



# TECHNICAL Practice

**TELECOM SOLUTIONS FOR THE 21ST CENTURY**

**RAD-AMP**  
Amplified Remote  
Access Device

June 24, 2002

## Extend Your Phone System's Features and Forward Calls to Telecommuters

The **RAD-AMP** extends the usefulness of your phone system to remote employees, as well as providing call forwarding to remote employees or locations.

As a line extender, the **RAD-AMP** provides authorized users remote access to PABX, Centrex or Electronic Key system features.

As a call diverter, the **RAD-AMP** provides call forwarding from one location to another. After detecting an inbound call, the **RAD-AMP** accesses a second phone line, dials a preprogrammed Touch Tone number, and then bridges the two lines.

As a Telecommuting extender, the **RAD-AMP** gives remote workers access to most PABX/KSU features from their home or cell phone. The home based employee hears a special tone when answering and has the option of taking the work related call. Remote call center personnel can "Log-In" and Log-Out" or change their forwarding number as their location changes. Using Touch Tones, remote workers can use phone system features to transfer the call to another extension or voice mail, start a conference call, generate a page or any other feature available to an analog PABX/KSU extension.



**This product does not eliminate the possibility of toll fraud! To further protect against fraudulent calls, use with a TR-1 Toll Restrictor (Fax Back Document 705).**

## Features

### Standard Features

- Improved audio amplifier
- Programmable 6 digit security code
- Programmable ring delay
- Remote night switch
- Disconnects on CPC, busy, return dial tone, maximum call time or by dialing #7
- Non-volatile memory (no batteries required)
- Auxiliary dry contacts
- Programmable 15 second to 49.5 minute call timer
- Compatible with analog stations on PABX and KSU systems
- Simple programmable toll restriction

### Line Extender

- Access code(s)
- 500 ms hook switch flash command
- 2 second disconnect command

### Call Diverter

- 32 digit phone number memory

### Telecommuting Extender

- Log-In and Log-Out capability
- Special tone notifies of work related calls
- Supports PABX/KSU features (transfers, voicemail, paging, etc.) to remote employees

## Applications

### Line Extender

- Bridge calling zones
- Utilize inexpensive WATS, FX or TIE lines
- Remotely access paging amplifiers (**PA-2A**, **HF-3W**) or service observers (**SO-24A**)
- Remote audio monitoring of radio or church programs and security sites

### Call Diverter

- Forward calls to voice mail or dictation equipment
- Eliminate C.O. "Call forwarding" charges
- Forward after hours calls to "on call" employees or answering services

### Telecommuting Extender

- Home based call center personnel
- Outside sales staff
- Traveling executives and personnel

**Phone... 715.386.8861**

**<http://www.vikingelectronics.com>**

## Specifications

**Power:** 120VAC/13.8VAC 1.25A UL listed adapter provided

**Dimensions:** 133mm x 130mm x 38mm (5.25" x 5.1" x 1.5")

**Weight:** 1.0 Kg (2 lbs 3 oz.)

**Environmental:** 0°C to 32°C (32°F to 90°F) with 5% to 95% non-condensing humidity

**Connections:** (2) RJ11 modular jacks

**Amplification:** Factory set to 3dB of audio gain

# Definitions

**Line Extender:** The mode of operation in which the **RAD-AMP** provides remote access to an analog station of a PABX, KSU or a second C.O. line. This is ideal for bridging long distance areas or allowing remote employees to use company lines for toll calls.

**Call Diverter:** The mode of operation in which the **RAD-AMP** forwards a call to a pre-programmed phone number.

**Telecommuting Extender:** The mode of operation in which the **RAD-AMP** forwards calls to one of nine pre-programmed numbers as well as providing remote access to an analog PABX/KSU station or C.O. line, including all features available to that station or C.O. line.

**Security Code:** The code programmed into the **RAD-AMP** that allows access to all programming features.

**Priority 1 Access Code:** The code programmed into the **RAD-AMP** that allows a remote user to have complete access to the PABX or KSU including outside toll calls.

