The RAD-1A remote access device gives authorized users remote access to one way paging amplifiers, digital announcers and other audio programs. A programmable access code prohibits access by unauthorized users.

The RAD-1A answers on the first ring and disconnects on CPC, call time out, silence time out, busy, return to dial tone or by dialing #7. Separate 600 ohm audio and telephone line outputs are provided, allowing connection to audio amplifiers, digital announcers, or phone systems. The user does not have to hang up and redial the RAD-1A to access other features.

- Status LED turns on when the unit is active and brightens to indicate the presence of audio
- Programmable 6 digit security code
- Programmable 6 digit access code
- Separate 600 ohm audio and telephone line output
- Disconnects on CPC, call time out, silence time out, busy, return dial tone detection or by dialing #7
- Programmable 2 hour call timer
- Programmable 1-99 second silence timer
- Alternate screw terminal connection for telephone line out
- Connects phone line to the 600 ohm input/output of one-way paging amplifiers, digital announcers and other audio programs
- Relay contacts available for systems that need a dry contact closure (activate whenever the unit’s output is active)
- Non-volatile memory (no batteries required)

IMPORTANT: This product does not eliminate the possibility of toll fraud! To further protect against fraudulent calls, use with a TR-1 Toll Restrictor, for more info see DOD# 705.

Applications

Remote Access To:
- Paging systems (Viking’s PA-2A, PA-15, PA-30, PA-60)
- Digital announcers
- Advertisements, radio or church programs
- Audio monitoring for security purposes

Specifications

Power: Telephone Line Powered (24V DC 20mA minimum)
Dimensions: 133mm x 89mm x 44mm (5.25” x 3.5” x 1.75”)
Shipping Weight: 0.41 kg (0.90 lbs)
Environmental: 0°C to 32°C (32°F to 90°F) with 5% to 95% non-condensing humidity
Relay Contact Ratings: .5A @ 125VAC / 1A @ 30VDC
Audio Loss (through unit): 1 dB
Connections: (2) RJ11 modular jacks, 7-position screw terminal strip

www.vikingelectronics.com
Information: (715) 386-8861
**Installation and Applications**

**IMPORTANT:** Electronic devices are susceptible to lightning and power station electrical surges from both the AC outlet and the telephone line. It is recommended that a surge protector be installed to protect against such surges.

Connect your local incoming line to the modular jack labeled **PHONE LINE IN** and connect the modular jack labeled **PHONE LINE OUT** to an unused analog station, telephone line or 600 ohm audio device. Some typical applications are shown in the following sections.

### A. Access Simple One Way Paging Systems

The RAD-1A can be used to access paging systems remotely. The RAD-1A can hang-up on silence. Use a low value like 2 or 3 seconds for the silence time out setting (see **Programming** section **D**). If no audio is detected in the programmed amount of time, the RAD-1A will disconnect.

### B. Access One Way Paging Systems with Background Music Sources

The RAD-1A can be used to access paging systems remotely. If the RAD-1A is to be used with a paging system that requires Touch Tone zone selections, the RAD-1A can be set to ignore Touch Tones. Setting DIP switch 1 to the **ON** position (see below) will disable the RAD-1A’s ability to see Touch Tones so commands are only seen by the paging system. Be sure to set DIP switch 1 to the **OFF** position if additional programming is needed.
C. Monitoring Church services

Multiple RAD-1A’s can be used for Church Service monitoring (one unit for each incoming phone line). In this mode, if CPC is not available, set the maximum call timer to a value slightly longer than the Church service (see Programming section D). Note: Dipswitch 4 should be in the ON position to insure compliance with FCC part 68 Requirements.

D. Single Line 7.5 Minute Digital Announacer

In this application, the RAD-1A will answer the line and trigger the message on the DVA-2WA to play from the beginning. The RAD-1A Call Timer (if used) must be programmed to a time long enough for the DVA-2WA to play its entire message (see Programming section D). Note: For this application, switch 5 on the DVA-2WA must be ON. See the DVA-2WA Product Manual, DOD# 110.
E. Line Extender
The RAD-1A can be used to access another line remotely. See Application Note 874. Note: For best performance, the RAD-AMP is recommended, see DOD# 415 for more information.

F. Remote Service Operation
The RAD-1A can be used to access the SO-24A Service Observing unit. See Application Note 874. Note: For best performance, the RAD-AMP is recommended, see DOD# 415 for more information.

