DTMF Microphone

KRY 101 1637/3

tyco Electronics

MA-COM

NOTICE!

Repairs to this equipment should be made only by an authorized service technician or facility designated by the supplier. Any repairs, alterations or substitution of recommended parts made by the user to this equipment not approved by the manufacturer could void the user's authority to operate the equipment in addition to the manufacturer's warranty.

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SPECIFICATIONS

ELECTRICAL/ACOUSTICAL

(Test conditions unless otherwise specified: audio output measured between pin 2 and ground; PTT switch depressed; no hang-up button connection; mic and DTMF level trimmers full clockwise; dc VTVM 10 MΩ or greater input impedance; ac VTVM 1 MΩ or greater input impedance.)

Electret condenser (with transistor preamplifier, DTMF signaling circuitry, illuminated keypad)

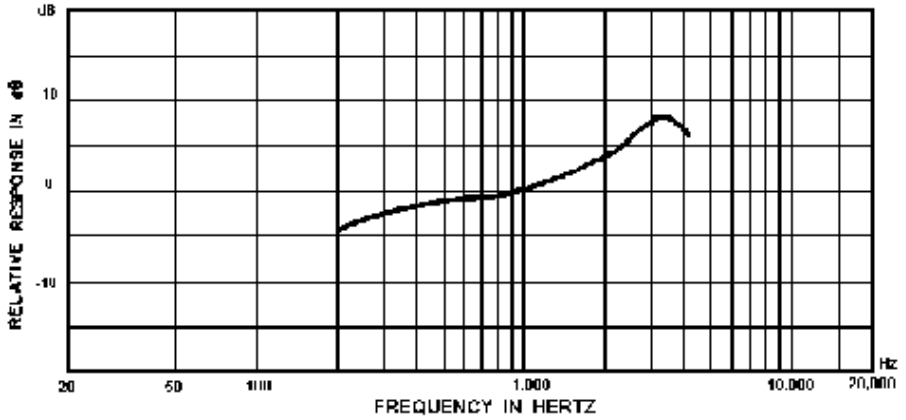


Figure 1 - Typical Frequency Response

Frequency Response

200 to 4,000 Hz (see Figure 1)

Polar Pattern

Omnidirectional

Output Level (at 1,000 Hz, 1 cm)

-6.0 dB (V+ = 12 V) (0 dB = 1 V per 100 μbars)

DC Supply Current

4.0 mA at 12 V

Hum Sensitivity

-94 dBV maximum in 1 Oe 60 Hz field (mic level control full counterclockwise)

DTMF Output Level

1.0 V peak-to-peak

Audio Polarity

Positive sound pressure produces positive voltage at pin 6 of modular connector with respect to ground.

Microphone Connector

6-conductor modular telephone type

PTT Switch Assembly

Mechanical: Double-pole, single-throw, leaf-type, normally open.

Electronic: Open NPN transistor collector to ground; positive polarity only; maximum on-state current 100 mA to produce 0.6 V or less; maximum off-state voltage 40 V.

Cable

Detachable, 1.4 m (48 in.), 5-conductor (1 shielded), vinyl-rubber-jacketed coil cord with modular plug on microphone end

Construction

Case	Black textured high-impact ARMO-DUR
Switch Button	Black ARMO-DUR
Keypad	Molded silicone rubber

Dimensions

See Figure 2

Net Weight

160 grams (5.6 oz)

ENVIRONMENTAL ENDURANCE

Operating Temperature: -40° to 60° C (-40° to 140° F**)**
Storage Temperature: -54° to 85° C (-65° to 185° F)
Relative Humidity 0 to 95% (non-condensing)

INTRODUCTION

Model KRY 101 1637/3 is a hand-held, amplified, condenser DTMF communications microphone with an illuminated keypad. The microphone is ideal for upgrading existing two-way radios for use with advanced telephone interconnect systems or for new installations. It is designed for rugged and reliable operation in any mobile communications application. The microphone has an omni-directional pickup pattern and provides extremely clear transmission, even in noisy environments. In addition to its clear, crisp, natural voice response, the microphone has extremely low sensitivity to hum pickup and low susceptibility to radio frequency interference.