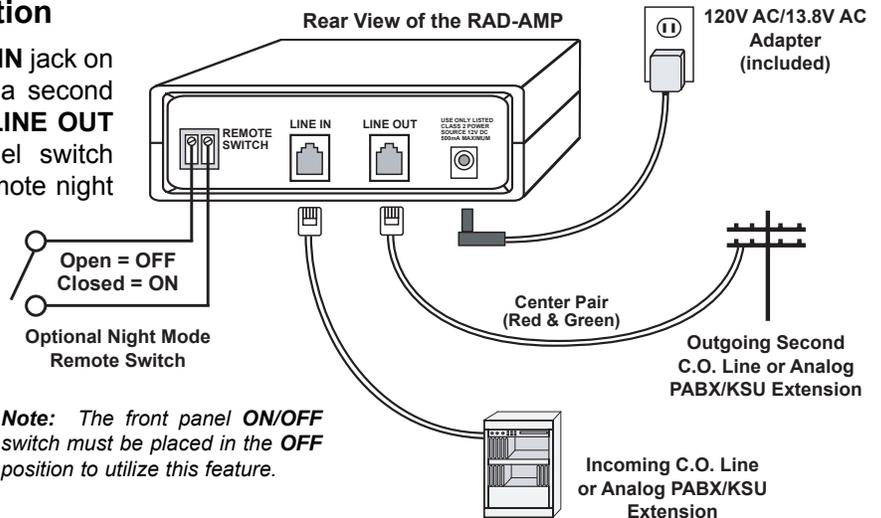
**“Priority 2” Access Code:** The code programmed into the **RAD-AMP** that allows a remote user to have limited access to the PABX or KSU, effectively blocking outside line access.

# Installation

## A. Line Extender/Call Diverter Installation

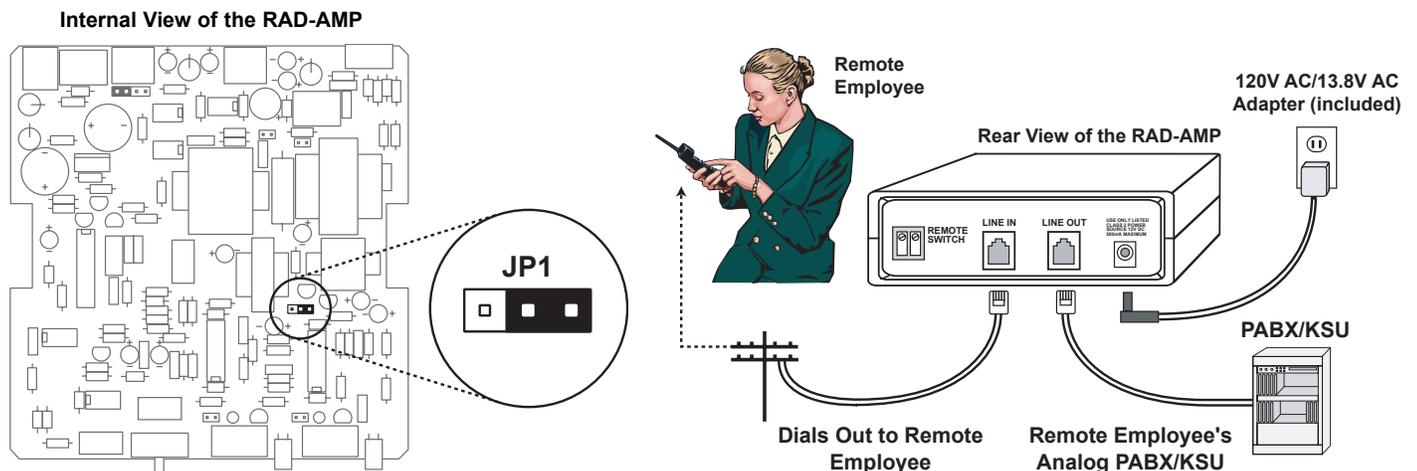
Connect the incoming phone line to the **LINE IN** jack on the back panel of the **RAD-AMP**. Connect a second phone line or 600 ohm audio device to the **LINE OUT** jack. For normal operation, the front panel switch should be set to the ON position and the remote night switch contacts must be open.

**Note:** The **RAD-AMP** is factory configured as a “Line Extender”. To change the mode of operation or operating parameters, see the “Programming” section and follow the specific programming section for the desired mode (Line Extender, Call Diverter or Telecommuting Extender).