G. Access PABX Features (DISA)
The RAD-1A can be used to access your phone system remotely. See Application Note 874. Note: For best performance, the RAD-AMP is recommended, see DOD# 415 for more information.

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Programming

A. Accessing the Programming Mode
The RAD-1A can be programmed from any Touch Tone phone using a C.O. line, analog PABX/KSU station, or a DLE-200B Line Simulator, see DOD# 605 for more information. Note: While programming, if no Touch Tones are entered for 20 seconds, the RAD-1A will give 3 beeps and disconnect.

1. Using the Security Code

<table>
<thead>
<tr>
<th>Step 1.</th>
<th>From the Touch Tone phone, call the line attached to the RAD-1A’s PHONE LINE IN jack.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2.</td>
<td>When the RAD-1A answers, enter *, plus the 6 digit security code (factory set to 845464, see Section B). A double beep should then be heard indicating you have entered the programming mode.</td>
</tr>
</tbody>
</table>

2. Without the Security Code

<table>
<thead>
<tr>
<th>Step 1.</th>
<th>Set DIP switch 3 to ON as shown on page 5. Incoming calls will enter the Programming mode without a security code.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2.</td>
<td>From a Touch Tone phone, call the line attached to the RAD-1A’s PHONE LINE IN jack.</td>
</tr>
<tr>
<td>Step 3.</td>
<td>When the RAD-1A answers, a double beep will be heard and the RAD-1A will automatically enter the programming mode.</td>
</tr>
<tr>
<td>Step 4.</td>
<td>When finished programming, set DIP switch 3 back to OFF.</td>
</tr>
</tbody>
</table>

B. Security Code
The security code allows the user/installer to program the RAD-1A. The factory set security code is 845464 (V-I-K-I-N-G). It is recommended that the factory security code be changed. Note: The security code must be 6 digits and cannot include a * or a #.

Example: To store 123456 as the security code:

<table>
<thead>
<tr>
<th>Step 1.</th>
<th>Access programming as shown in Programming section A above.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2.</td>
<td>Enter 123456 #47.</td>
</tr>
<tr>
<td>Step 3.</td>
<td>Hang-up.</td>
</tr>
</tbody>
</table>

Enter Your Security Code Here: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] #47
C. DIP Switch Settings

<table>
<thead>
<tr>
<th>Switch</th>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON</td>
<td>Disable all DTMF (Touch Tone) detection</td>
</tr>
<tr>
<td>1</td>
<td>OFF</td>
<td>Enable all DTMF (Touch Tone) detection (factory default)</td>
</tr>
<tr>
<td>2</td>
<td>ON</td>
<td>Operating Features require ##</td>
</tr>
<tr>
<td>2</td>
<td>OFF</td>
<td>Operating Features require # only (factory default)</td>
</tr>
<tr>
<td>3</td>
<td>ON</td>
<td>No security code required to enter the programming mode</td>
</tr>
<tr>
<td>3</td>
<td>OFF</td>
<td>Security code required to enter the programming mode (factory default)</td>
</tr>
<tr>
<td>4</td>
<td>ON</td>
<td>Prevents audio amplitude at line in from exceeding FCC Part 68 limits (factory default)</td>
</tr>
<tr>
<td>4</td>
<td>OFF</td>
<td>Audio amplitude at line in is not limited</td>
</tr>
</tbody>
</table>

Note: DIP switches are shown in factory default positions.

D. Programming and Remote Access Features (requires a Touch Tone Phone)

If a valid Touch Tone sequence is entered while programming, a double beep will be heard. Three beeps indicate an error. To begin programming, call the RAD-1A. When the RAD-1A answers, you have 20 seconds to enter * followed by your 6 digit security code (a double beep should be heard). The RAD-1A may now be programmed.

Note: While programming, if no Touch Tones are entered for 20 seconds, the RAD-1A will give 3 beeps and disconnect.