For installations where transmitter input gain requires sensitivity modification, the microphone has convenient, externally accessible screwdriver controls for independent adjustment of both microphone and DTMF levels. This eliminates the problem of fixed audio levels and the necessity for disassembling the microphone for adjustments. Restricting control access also prevents accidental changes common to external controls.

The microphone is designed for use with most currently available mobile two-way radio transceivers. For installation convenience, all microphone and signaling functions, including keypad illumination, are powered directly from the microphone input circuit of most transmitters, minimizing the need for equipment modification. The microphone is compatible with a choice of five-conductor, pre-wired, coil-cord MODULINK® cables, each of which has a telephone-type modular plug on the microphone end, and a choice of popular transmitter input connectors on the other. The cables are instantly changed or replaced without soldering.

The microphone features attractive, contemporary styling designed to blend with most radio designs and vehicle interiors. The microphone is ergonomically designed; it fits naturally and comfortably in the hand and is not affected by heat or humidity. The rugged ARMO-DUR® case is immune to oil, grease, most fumes and solvents salt spray, sun, rust and corrosion. It is outstanding in its ability to withstand mechanical shocks and vibration. The Million-Cycle PIus™ leaf-type switch is a double-pole, single-throw type, designed to resist the effects of severe operating conditions and constant usage. It has nickel-silver blades, and its contacts are palladium-alloyed for reliable, oxidation-free operation.

The microphone's keypad is made of tough silicone rubber, with durable printed characters that will last the life of the microphone. The keypad is backlit by red LEDs, easily visible during night operation and minimizing eye readjustment for night vision.

The microphone is supplied with a small screwdriver for adjusting the microphone amplifier gain and DTMF level, and for releasing the modular-plug microphone cable from the microphone.

FEATURES

- Top-Talk Sound Channels™ for clear voice input, easy handling
- Built-in transistor amplifier (powered by carbon-microphone- type circuit)
- Frequency response from 200 to 4,000 Hz, tailored for voice communications
- Illuminated keypad with positive tactile feel and audible confirmation tones
- Auto push-to-talk (APTT) automatically keys transmitter when keypad is depressed

- Convenient external microphone gain adjustment accommodates most input circuits
- Simple, easy-to-use continuous-tone dialing
- Externally accessible DTMF level adjustment, independent of microphone gain setting
- Modular-plug coil-cord-easily attached and removed
- Low susceptibility to radio frequency interference
- Low sensitivity to hum pickup
- Rugged Million-Cycle Plus leaf-type switch stands up under severe environments and constant use
- High-impact ARMO-DUR case - stronger and lighter than diecast metal, comfortable to the touch in hot or cold weather
- Rugged and dependable under all operating conditions

HANG-UP BUTTON CONNECTION AVAILABLE FOR MICROPHONE HANG-UP SENSING (MOUNTING BRACKET MUST BE GROUNDED)