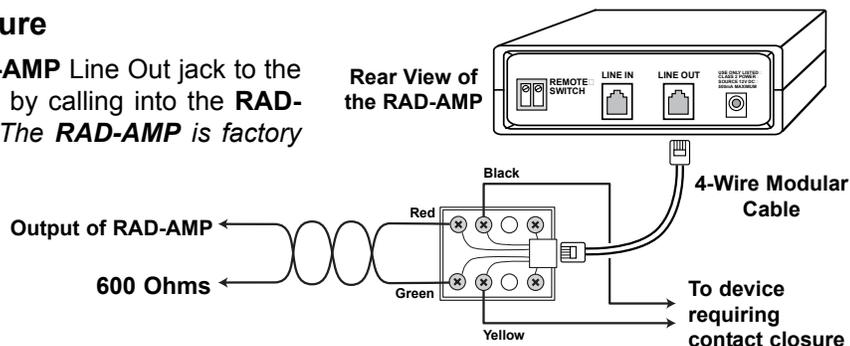
## B. Telecommuting Extender Installation

To utilize the Telecommuting extender mode for remote employees, the **RAD-AMP** must be installed as shown below and an internal shunt must be set to the correct position before programming the unit.



## C. Installing the Auxiliary Contact Closure

Connect a 4-wire modular cord from the **RAD-AMP** Line Out jack to the 625A jack. Test the contact closure operation by calling into the **RAD-AMP** and verifying proper operation. **Note:** *The RAD-AMP is factory configured with this feature disabled. To activate this feature see section F in Programming. The Red-Green pair is the outgoing line of the RAD-AMP, while the Yellow-Black pair provides the auxiliary contact closure.*



# Programming

## A. Line Extender Mode

To access programming in the “Line Extender” mode, call into the **LINE IN** port. After the **RAD-AMP** answers, enter a \* followed by the security code, factory set to V-I-K-I-N-G (**845464**). The **RAD-AMP** will beep twice indicating that programming has been accessed. It is recommended that the factory security code be changed. While programming, if 20 seconds elapse between Touch Tones, the **RAD-AMP** will disconnect. All valid Touch Tone programming sequences are acknowledged with a double beep. A triple beep indicates that a mistake has been made. **Note:** *If a “Priority 2” access code is used, program the “PABX outside line number” with the Touch Tone required to access a C.O. line from a PABX extension.*

### Line Extender Quick Programming Features

|  | Enter Digits | - then - | Enter Memory Location |
|--|--------------|----------|-----------------------|
| Set the <b>RAD-AMP</b> to Line Extender mode (factory set)                       | * 1          |          |                       |
| Set the <b>RAD-AMP</b> to Call Diverter mode (see section B)                     | * 2          |          |                       |
| Set the <b>RAD-AMP</b> to Telecommuting Extender mode (see section C)            | * 3          |          |                       |
| Security code (6 digits 0-9) (factory set to 845464)                             | 6 digits     | then     | # 47                  |
| “Priority 1” access code (enter 6 digits, no digits disables) (factory disabled) | 6 digits     | then     | # 45                  |
| “Priority 2” access code (enter 6 digits, no digits disables) (factory disabled) | 6 digits     | then     | # 46                  |
| PABX outside line number (enter 1 digit, no digit disables) (factory set to 9)   | 1 digit      | then     | # 44                  |
| SO-24A mode enabled (see <b>Operation</b> section D)                             | * *          |          |                       |
| SO-24A mode disabled (factory setting, see <b>Operation</b> section D)           | * #          |          |                       |
| Maximum call timer (enter 2 digits*, no digits disables - factory disabled)      | 2 digits     | then     | # 48                  |
| Ring delay (1-9) (factory set to 1)  | 1 digit      | then     | # 49                  |
| Alert tones On (call progress beeps) (factory enabled)                           | * 9          |          |                       |
| Alert tones Off  | * 0          |          |                       |
| Enable dial tone detection (for installations without CPC or busy signal)        | * 5          |          |                       |
| Disable dial tone detection (factory setting)                                    | * 6          |          |                       |
| Exit programming and disconnect  | # 7          |          |                       |
| Set all programming features to factory settings                                 | ###          |          |                       |

\* **Note:** *Call timer digits specified as follows: 00 = 15 seconds, 01-99 = .5 - 49.5 minutes in .5 minute increments.*

## B. Call Diverter Mode

To access programming in the “Call Diverter” mode, call into the **LINE IN** port. After the called party answers, enter a \* followed by the security code, factory set to V-I-K-I-N-G (**845464**). The **RAD-AMP** will beep twice indicating that programming has been accessed. It is recommended that the factory security code be changed. While programming, if 20 seconds elapses between Touch Tones, the **RAD-AMP** will disconnect. All valid Touch Tone programming sequences are acknowledged with a double beep. A triple beep indicates that a mistake has been made.

