



# 602T

## Dynamic Handheld Microphone

**602-3374 (Blade Mount)**

**602-3375 (Button Mount)**

**602-3376 (Loop Mount)**

- Highly Reliable
- EMI and RFI Protected
- Light weight
- Greater Durability
- Three mounting options
- All models use a PJ-068 connector

### Specifications

(Per RTCA/(D0-214)

#### Type:

Transistorized Dynamic

#### Frequency Response:

300 to 5,000 Hz

#### Impedance:

Matches standard aircraft carbon circuitry.

#### Sensitivity:

400mV  $\pm$ 3dB for  
114 dB re 20u pascals  
(normal speech)  
(output of built-in amplifier)

#### Power Gain:

35 dB (6 volts)

#### Current Drain:

12.3 ma at 8 V dc (12-volt system)  
25.0 ma at 16V dc (24-volt system)

#### Case Material:

Black ABS

#### Dimensions: (See Figure 1)

101.6 mm (4.0 in) length,  
less hanger  
72.1 mm (2.84 in) width  
59.4 mm (2.34 in) depth

#### Weight:

413 g (0.91 lb.)

#### Certification:

FAA TSO C58a

#### Accessories Supplied:

Panel mounting Bracket  
(See Figure 3)

#### FAA Approval:

TSO C58a, Category B

### Description and Application

The 602T is a handheld dynamic microphone designed for highly articulate speech transmission under high ambient noise. The 602T is the result of a continuous study of the needs of the communications industry so that it uniquely meets the specialized requirements of airline, two-way radio and industrial applications. The 602T is a transistorized, pressure-gradient microphone utilizing three sound entrances for reduction of interfacing ambient noise. Stated simply, if sound pressure and phase are reasonably identical at all three sound entrances, as in the case of relatively distant sounds, then little or no output results. If, however, sound originates in close proximity to one sound entrance (i.e. 1/4 to 1/2 inch), a pressure and phase differential exists and output results. The 602T is unexcelled at discriminating between near and distant sounds for maximum ambient noise rejection. The compact single stage transistor amplifier is specially stabilized and will operate uniformly from +55°C down -20°C. Output of the transistor amplifier is designed to plug directly into inputs designed for carbon microphones. A screwdriver accessible potentiometer is provided for adjustment of output level. The 602T provides extremely reliable, crisp, clear speech reproduction with high sensitivity and low distortion.

### WARRANTY (Limited)

Electro-Voice Aircraft Microphones are guaranteed for a period of thirty-six months from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, the microphone will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not extend to finish appearance items, cables, cable connectors, switches or malfunction due to abuse or operation under other than specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Service and repair address for this product:

Factory Service Department  
Bosch Security Systems, Inc  
8601 East Cornhusker Hwy  
Lincoln, NE 68507-9072 USA

Specifications subject to change without notice.

OVERHAUL INSTRUCTIONS

- 1. Special Tools: None.
- 2. Disassembly (see Figure 4):
  - a. Begin disassembly by removing the three screws holding the case back.
  - b. Do not remove the head subassembly unless it is necessary to replace the head. If it is necessary to replace this component, proceed as indicated in Steps c and d.
  - c. Remove two screws from switch plate holding head assembly in place. Gently remove the head.
  - d. With the head assembly removed, it is possible to unsolder all leads and replace the head.
  - e. The switch assembly should not be removed from switch plate.
  - f. Do not unsolder leads to switch unless necessary for replacement of cable.
- 3. Cleaning:
  - a. Thoroughly clean all dust and dirt from microphone by first using dry, compressed air to dislodge dirt from inaccessible corners. Clean each part with a lint-free cloth or brush.
  - b. Remove pits from switch contacts by burnishing.
- 4. Inspection:
  - a. Inspect switch contacts for signs of excessive wear.
  - b. Examine unit for damaged or dried-out wiring or sleeving. Check all solder connections for good contacts.