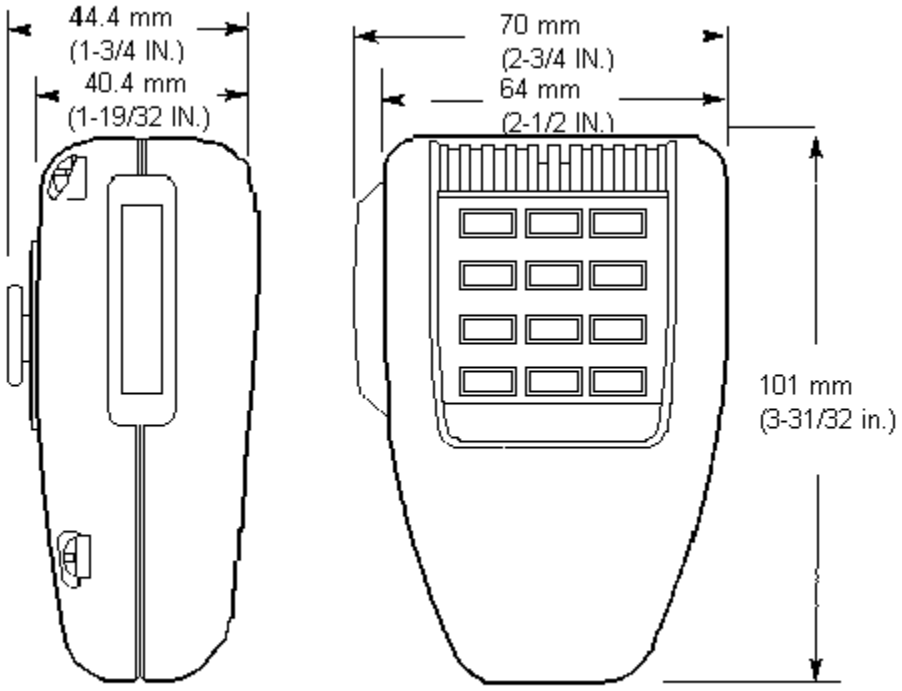
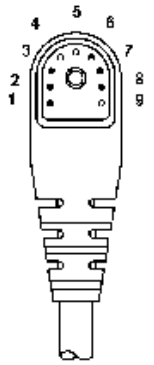


Figure 2 – Overall Dimensions

MICROPHONE CONNECTOR WIRING

Color	Function	KRY 101 1737/3
Black	A–	7
Yellow	PTT	3
White	Mic Hi	1
Red	Switched A+	6
Drain	Mic Lo	2
Blue	CG Dis	8



The cable is attached to the microphone by inserting the modular telephone-type plug in the microphone jack until it locks. To remove the cable from the microphone, insert the small screwdriver supplied with the microphone in rear case hole "A" just above the cable jack (see Figure 5) to unlock the plug and withdraw the plug from the jack.

OPERATION

Operation of all microphone and DTMF functions requires that the microphone is connected to the communications equipment and that the equipment power is turned on. Power application can be verified by observing keypad LED backlighting.

ADJUSTMENTS

After connection to the communications equipment and with equipment power turned on, the microphone sensitivity and DTMF output levels should be adjusted with the supplied screwdriver as follows.

MICROPHONE SENSITIVITY:

Press the push-to-talk button and speak normally into the microphone while observing transmitter modulation. Adjust the microphone sensitivity control (rear case hole "B" in Figure 5) and repeat the talk test as required.

DTMF OUTPUT:

Do not press the push-to-talk button. Depress and hold down the "#" key for a continuous tone. Adjust the DTMF output control (rear case hole "C" in Figure 5) for 60% of rated system deviation.

