38	30
C574	2113740F05	1.2
C575	2113740F07	1.5
C576	2113740F14	3.0
C577	2113740F01	0.5
C578	2113740F03	1.0
C579	2113740F01	0.5
C580, C581	2113741F49	0.01 µF
C582	2113741B51	0.018 µF
C583	2113741B41	0.0068 µF
C584	2311049A54	3.3 µF ±20%
C585 - C589	2113743K15	0.1 µF +80%-20%
C595	2113740F44	51
C596	2113740F30	13
C598	2113741A45	0.01 µF
C599	2113740F25	8.2
		FILTERS:
FL551	9162999Z03	Mini Block
FL552	4805620J23	17.9 MHz
FL553, FL554	9162995A12	455 MHz, Ceramic
		CONNECTOR:
J551	0902317J01	8 Pins
		ANTENNAS:
E551	8505996V01	900 MHz (Top Antenna)
E552	8505996V02	900 MHz (Bottom Antenna)
		COILS, RF:
L555	2462580C08	3 turns
L556	2462580B06	4 turns
L558	2462580C09	2 turns
L559	2405452C64	1.5 µH, Chip Coil
L560	2462587E54	120 µH, Chip Coil
L561	2405063H06	9.5 turns
L562	2462580C20	3 turns
L563	2405255J18	1.65 µH ±5%, Chip Coil
L564	2462580D20	5 turns
L565	2462580C06	2 turns
L567	2462580C09	2 turns
L568	2462587P18	3.3 µH
L569	2462587P20	4.7 µH
L571	2462580D11	5 turns
L572	2462575A06	6.8 µH ±10%, Chip Coil
		TRANSISTORS: (See Note 1)
Q551, Q552	4813827A07	MMBR941
Q553, Q554	4813827A03	MMBR901
Q555	4802197J09	NPN
Q556	4805218N33	SMBT1368TI
		RESISTORS: Fixed, Ω 5%, 1/8W unless stated
R551	0660076A31	180
R552, R554	0660076A41	470
R555	0660076A53	1.5k
R556	0660076A65	4.7k
R557	0660076A49	1.0k
R558	0660076A51	1.2k
R559	0660076A64	4.3k
R560	0660076A43	560
R561	0660076A67	5.6k
R564	0660076A73	10k
R565	0660076A37	330
R566	0611077A01	0

R567	0660076M01	0
U551	5105099Z32	455 kHz IF Demodulator
Y551	KXN6387AA	1st Oscillator
Y552	4805713B24	44.455 MHz, 2nd Oscillator
NONREFERENCED ITEMS		
	1404216K01	BOOT, Crystal (Y552)
	1404233K01	BOOT, Crystal (Y551)
	1405160A02	INSULATOR, Crystal Filter (FL552)
	8405962F02	CIRCUIT BOARD, Receiver

NOTES:

- For optimum performance, order replacement transistors, diodes and circuit modules by Motorola part number only.
- When ordering crystal units, specify carrier frequency, crystal frequency, and Motorola part number.
- Gaps in numbering continuity of reference designators indicate the missing numbers are not used.

HISTORY CHART

The chart below shows previous kit information:

REFERENCE SYMBOL	NRF4128B (ISSUE "O")	
	MOTOROLA PART NUMBER	DESCRIPTION
U551	5105099Z22	455 kHz I-F/Demodulator
	0705196A11	BOOT, Crystal (Y551)
	1402571J01	BOOT, Crystal (Y552)
	1405160A02	INSULATOR, Crystal (Y551)

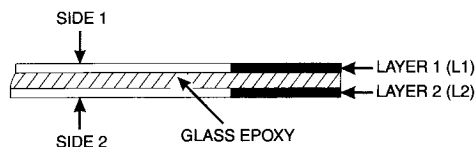
WARNING

Substitution of components may impair intrinsic safety.



This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge.