- c. Check cable for signs of damage such as cuts or cracks.
- 5. Repair or Replacement:
  - a. Replace any part which is damaged.
  - b. Check resistance across the head with an ohmmeter. It should read about 150 ohms. In addition, a distinct click from the microphone element should be heard when the circuit to the ohmmeter is made or interrupted. If it is not, replace head as described in the reassembly procedure.
- 6. Reassembly:
  - a. Reassembly is the reverse of disassembly.
- 7. Test procedure, See (D0-214)
- 8. Check at Switch Operation:
  - a. With switch released, check the resistance between the red and shield leads. (Tip and sleeve on PJ068 plug.) It should be infinite.
  - b. Check resistance between the white and black leads. (Ring and sleeve on PJ068 plug.) It should be infinite.
  - c. Depress switch and check resistance between red and black leads. (Tip and sleeve on PJ068 plug.) It should be zero.
  - d. Depress switch and check resistance between white and black leads. (Ring and sleeve on PJ068 plug.) It should be from 1,000 to 10,000 ohms depending on meter polarity.
- 9. Check of Microphone Output  
The best procedure for testing the microphone is to compare its output with one known to be operating properly, using the test setup in (D0-214) . Check the output voltage as follows.
  - a. Depress microphone switch and adjust test voltage to obtain 8 volts on a DC meter.
  - b. Hold the test microphone about 1/4-inch from the mouth and talk at normal speech level with microphone switch depressed. An output of about 0.10 volt should be obtained.

Figure 2—Amplifier Circuit

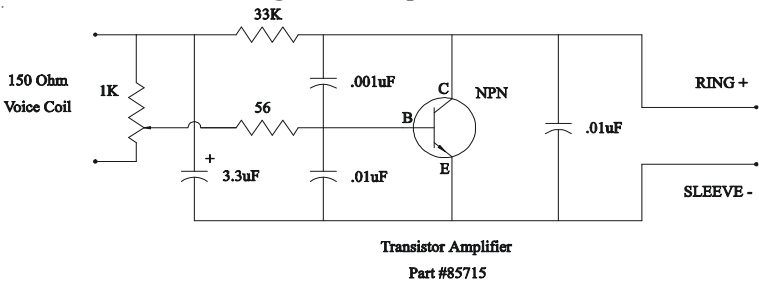


Figure 3—Mounting Profiles

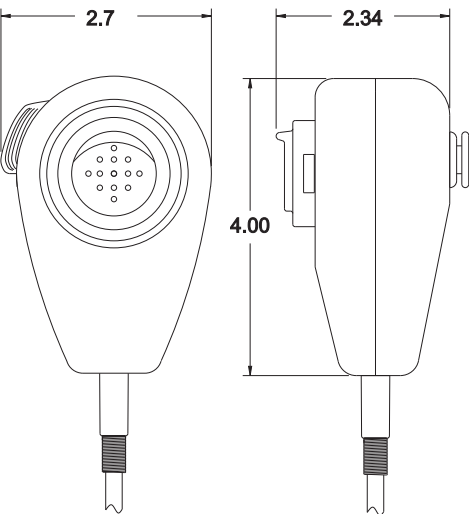


Figure 1—602T Dimensions

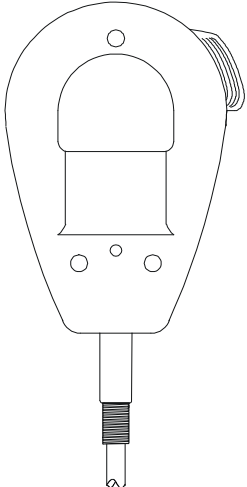
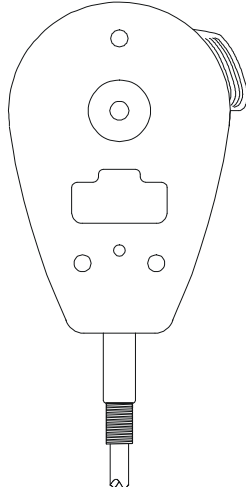
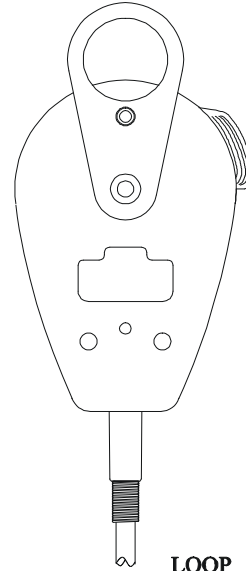
602-3374	602-3375	602-3376
		
BLADE	BUTTON	LOOP
8474	81731	88408
Mounting Bracket Sub-Assemblies		

Figure 4—Assembly (Button style backcase shown)