<table>
<thead>
<tr>
<th>Programming Features</th>
<th>Enter Digits</th>
<th>+ Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security code (6 digits 0-9) (factory set to 845464)</td>
<td>6 digits</td>
<td>+ #47</td>
</tr>
<tr>
<td>Access Code (6 digits, 0-9, no digits disables) (factory disabled)</td>
<td>6 digits</td>
<td>+ #45</td>
</tr>
<tr>
<td>Call timer (0-1 hours, 00-59 minutes, 00-59 seconds) (3 second minimum) (factory disabled)</td>
<td>5 digits</td>
<td>+ #48</td>
</tr>
<tr>
<td>Silence Time Out (01 - 99 seconds) (factory disabled)</td>
<td>2 digits</td>
<td>+ #49</td>
</tr>
<tr>
<td>Alert tones on (factory default)</td>
<td>* 9</td>
<td></td>
</tr>
<tr>
<td>Alert tones off</td>
<td>* 0</td>
<td></td>
</tr>
<tr>
<td>Connection beeps (0 = after lines are connected (default), 1 = before lines are connected)</td>
<td>0 or 1</td>
<td>+ #50</td>
</tr>
<tr>
<td>Return dial tone detection (0 = disabled (default), 1 = enabled)</td>
<td>0 or 1</td>
<td>+ #51</td>
</tr>
<tr>
<td>Exit programming and disconnect</td>
<td>#7</td>
<td></td>
</tr>
<tr>
<td>Set all programming features to factory settings</td>
<td>###</td>
<td></td>
</tr>
</tbody>
</table>

Note: To disable or eliminate the use of any of the above features, enter the # + location number (45, 48, or 49) without any proceeding numbers.)
The **RAD-1A** allows remote access to any 600 ohm audio device. This can be very useful for remote access to paging systems. The **RAD-1A** will answer an incoming call on the first ring. The **RAD-1A** offers either unsecured access, or secured access to the 600 Ohm input/output of one-way paging amplifiers, digital announcers and other audio programs.

### A. Unsecured Access

If the access code has not been programmed, the unit is “Unsecured.” In this mode, the **RAD-1A** answers the inbound call, double beeps (if alert tones are ON), and bridges the line to the device connected to the **RAD-1A**’s output.

### B. Secured Access (Dip Switch 1 OFF)

When an access code has been programmed, the **RAD-1A** answers the inbound call and prompts the caller with a single beep. The caller is then required to enter a 6 digit access code. If the proper access code is not entered within 20 seconds, the **RAD-1A** will triple beep and hang up. When a valid access code has been entered, the **RAD-1A** will double beep (if alert tones are ON) and bridge the line to the device connected to the **RAD-1A**’s output.

*Important*: It is crucial that the installer and system owner understands the functions and capabilities of both the **RAD-1A** and the lines and/or PABX stations connected to the **RAD-1A**, so that any and all toll fraud and other system abuse possibilities are understood. This enables the installer and owner to make risk managing decisions about the system into which the **RAD-1A** is installed. Viking Electronics Inc. is not able to assume responsibility since it is a function of the entire system assembled by the installer/owner. A Viking **TR-1** Toll Restrictor may be added to help prevent toll abuse if the PABX and **RAD-1A** toll restriction is not adequate, see DOD# 705 for more information.
Promote Your Business While Customers Hold and more ...

The DVA-2WA is a digital announcer with a built in 2 watt amplifier. Designed to provide music and promotion on hold, the DVA-2WA can playback in a continuous loop or alternate between promotions and an auxiliary music source in timed intervals. Any number of multiple messages may be recorded.

The announcer comes with four professionally pre-recorded promotion on hold messages, a power supply and cabling for an easy plug and play installation.

The output of the DVA-2WA may also be connected directly to loudspeakers for repeated messages or played at the push of a button for museum displays, information booths, point of interest locations, retail applications, etc.

The DVA-2WA’s non-volatile memory eliminates the need for batteries or costly built in tape decks. This provides the convenience of recording at the shop or professional studio and then shipping to the installation site.

Add Paging and Multiple Line Loud Ringing to Any Phone System

The PA-2A provides loud ringing and paging to electronic key systems, 1A2 Key systems, PABX’s as well as No-KSU phones and multiline phones.

Paging is accomplished by connecting the PA-2A to a paging port or unused telephone line input (trunk port) of nearly any phone system.

The PA-2A will also generate adjustable loud ringing from up to 6 analog lines or from a dry contact closure. Either a loud electronic warble, or one of three other soft chime sounds may be selected. An external “night transfer” switch can be added to turn loud ringing on or off in night bell applications.

The PA-2A is easy to install and eliminates the installation of multiple bells, relays and paging cards.

For more info, see DOD# 110

For more info, see DOD# 485