TWO-LAYER CIRCUIT BOARD DETAIL SHOWING COPPER AND GLASS-EPOXY LAYERS VIEWED FROM EDGE OF BOARD



AEPF-16805-D

Two-Layer Circuit Board Construction

6881103B04-B

RECEIVER ELECTRICAL PARTS LIST

NRF4128A

900 MHz

REFERENCE DESIGNATOR	MOTOROLA PART NUMBER	DESCRIPTION
CAPACITORS: Fixed, pF ±5%, 50V unless stated		
C543	2113740F24	7.5
C544	2113740F49	82
C545	2113741F38	30
C547, C549	2113740F01	0.5
C550, C551	2113740L01	2.0
C552	2311040L02	2.2
C553	2113740F38	30
C556	2113740F12	2.4
C557	2113740A28	9.1
C558	2113740F51	100
C559	2113740F26	9.1
C560	2113740F09	1.8
C561	2113740F51	100
C562	2113740F09	1.8
C563	2113740F22	6.2
C564	2113740F01	0.5
C565	2113740A69	390
C566	2113740F34	20
C567	2160524A15	10
C568	2113740F35	22
C569	2113740F03	1.0
C570	2113740F23	6.8
C572	2113740F51	100
C573	2113740F38	30
C574	2113740F05	1.2
C575	2113740F07	1.5
C576	2113740F14	3.0
C577	2113740F01	0.5
C578	2113740F03	1.0
C579	2113740F01	0.5
C580, C581	2113741F49	0.01 µF
C582	2113741B51	0.018 µF
C583	2113741B41	0.0068 µF
C584	2311049A42	3.3 µF ±20%
C585 - C589	2113741B69	0.10 µF ±10%
C595	2113740F44	51
C596	2113740A30	11
C598	2113741A45	0.01 µF
C599	2113740F25	8.2
FILTERS:		
FL551	9162999Z01	Mini Block
FL552	4805620J23	17.9 MHz
FL553, FL554	4805368G03	455 MHz, Ceramic
CONNECTOR:		
J551	0902317J01	8 Pins
COILS, RF:		
E551	8505996V01	900 MHz (Top Antenna)
E552	8505996V02	900 MHz (Bottom Antenna)
L555	2405318D08	3 turns
L556	2405097H06	4 turns
L558	2405318D09	2 turns
L559	2405452C64	1.5 µH, Chip Coil
L560	2462587E54	120 µH, Chip Coil
L561	2405063H03	7 turns
L562	2405318D20	3 turns
L563	2405255J18	1.65 µH ±5%, Chip Coil
L564	2405486C20	5 turns
L565	2405318D06	2 turns
L567	2405318D09	2 turns
L568	2462587P18	3.3 µH
L569	2462587P20	4.7 µH
L571	2405486C11	5 turns
L572	2462575A06	6.8 µH ±10%, Chip Coil
TRANSISTORS: (See Note 1)		
Q551, Q552	4813827A07	MMBR941
Q553, Q554	4813827A03	MMBR901
Q555	4802197J09	NPN
Q556	4805218N33	SMBT1368TI
RESISTORS: Fixed, Ω 5%, 1/8W unless stated		
R551	0660076A31	180
R552, R554	0660076A41	470
R555	0660076A53	1.5k
R556	0660076A65	4.7k
R557	0660076A49	1.0k
R558	0660076A51	1.2k
R559	0660076A64	4.3k
R560	0660076A43	560
R561	0660076A67	5.6k
R564	0660076A73	10k
R565	0660076A37	330
CIRCUIT MODULE: (See Note 1)		
U551	5105099Z03	455 kHz IF Demodulator

Y551	KXN6387AA	CRYSTALS: (See Note 2)
Y552	4805713B24	1st Oscillator
		44.455 MHz, 2nd Oscillator
NONREFERENCED ITEMS		
	0705196A11	BOOT, Crystal Filter (FL552)
	1404216K01	BOOT, Crystal (Y552)
	1404233K01	BOOT, Crystal (Y551)
	1405160A02	INSULATOR, Crystal Filter (FL552)
	8405962F01	CIRCUIT BOARD, Receiver

NOTES:

- For optimum performance, order replacement transistors, diodes and circuit modules by Motorola part number only.
- When ordering crystal units, specify carrier frequency, crystal frequency, and Motorola part number.
- Gaps in numbering continuity of reference designators indicate the missing numbers are not used.

HISTORY CHART

The chart below shows previous kit information:

REFERENCE SYMBOL	NRF4128A (ISSUE "O")	
	MOTOROLA PART NUMBER	DESCRIPTION
	0705196A11	BOOT, Crystal (Y551)
	1402571J01	BOOT, Crystal (Y552)
	1405160A02	INSULATOR, Crystal (Y551)

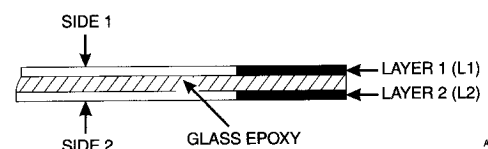
WARNING

Substitution of components may impair intrinsic safety.