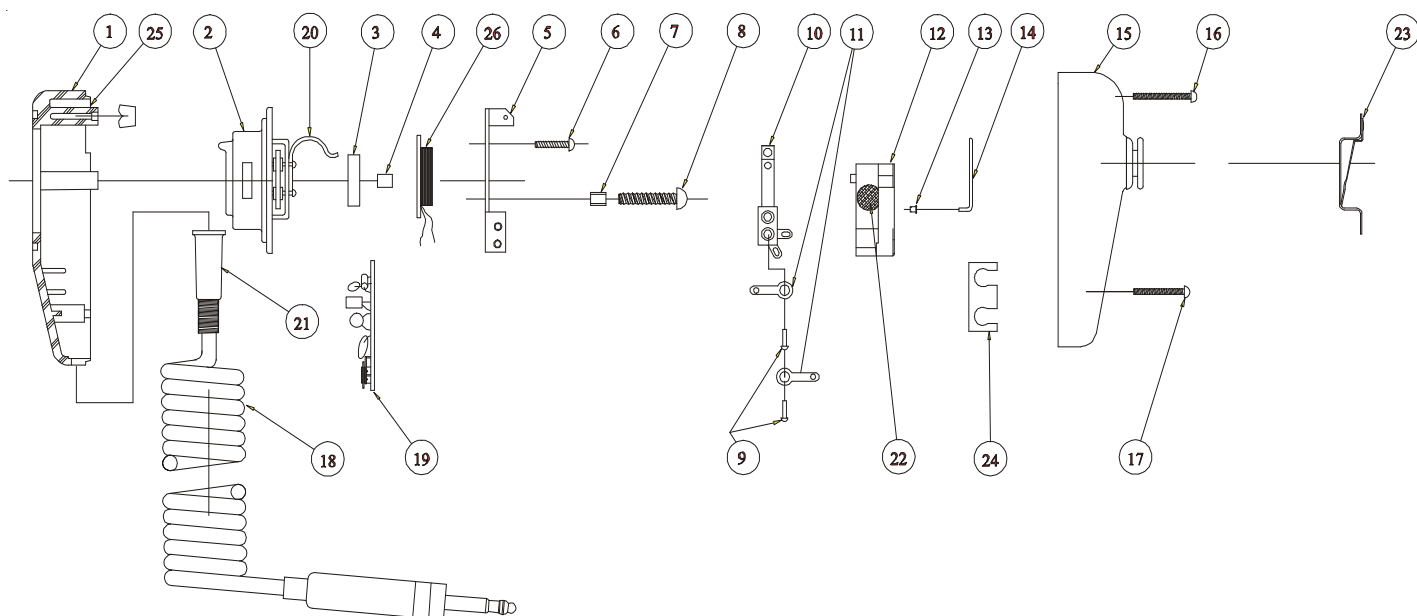


Figure 5—Wiring Diagram

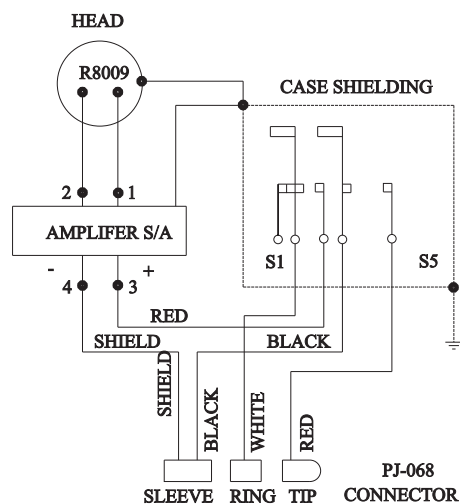
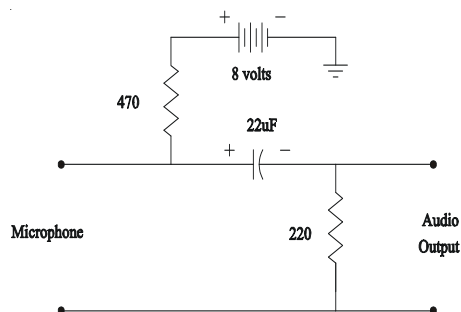