### Call Diverter Quick Programming Features

|   | Enter Digits | - then - | Enter Memory Location |
|---|--------------|----------|-----------------------|
| Set the <b>RAD-AMP</b> to Line Extender mode (see section A)                | * 1          |          |                       |
| Set the <b>RAD-AMP</b> to Call Diverter mode                                | * 2          |          |                       |
| Set the <b>RAD-AMP</b> to Telecommuting Extender mode (see section C)       | * 3          |          |                       |
| Security code (6 digits 0-9) (factory set to 845464)                        | 6 digits     | then     | #47                   |
| Call Diverter number (1-32 digits)  | 1-32 digits  | then     | # 00                  |
| To enter a “*” in the Call Diverter number                                  | * *          |          |                       |
| To enter a “#” in the Call Diverter number                                  | * #          |          |                       |
| To enter a 1 second pause in the Call Diverter number                       | * 8          |          |                       |
| Maximum call timer (enter 2 digits*, no digits disables - factory disabled) | 2 digits     | then     | # 48                  |
| Ring delay (1-9) (factory set to 1)   | 1 digit      | then     | # 49                  |
| Enable dial tone detection (for installations without CPC or busy signal)   | * 5          |          |                       |
| Disable dial tone detection (factory setting)                               | * 6          |          |                       |
| Exit programming and disconnect   | # 7          |          |                       |
| Set all programming features to factory settings                            | ###          |          |                       |

\* **Note:** *Call timer digits specified as follows: 00 = 15 seconds, 01-99 = .5 - 49.5 minutes in .5 minute increments.*

### C. Telecommuting Extender Mode (Remote Employee)

To access programming in the “Telecommuting Extender” mode, call into the **LINE IN** port. After the **RAD-AMP** answers, enter a **\*** followed by the security code, factory set to V-I-K-I-N-G (**845464**). The **RAD-AMP** will beep twice indicating that programming has been accessed. It is recommended that the factory security code be changed. While programming, if 20 seconds elapses between Touch Tones, the **RAD-AMP** will disconnect. All valid Touch Tone programming sequences are acknowledged with a double beep. A triple beep indicates that a mistake has been made. **Note:** If a “Priority 2” access code is used, program the “PABX outside line number” with the Touch Tone required to access a C.O. line from a PABX extension.