This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge.

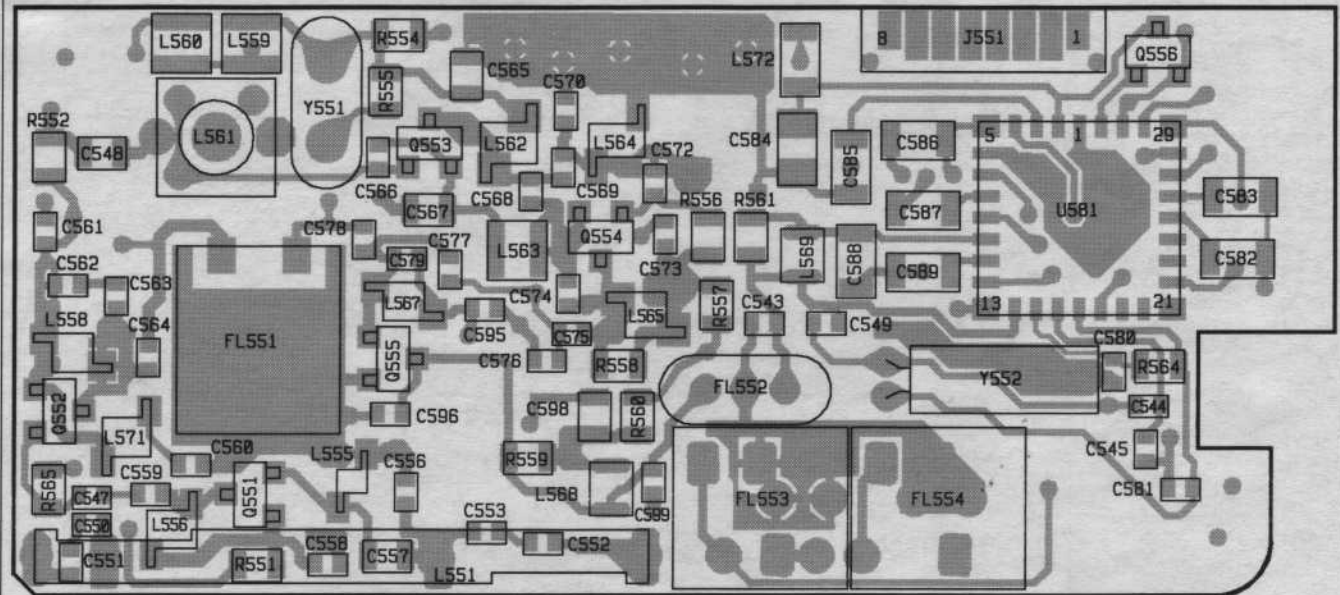
TWO-LAYER CIRCUIT BOARD DETAIL SHOWING COPPER AND GLASS-EPOXY LAYERS VIEWED FROM EDGE OF BOARD