Figure 6—Test Circuit



Test Circuit  
Per RTCA/DO-214

Figure 7—Serviceable Replacement Parts for 602T

PARTS LIST			
QUANTITIES SHOWN ARE QUANTITIES USED DEPENDING ON VERSION			
ITEM	PART NO.	QTY.	DESCRIPTION
1	A76137	1	CASE, FRONT
2	86099	1	MIC. CARTRIDGE S/A
3	10031	1	MAGNET
4	2817	1	RUBBER BUMPER, .180 - .200 LONG
5	A74942	1	BRACKET
6	62438	2	SCR., #4x1/2, SELF TAP RD. HD., PHILL, TYPE 25
7	74941	1	SPACER
8	62534	1	SCR., #6x7/8 SELF TAP RD. HD., PHILL. TYPE 25
9	B60328	2	SCR., #4-40x1/2RD. HD. PHILL.
10	56063	1	SWITCH, LEAF
11	2721	2	LUG, SOLDER
12	74943	1	ACTUATOR
13	20632	1	EYELET
14	19006	1	SPRING ACTUATOR
15	89041 XX	1	BACKCASE S/A BLADE STYLE
	89039 XX	1	BACKCASE S/A BUTTON STYLE
	89040 XX	1	BACKCASE S/A LOOP STYLE
16	62437	1	SCR., #4-24x1, SELF TAP RD. HD., PHILL. TYPE 25
	62857	1	SCR., #4-24x11/4", FLT HD, XREC - LOOP VERSION ONLY
17	62489	2	SCR., #4x3/4, SELF TAP RD. HD., PHILL. TYPE 25
18	701427	1	CABLE S/A
19	85715	1	AMPLIFIER S/A
20	5536-95	1	FOIL, ALUM., 3/4x1 1/2 LONG
21	88341	1	FLEX RELIEF
22	3123	1	FELT DOT
23	SEE FIGURE 3	1	MOUNTING BRACKET S/A
24	74939	1	STRAIN RELIEF
25	20137	1	ONSET, PALNUT (LOOP VERSION ONLY)
26	701468	1	HUMBUCK COIL S/A

# ENVIRONMENTAL QUALIFICATION FORM

## BOSCH SECURITY SYSTEMS, INC.

MICROPHONE 602T, (602-3376, 602-3375, 602-3374), (HANDHELD)  
FAA TSO C-58a Approved

Specification Enclosed with Microphones

CONDITIONS	DO-160D PARAGRAPH #	DESCRIPTION OF CONDUCTED TESTS
Temperature and Altitude <sup>2</sup>	4.0 Rev. 1	
Low Temperature	4.5.1	Equipment tested to Category B1
High Temperature	4.5.2, 4.5.3	Equipment tested to Category B1
Altitude	4.6.1	Equipment tested to Category B1
Decompression	4.6.2	Decompression tested at 15,000 ft./Category A1
Over Pressure	4.6.3	Equipment tested to Category A1
Temperature Variation <sup>2</sup>	5.0	Equipment tested to Category 'B'
Humidity <sup>2</sup>	6.0	Equipment tested to Category 'A'
Shock	6.0	No test required
Operational	7.2	No test required
Crash Safety	7.3	No test required
Vibration <sup>2</sup>	8.0	Equipment tested Per (DO-214)
Explosion	9.0	No test required
Waterproofness	10.0	No test required
Fluids Susceptibility	11.0	No test required
Sand and Dust	12.0	No test required
Fungus	13.0	No test required
Salt Spray	14.0	No test required
Magnetic Effect	15.0	Equipment tested to Class 'A' & 'Z' Per (DO-214)
Power Input	16.0	No test required
Voltage Spike Conducted	17.0	Equipment tested to Category 'A'
Audio Frequency Conducted	18.0	No test required
Susceptibility		
Induced Signal Susceptibility (Para. 19.3.1)	19.0	Equipment tested to Category 'B'
(Para. 19.3.4) <sup>1</sup>	19.0	Equipment tested to Category 'B'
Transient RF (Radiated and Conducted) <sup>1</sup>	20.0	Equipment tested Per (DO-214) para. 2.5.11.1
Sustained Ambient RF (Radiated and Conducted) <sup>1</sup>	20.0	Equipment tested Per (DO-214) para. 2.5.11.2
Emission RF Energy <sup>1</sup>	21.0	Equipment tested to Category 'M'
Transient		
Other Test <sup>2</sup>		Fire resistance tests were conducted in accordance with Federal Aviation Regulation, Part 25, Appendix F, F.A.R. 25.853 and F.A.R. 25.1359 (d)
REMARKS: - Tests were performed at Electro-Voice, Buchanan, MI, except the following <sup>1</sup> Radiometrics Midwest Corp., Lombard, IL <sup>2</sup> Gaynes Testing Laboratories, Chicago, IL		