1. **GENERAL INFORMATION**

**Description of Product**

1.01 The RT-3600 is a thirty-six code selective signaling unit. It provides common talk path intercom service for most Key Telephone Systems that use rotary, tone or mixed dialing.

**Manual Changes**

1.02 This document is reissued to change the warranty date from 18 months to 36 months.

**Federal Communications Commission (FCC) Regulations**

1.03 To comply with FCC regulations, the following requirements must be met:

- Upon installation, the FCC registration number of this unit must be reported to the telephone company.

- This unit must be installed by telephone company personnel or agents authorized under Part 68 of FCC Rules and Regulations.

- This unit must not be installed on coin-operated or party line telephones.

- If this unit malfunctions, the telephone company may disconnect service temporarily. If disconnection is necessary, the telephone company must attempt to notify the user in advance, if possible. If not, they must notify the user as soon as they are able.

- Repair work on this unit must be done by TCS.
RT-3600 KEY TELEPHONE UNIT

2. PRODUCT IDENTIFICATION

Application

2.01 The RT-3600 can be installed into most Key Telephone Systems that use both rotary dial and tone telephones. It is a self-contained intercom unit that requires no additional transfer circuitry.

Design Features

2.02 Electrical --
- Solid state design provides high reliability and low current demand.
- Operates over a wide input voltage range.
- Timed outputs for one second ringing after signal detection.
- Separate contacts for lamps and a spare function.

2.03 Physical --
- Mounting is standard KTU rack or wall mount.
- All connections are made through A25B or equivalent connector cable.
- Requires no field adjustments.
- Housing is built of durable plastic and includes installation instructions on its label.
- Requires only 2.8 cm (1 1/8") of KTU rack space.

2.04 Rotary Dial Decoder Features --
- Repeated signaling is possible without hookswitch operation if only one telephone is off-hook.
- Transfer is reset after ring-out.

2.05 Tone Decoder Features --
- Digital decoding process offers superior tone decoding.
- Repeated signaling is possible without hookswitch operation.
- Conference calls can be established while the system is in use.
- Transfer is reset after ring-out.

Specifications (Typical)

2.06 Operating Voltage: -20 to -28 VDC
2.07 Idle Current: < 55 mA @ 24 VDC
2.08 Operating Current: < 200 mA @ 24 VDC
2.09 Output Contacts: 50 VA
2.10 Pulse Speed: 8-11 PPS
2.11 Percent Break: 52 to 64%
2.12 Minimum Interdigital Time (rotary dial telephones): 200 ms
2.13 Signaling Time: 1 second
2.14 Maximum Loop: 600 ohms
2.15 Signal Level Input: -10 to +6 dBm
2.16 Bandwidth: ± 1.75% at 0 dBm
2.17 Twist: ± 6 dB
2.18 Detect Time: ≤ 40 ms
2.19 Minimum Interdigital Time: (tone telephones) 40 ms
2.20 Dimensions: 2.8 cm (1 1/8") W
X 14.9 cm (5 7/8") H
X 16.2 cm (6 3/8") D
2.21 Operating Temperature: 0° to 55° C
2.22 Operating Humidity Level: 0 to 95% noncondensive.
2.23 Connection: A25B connector or equivalent connector cable.
RT-3600 KEY TELEPHONE UNIT

3. INSTALLATION

Mounting the RT-3600

3.01 Plug the connector-ended A25B or equivalent type cable into the RT-3600 unit.

3.02 Secure the cable to the unit with the provided retaining bracket.

3.03 Using the built-in brackets, mount the unit on a standard KTU equipment rack with the provided #12-24 screws or on the wall with screws suitable for the wall material.

Wiring the RT-3600

3.04 Terminate the A25B cable (or equivalent) on a 66-type connector block.

3.05 Cross-connect Tip and Ring leads to all telephones, paging circuits, etc. Refer to the Connector Pin Out Index and the Installation Diagram at the end of this section.

3.06 Cross-connect 'R' and 'B' leads to the bell or buzzer of each telephone. Refer to Connector Pin Out Index for each station's designation.

3.07 Cross-connect 'L' and 'LG' leads to the lamp lines of each telephone.

3.08 Connect the following to the power supply:
   A) Aud. Sup. and Aud. Grd. to the ringing source.
   B) 'A' Bat. and 'A' Grd. to the talk (filtered) DC outputs.
   C) 'B' Bat. and 'B' Grd. to the signal (unfiltered) DC outputs.
   D) 'LB' to lamp battery and 'LG' to lamp ground. NOTE: 'LG' and 'PC' contacts close when the RT-3600 is seized and can be used to operate or latch an auxiliary circuit.

E) COMMON ALL GROUNDS AT THE POWER SUPPLY.