AEPP-16805-D

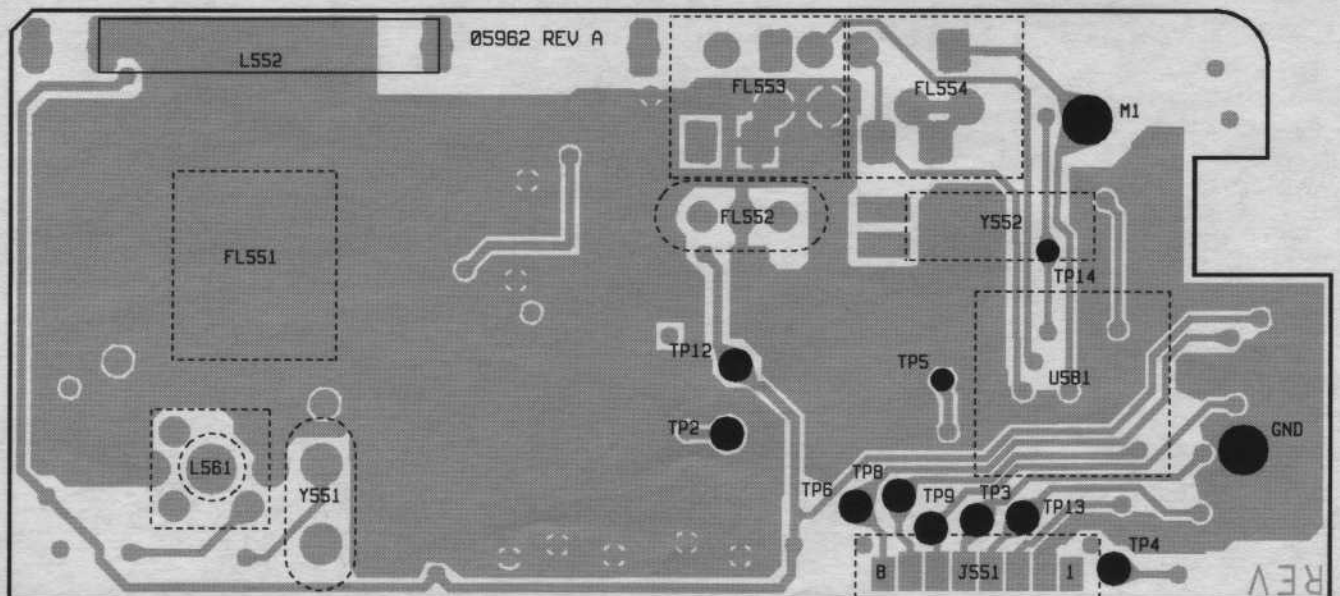
Two-Layer Circuit Board Construction

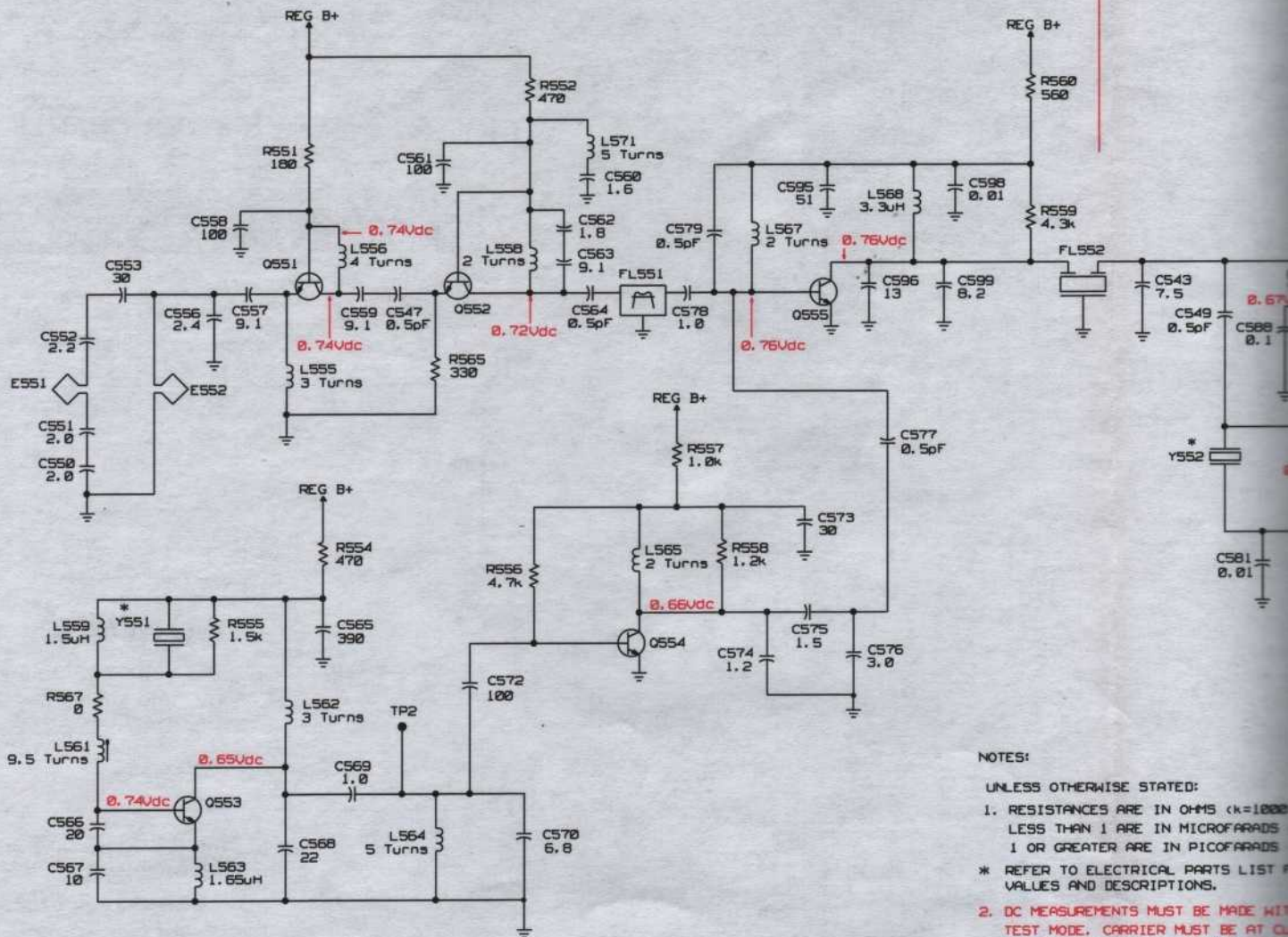
NRF4128A LAYER 1 AND SIDE 1 COMPONENTS (VIEWED FROM SIDE 1)