| <b>Telecommuting Extender Quick Programming Features</b>                         | <b>Enter Digits</b> | <b>- then -</b> | <b>Enter Memory Location</b> |
|--|---------------------|-----------------|------------------------------|
| Set the <b>RAD-AMP</b> to Line Extender mode (see section <b>A</b> )             | <b>* 1</b>          |                 |                              |
| Set the <b>RAD-AMP</b> to Call Diverter mode (see section <b>B</b> )             | <b>* 2</b>          |                 |                              |
| Set the <b>RAD-AMP</b> to Telecommuting Extender mode                            | <b>* 3</b>          |                 |                              |
| Security code (6 digits 0-9) (factory set to 845464)                             | 6 digits            | then            | <b>#47</b>                   |
| Priority 1 access code (enter 6 digits, no digits disables) (factory disabled)   | 6 digits            | then            | <b>#45</b>                   |
| “Priority 2” access code (enter 6 digits, no digits disables) (factory disabled) | 6 digits            | then            | <b>#46</b>                   |
| PABX outside line number (enter 1 digit, no digit disables) (factory set to 9)   | 1 digit             | then            | <b>#44</b>                   |
| First remote phone number (1-32 digits each)                                     | 1-32 digits         | then            | <b>#01</b>                   |
| Second remote phone number (1-32 digits each)                                    | 1-32 digits         | then            | <b>#02</b>                   |
| Third remote phone number (1-32 digits each)                                     | 1-32 digits         | then            | <b>#03</b>                   |
| Fourth remote phone number (1-32 digits each)                                    | 1-32 digits         | then            | <b>#04</b>                   |
| Fifth remote phone number (1-32 digits each)                                     | 1-32 digits         | then            | <b>#05</b>                   |
| Sixth remote phone number (1-32 digits each)                                     | 1-32 digits         | then            | <b>#06</b>                   |
| Seventh remote phone number (1-32 digits each)                                   | 1-32 digits         | then            | <b>#07</b>                   |
| Eighth remote phone number (1-32 digits each)                                    | 1-32 digits         | then            | <b>#08</b>                   |
| Ninth remote phone number (1-32 digits each)                                     | 1-32 digits         | then            | <b>#09</b>                   |
| To enter a <b>*</b> in the remote phone number                                   | <b>* *</b>          |                 |                              |
| To enter a <b>#</b> in the remote phone number                                   | <b>* #</b>          |                 |                              |
| Supervised call forwarding (factory enabled)                                     | <b>* 4</b>          |                 |                              |
| Un-supervised call forwarding  | <b>* 7</b>          |                 |                              |
| To enter a 1 second pause in the remote phone number                             | <b>* 8</b>          |                 |                              |
| Maximum call timer (enter 2 digits*, no digits disables - factory disabled)      | 2 digits            | then            | <b># 48</b>                  |
| Ring delay (1-9) (factory set to 1)  | 1 digit             | then            | <b># 49</b>                  |
| Alert tones On (call progress beeps) (factory enabled)                           | <b>* 9</b>          |                 |                              |
| Alert tones Off  | <b>* 0</b>          |                 |                              |
| Enable dial tone detection (for installations without CPC or busy signal)        | <b>* 5</b>          |                 |                              |
| Disable dial tone detection (factory setting)                                    | <b>* 6</b>          |                 |                              |
| Exit programming and disconnect  | <b># 7</b>          |                 |                              |
| Set all programming features to factory settings                                 | <b>###</b>          |                 |                              |

\* **Note:** Call timer digits specified as follows: 00 = 15 seconds, 01-99 = .5 - 49.5 minutes in .5 minute increments.

### D. Programming Examples

#### 1. Line Extender Mode

| <b>Programming the RAD-AMP to...</b>         | <b>Enter Digits</b> |
|--|---------------------|
| 1. ...be in the Line Extender mode           | <b>* 1</b>          |
| 2. ...set the PABX outside line number to 9  | <b>9 #44</b>        |
| 3. ...set “Priority 2” access code to 345678 | <b>345678 #46</b>   |
| 4. ...disable “Priority 1” access code       | <b>#45</b>          |
| 5. ...set the call timer to 20 minutes       | <b>40 #48</b>       |

#### 2. Call Diverter Mode

| <b>Programming the RAD-AMP to...</b>                                   | <b>Enter Digits</b>     |
|--|-------------------------|
| 1. ...be in the Call Diverter mode                                     | <b>*2</b>               |
| 2. ...set the call diverter number to 1-715-386-8861 (up to 32 digits) | <b>17153868861 #00</b>  |
| 3. ...dial 9 (for outside line), pause 1 second, then dial 386-8861    | <b>9 *8 3868861 #00</b> |

#### 3. Telecommuting Extender Mode

| <b>Programming the RAD-AMP to...</b>                | <b>Enter Digits</b>    |
|---|------------------------|
| 1. ...be in the Telecommuting Extender mode         | <b>* 3</b>             |
| 2. ...set the first remote number to 1-715-386-8861 | <b>17153868861 #01</b> |
| 3. ...set the PABX outside line number to 9         | <b>9 #44</b>           |
| 4. ...set “Priority 1” access code to 123456        | <b>123456 #45</b>      |
| 5. ...clear the “Priority 2” access code            | <b>#46</b>             |

## E. Security Bypass Mode

This mode is useful if you have forgotten your security code and need to enter programming, but requires you to be at the physical location of the **RAD-AMP**.