3.09 Do not bridge the RT-3600 to any line supplying a foreign source of power (C.O., F.X., P.L., etc.)

Testing the RT-3600

3.10 Conduct the following tests on all telephones connected to this RT-3600:
   A) Go off-hook with the telephone receiver. Verify that the line lamp lights.
   B) Check the talk path for side tone.
   C) Dial the designated code for the station being tested. Verify that the bell or buzzer operate correctly.
   D) Replace the receiver on the hookswitch. Verify that the line lamp goes out.
## RT-3600 KEY TELEPHONE UNIT

### 3. INSTALLATION (cont'd.)

#### 3.11 Connector Pin Out Index for the RT-3600 KTU

<table>
<thead>
<tr>
<th>DESIGNATION</th>
<th>CONNECTOR PIN #</th>
<th>CABLE COLOR</th>
<th>NOTES:</th>
</tr>
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<tbody>
<tr>
<td>TIP</td>
<td>26</td>
<td>WHT-BLU</td>
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</tr>
<tr>
<td>RING</td>
<td>1</td>
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<tr>
<td>PC (1)</td>
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<td>WHT-ORN</td>
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<tr>
<td>LG (1)</td>
<td>2</td>
<td>ORN-WHT</td>
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<tr>
<td>L (1)</td>
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<td>WHT-GRN</td>
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</tr>
<tr>
<td>LB (1)</td>
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<td>GRN-WHT</td>
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</tr>
<tr>
<td>R20</td>
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<td>WHT-BRN</td>
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</tr>
<tr>
<td>R0</td>
<td>4</td>
<td>BRN-WHT</td>
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</tr>
<tr>
<td>R21</td>
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<td>PC-ORN</td>
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</tr>
<tr>
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<td>ORN-RED</td>
<td>Preferred Connection Method</td>
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<tr>
<td>R22</td>
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<td>RED-BLU</td>
<td></td>
</tr>
<tr>
<td>R23</td>
<td>6</td>
<td>BLU-RED</td>
<td></td>
</tr>
<tr>
<td>R24</td>
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<td>RED-ORN</td>
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</tr>
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<td>ORN-RED</td>
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<td>R25</td>
<td>33</td>
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<td>R5</td>
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<td>R26</td>
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<td>RED-GRN</td>
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</tr>
<tr>
<td>R6</td>
<td>9</td>
<td>BRN-RED</td>
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<tr>
<td>R27</td>
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</tr>
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<td>R7</td>
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<td>SLT-RED</td>
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<tr>
<td>R28</td>
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<td>BLK-BLU</td>
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<td>R8</td>
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<td>R47</td>
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<tr>
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<td>R48</td>
<td>46</td>
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<td>R38</td>
<td>21</td>
<td>BLU-VIO</td>
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<tr>
<td>R49</td>
<td>47</td>
<td>VIO-ORN</td>
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<tr>
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<tr>
<td>'B' BAT. (3)</td>
<td>25</td>
<td>SLT-VIO</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
- Old Connection Method
  - (1) LB • L • LG • PC
- Preferred Connection Method
  - PC • LG • L • LB
- Contacts close in off-hook condition.
- Contact rating: 2 amps.
- (2) Talk Battery: -20 to -28 VDC, filtered.
- (3) Signal Battery: -20 to -28 VDC, unfiltered.
- (4) Signal Power Source (Aud.Sup.): Buzz battery or 105 VAC Ringer Supply.
RT-3600 KEY TELEPHONE UNIT

4. OPERATING INSTRUCTIONS

To place a call:

4.01 NOTE: Before attempting to place a call, verify that the intercom light on the key set is OFF. If it is ON, the intercom talk path is accessed and no new calls can be initiated.

4.02 Go off-hook with the station's receiver.

4.03 Depress the intercom key. Verify that it lights.

4.04 Dial the code of the station to be called.

4.05 When the called party answers, verify conversation path.

To repeat signaling:

4.06 If your party does not answer immediately after you place the call, you can signal again WITHOUT putting the telephone on-hook. To signal again, simply redial the station number with the telephone off-hook.

To receive a call:

4.07 When you receive a call through RT-3600, pick up your handset, depress the intercom key, and begin the conversation.

Conference Calls

4.08 To place a conference call (on tone-dial telephones only), establish a call to one party. Then either party already on line can dial the station code of the third party.

4.09 To establish a conference call that includes telephones with rotary dial, place a call to one party. Alert that party to a conference call. Then one of you must hang up your telephone. The remaining party calls the next party to be conferenced. After allowing time to establish the second call, the waiting party can simply go off-hook and join the call.

5. SERVICE INFORMATION

Warranty

5.01 Tone Commander Systems, Inc. warrants this product to be free from defects in materials and workmanship for 36 months from date of shipment. Damage to products resulting from physical abuse or electrical misuse voids this warranty. All units will be stamped on the day they are shipped with the warranty expiration date.

5.02 Out-of-Warranty units will be returned to full working order for a nominal handling charge plus parts, labor and transportation. A 90-day warranty covers repairs made on out-of-warranty units. A $15.00 handling charge will be assessed on all units, in- or out-of-warranty, that are returned and found to be free of defects.

Maintenance

5.03 No provision is made for field adjustment. As stated in the FCC regulations in 1.03, TCS does all repair work on the RT-3600. Therefore, if the RT-3600 is defective, do not attempt to repair it. Instead, disconnect it and return it to the factory for replacement.

Reordering And Returning Units

5.04 Write or call the factory to reorder or return units.

TONE COMMANDER SYSTEMS, INC.

4320 150th Avenue N.E.
Redmond, Washington 98052
Telephone: (206) 883-3600

Refer to RT-3600 Key Telephone Unit

Consumer Comment

5.05 Tone Commander Systems, Inc. is interested in your comments regarding our literature and equipment. Please address your remarks to the Systems Engineering Department.