L1-BGPB-931132-0
OL-BGPB-931131-0

NRF4128A LAYER 2 AND SIDE 2 WITH TEST POINT LOCATIONS (VIEWED FROM SIDE 2)





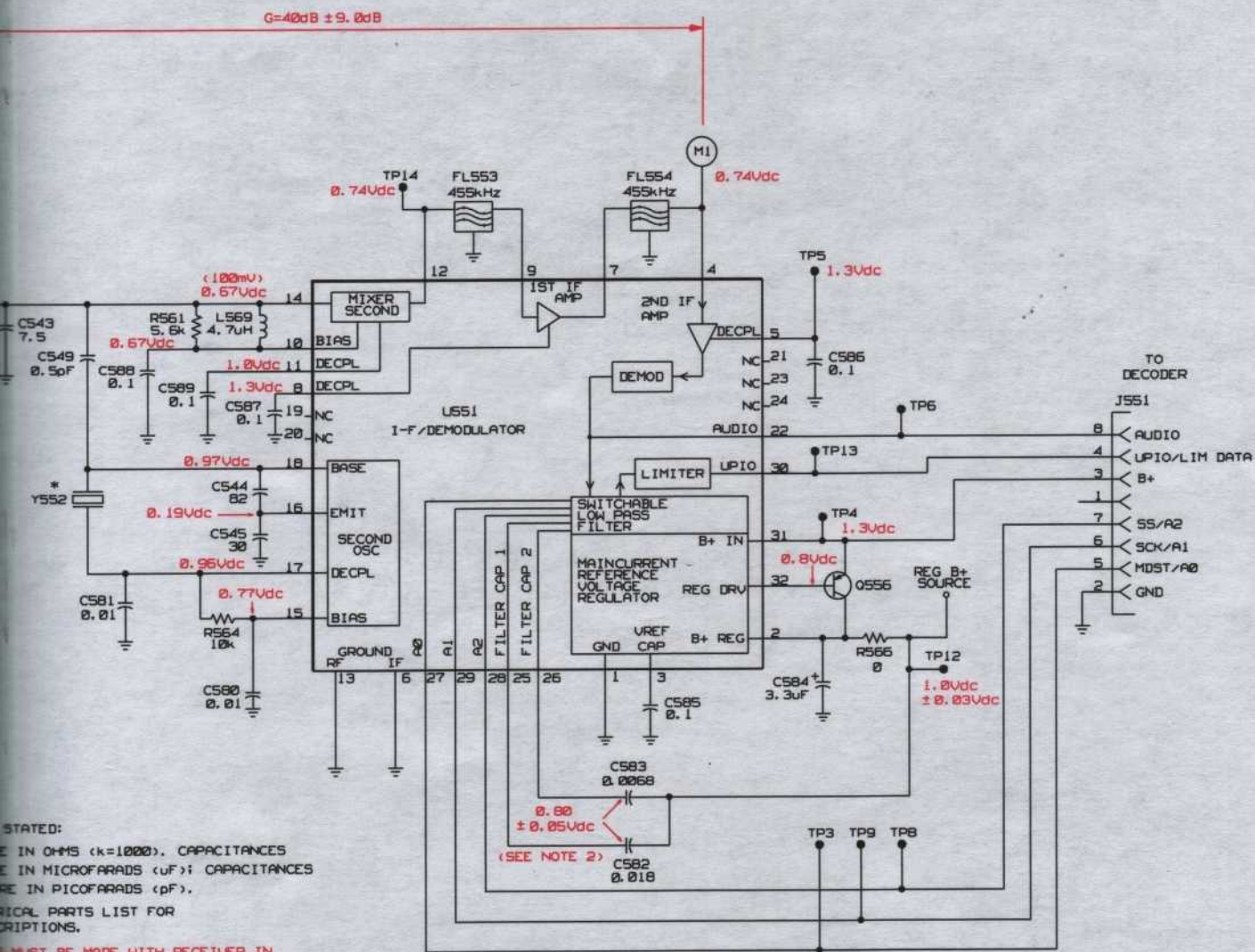
NOTES:

UNLESS OTHERWISE STATED:

1. RESISTANCES ARE IN OHMS ($\times=1000$)
LESS THAN 1 ARE IN MICROFARADS
1 OR GREATER ARE IN PICOFARADS

* REFER TO ELECTRICAL PARTS LIST FOR VALUES AND DESCRIPTIONS.

2. DC MEASUREMENTS MUST BE MADE WITH TEST MODE. CARRIER MUST BE AT CARRIER LEVEL AND ALL OSCILLATORS WITHIN SPECIFICATION.



RECEIVER SCHEMATIC DIAGRAM (NRF4128B/C)

REPLACEMENT PARTS

When ordering replacement parts or equipment, include the Motorola part number and description used in the service manual or supplement.

When ordering crystals or channel elements, specify the Motorola part number, description, crystal frequency, and operating frequency desired.

When the Motorola part number of a component is not known, use the product model number or other related major assembly along with the description of the related major assembly and of the component in question.

PAGING PRODUCTS GROUP

North America (Paging Accessories and Aftermarket Parts)

Phone: 800-892-3068
Fax: 561-675-5264

International (Accessories, Replacement Parts, and Manuals)

Phone: 561-447-2751 (Latin America and Caribbean)
Fax: 65-354-2232 (Asia Pacific, including test equipment)
Fax: 44-1256-81-9338 (Europe/Africa/Middle East)
Fax: 86-10-6461-0272 (China)

AFTERMARKET PRODUCTS DIVISION (APD)

U.S.A. (Test Equipment, Replacement Parts, and Manuals)

Phone: 800-422-4210
Fax: 847-538-8198

APD Parts Identification Help

Phone: 847-538-0021 (U.S.A.)
Phone: 847-538-8023 (Canada and Latin America)

North and South America (Test Equipment)

Telex: 403305
Fax: 847-576-3023

PAGER SERVICE

REGIONAL SERVICE MANAGERS

U.S.A.

Phone: 561-739-8767 (Including Extended Warranty)
Fax: 561-739-8885

International

Fax: 561-447-2720 (Latin America and Caribbean)
Fax: 65-354-2232 (Asia Pacific/India/Australia)
Fax: 44-1256-81-9338 (Europe/Africa/Middle East)
Fax: 86-10-6461-0272 (China)

CUSTOMER CARE UNIT (CCU) AND PRODUCT SERVICES

U.S.A.

Phone: 561-739-2213 (Product Services)

International

Fax: 561-739-3072 (North and South America)
Fax: 65-482-3879 (Asia Pacific CCU)
Fax: 561-739-3072 (Europe/Africa/Middle East)
Fax: 91-80-852-0212 (India CCU)

U.S.A. PAGER CARE CENTERS

Motorola Inc.
Midwest Pager Care Center
1335 Basswood Road
Schaumburg, IL 60173
Phone: 847-576-5763
Fax: 847-538-2763

Motorola Inc.
Southeast Pager Care Center
3020 High Ridge Road, Suite 600
Boynton Beach, FL 33426
Phone: 561-533-0037
Fax: 561-533-9711

Motorola Inc.
South Central Pager Care Center
1701 Valley View Lane, Suite A
Farmers Branch, TX 75234
Phone: 214-241-1891
Fax: 214-243-6781

Motorola Inc.
Mid Atlantic Pager Care Center
5370 Truman Drive, Suite C
Decatur, GA 30035
Phone: 770-981-5070
Fax: 770-981-5211