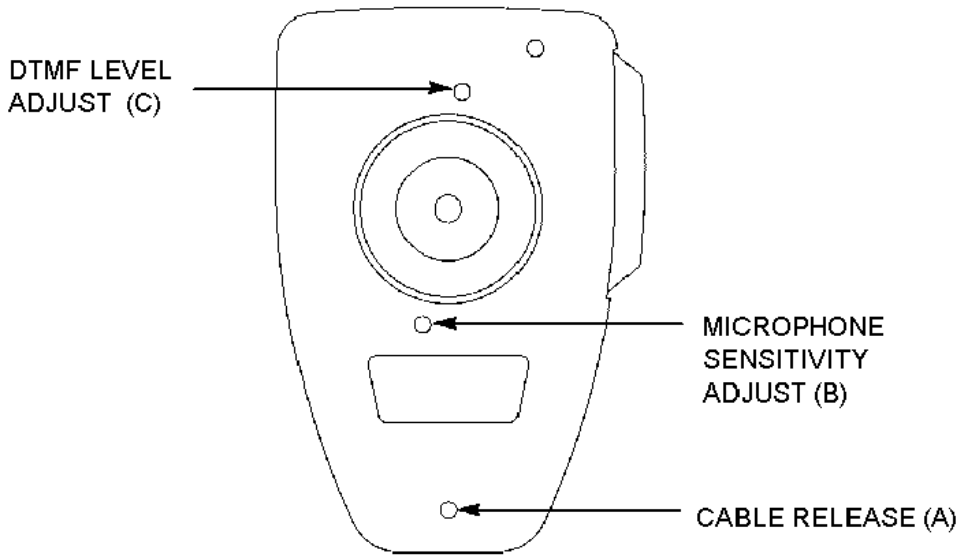


Figure 3 - Microphone Case (rear)

Voice Transmission

1. Hold the microphone comfortably in the hand, positioned so that the Top-Talk Sound Channels at the top of the case are near the mouth. The clearest sound is often obtained with the microphone at the corner of the mouth, with the cable away from the face.

2. Press the push-to-talk button and make sure the equipment is in the transmit mode before speaking.

3. Release the push-to-talk button before dialing.

Dialing

1. Do not depress the push-to-talk button.

2. Press the desired keypad buttons in sequence. A high-pitched tone will confirm that the code has been transmitted.

3. When the first keypad button is pushed, the transmitter is automatically keyed. The transmitter will remain keyed for approximately 1.5 seconds after the button is released.

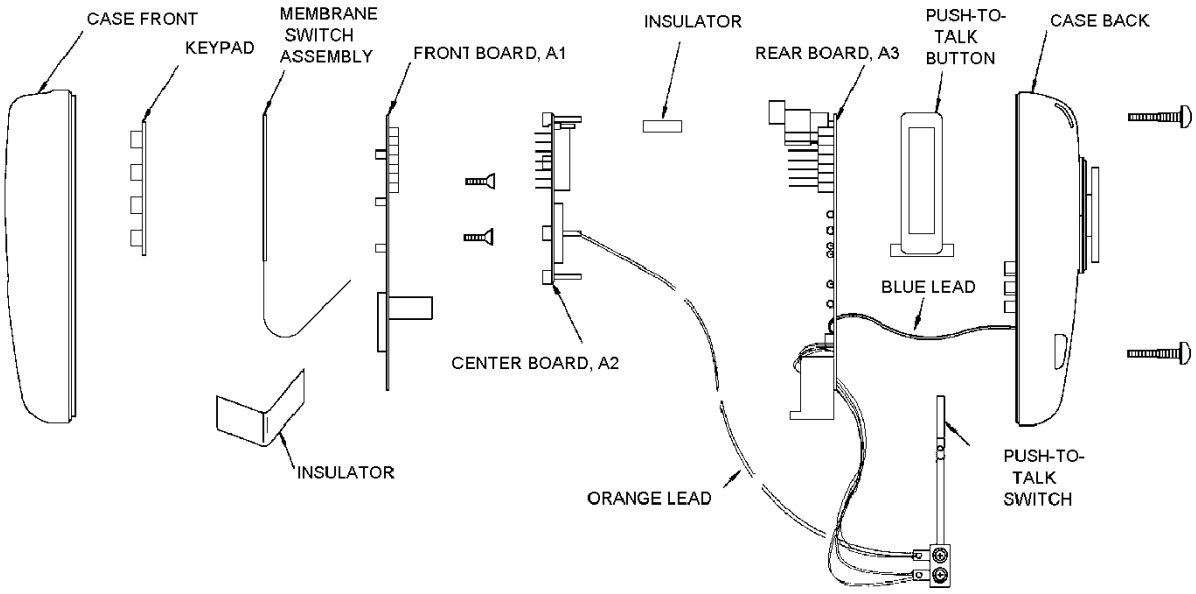


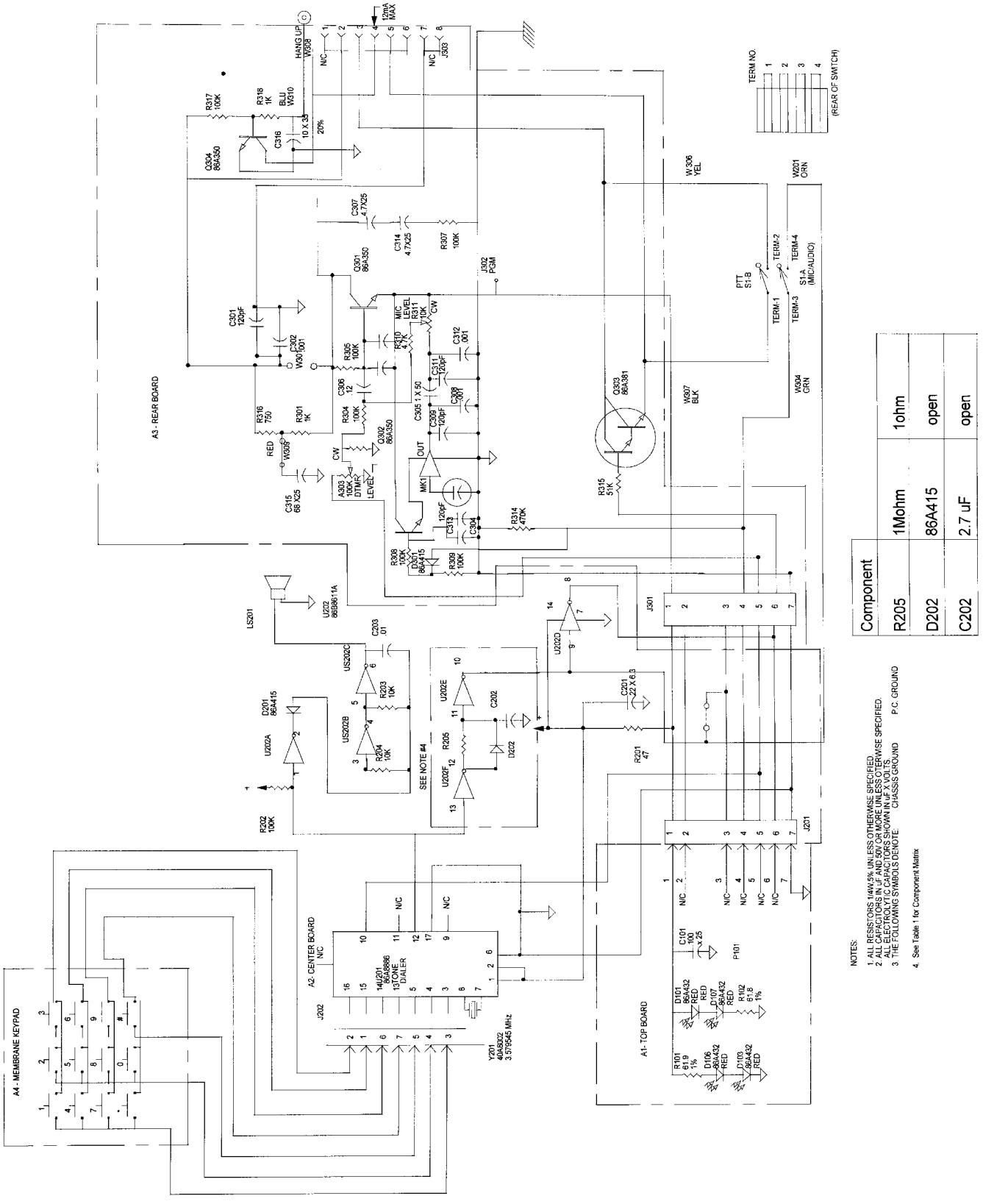
Figure 4 - Exploded View

REPLACEMENT PARTS

Cable and Modular Plug (Figure 4A) KRY 101 1637/21

OPTIONAL ACCESSORY

Mounting Bracket 344A4678P1



Component			
R205	1Mohm	1ohm	
D202	86A415	open	
C202	2.7 uF	open	

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Printed in U.S.A