INTERNATIONAL PAGER CARE CENTERS

Motorola
European Pager Care Center
Unit 1, The Ringway Centre, Edison Road
Houndmills, Basingstoke RG21 6YP
England, United Kingdom
Phone: 44-1256-84-2220
Fax: 44-1256-81-9338

Motorola Electronics Pte. Ltd.
Asia Pacific Pager Care Center
49 Jalan Pemimpin #02-10
Republic of Singapore 577203
Phone: 65-354-2268
Fax: 65-354-2232

Motorola (China) Electronics Ltd.
Beijing Pager Service Centre
29, Don Zhi Men Wai Avenue
Beijing, Peoples Republic of China 100027
Phone: 86-10-6461-1155
Fax: 86-10-6461-0272

Motorola (China) Electronics Ltd.
Shanghai Pager Service Centre
5th Floor, Central Place
16 Henan Road South
Shanghai 200002, P.R.C.
Phone: 86-21-6374-7668 ext. 5888
Fax: 86-21-6374-2714

Motorola (China) Electronics Ltd.
Guangzhou Pager Service Centre
271 Huang Pu Da Dao West
Tian-He District
Guangzhou 510620, P.R.C.
Phone: 86-20-753-7888 ext. 3602
Fax: 86-20-754-2591

Motorola India LTD.
Paging Service Centre
No. 33, The Senate Bldg.
Ulsoor Road
Bangalore, India 560 042
Phone: 91-80-559-9904/8983
Fax: 91-80-559-8984

Motorola de Venezuela Y de los Andes
Edificio Forum
Entre Calle Guayaipuro y
Carabobo con avenida principal
Las Mercedes, El Rosal
Caracas, Venezuela
Phone: 582-952-8355

Motorola
Iberia Pager Care Center
San Severo S/N, Barajas Park
28042 Madrid, Spain
Phone: 34-1-329-0461
Fax: 34-1-329-1933

Motorola Do Brazil
São Paulo Pager Care Center
Rua Bandeira Paulista, 580
Itaim Bibi, CEP 04532-001
São Paulo, SP, Brasil
Phone: 55-11-821-9991

Motorola
Taiwan Pager Care Center
2F-1, 35 Section 1, Cheng-Teh Road
Taipai, Taiwan, China
Phone: 886-2-555-0589
Fax: 886-2-555-1039

Motorola de Mexico
Pager Care Center
Avenida Paseo de la Reforma
No. 164 Colonia Juarez
No Postal CP06600
Mexico, D.F. de Mexico
Phone: 525-747-8200

Motorola Korea Ltd
Korea Pager Care Center
Samtan Bldg, 2nd Floor 947-7 Daechi-Dong
Kangnan-Ku, Seoul, South Korea, 135-280
Phone: 82-2-565-5316
Fax: 82-2-561-1633

Motorola South Asia Pte. Ltd.
Malaysia Pager Care Center
2nd Floor, Wisma Damansara
Jalan Semantan 50490
Kuala Lumpur, Malaysia
Phone: 603-253-9372
Fax: 603-253-8892

Motorola Canada Limited
Canada Pager Care Center
2 East Beaver Creek Road, Unit 4
Richmond Hills, Ontario, Canada L4B2N3
Phone: 905-709-2337
Fax: 905-709-7240

Motorola de Colombia, PCC
Diagonal 127A, No. 1764
Santa Fe de Bogota, Colombia
Phone: 571-615-5769
Phone: 571-615-6941

Motorola Electronica de Puerto Rico, Inc.
Paging 2
Pager Care Center
Road 686, Km 17.0
Cabo Caribe Industrial Park
Vega Baja, Puerto Rico 00695
Phone: 787-858-8903

For other international locations, please inquire at the most convenient phone number, or contact your local Motorola sales representative.

PRODUCT SERVICES BULLETIN BOARD SERVICE (BBS)

Motorola's Customer Product Services group now offers informative bulletin board services. The BBS provides access to technical information about Motorola's current paging products, service manuals, and programming and servicing tools. Other BBS features include e-mail access to pager tech support, PPS updates, and product service bulletins.

For access to the BBS, use any PC or Macintosh computer that is connected to a modem. Set the modem to 8 data bits, no parity, and 1 stop bit, then dial (561) 739-3069. For further information about the Product Services BBS call (561) 739-3255.

In the Peoples Republic of China, dial 86-10-6462-4643 or 86-10-6463-4645 for access to the Chinese BBS.