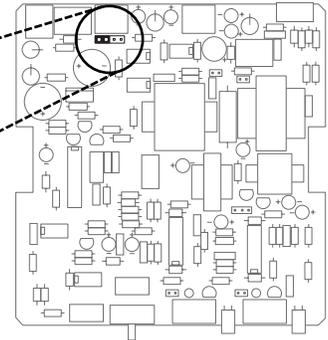
|                |   |
|----------------|---|
| <b>Step 1.</b> | To enter this mode, call into the <b>RAD-AMP</b> .      |
| <b>Step 2.</b> | When it answers, slide the front panel switch to "OFF." |
| <b>Step 3.</b> | Then dial *. Two beeps will be heard.                   |
| <b>Step 4.</b> | Enter you new security code (6 digits + #47).           |
| <b>Step 5.</b> | Enter any other programming desired.                    |
| <b>Step 6.</b> | When finished, hang-up.                                 |
| <b>Step 7.</b> | Slide the front panel switch to "ON."                   |

## F. Auxiliary Dry Contact Closure

The **RAD-AMP** can provide an auxiliary dry contact closure for systems that require it. To utilize this feature, an internal shunt must be set to the correct position. **Important:** *Electronic components are sensitive to static electricity. Personnel and the work area should be grounded before handling.*

|                |  |
|----------------|--|
| <b>Step 1.</b> | Disconnect the power and telco cables.                                     |
| <b>Step 2.</b> | Remove the two screws on the bottom of the chassis and take off the cover. |
| <b>Step 3.</b> | Locate and configure <b>JP2</b> as shown in the diagram.                   |
| <b>Step 4.</b> | Follow the instructions as shown in <b>Installation</b> section <b>C</b> . |

| Position | Description                | Diagram |
|----------|----------------------------|---------|
| <b>A</b> | Disabled (factory default) |         |
| <b>B</b> | Normally closed            |         |
| <b>C</b> | Normally open              |         |



## Operation

When configured as a Line Extender, the **RAD-AMP** allows remote access to a loop start C.O. line, an analog PABX station or any other 600 ohm audio device. This is useful for many applications including access to inexpensive WATS lines (line extending), remote access to PABX/KSU features (DISA), or remote service observing using **Viking's SO-24A**.

When configured as a Call Diverter, the **RAD-AMP** forwards all incoming calls to a pre-programmed number on a second line.

When configured as a Telecommuting Extender, the **RAD-AMP** allows an employee to work from a remote location by providing most PABX features to be utilized from their home or cell phone.

All programming features, including mode of operation, access codes, security codes, call timers, alert tones and phone numbers are programmable from a standard Touch Tone phone (see **Programming**). The **RAD-AMP** provides a remote night mode contact input, which can be connected to a remote switch or a dry contact closure provided by your phone system. This allows remote operation to enable or disable the **RAD-AMP** (see **Installation**). **Note:** *The front panel On/Off switch must be placed in the Off position to utilize this feature.* The **RAD-AMP** also provides an auxiliary dry contact closure for user specified applications.

**Important:** *It is crucial that the installer and system owner understands the functions and capabilities of both the **RAD-AMP** and the lines and/or PABX stations connected to the **RAD-AMP**, 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 in which the **RAD-AMP** is put into. 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 toll restriction is not adequate.*

## A. Line Extender

When the **RAD-AMP** is configured as a Line Extender, it will always answer an incoming call after the programmed ring delay. In the "Line Extender" mode, the **RAD-AMP** offers either unsecured access, or two levels of secured access, designated "Priority 1" and "Priority 2." "Priority 1" access may be used in applications where the **RAD-AMP's** outbound line is either a CO line or a PABX extension, whereas the "Priority 2" access mode is specific to applications where the **RAD-AMP's** outbound line is a PABX extension.

### 1. Unsecured Access

If neither the "Priority 1", nor the "Priority 2" access codes have been programmed, the unit is "Unsecured." In this mode, the **RAD-AMP** answers the inbound call, double beeps, bridges the lines together, and the caller is given full and immediate access to the outbound line. The caller may then dial without restriction. Anybody that calls into the **RAD-AMP** is given an extended line.

### 2. Priority 1 (unlimited) Access

When a "Priority 1" access code has been programmed, the **RAD-AMP** 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 an access code is not entered within 20 seconds, the **RAD-AMP** will triple beep and hang up. When a valid access code has been entered, the **RAD-AMP** will double beep and bridge the lines together providing access to the opposite line port. Anybody that calls into the **RAD-AMP** and successfully dials the "Priority 1" access code has unlimited access to the extended line.

### 3. Priority 2 (limited) Access

This mode is specific to PABX applications. When a "Priority 2" access code has been programmed, the **RAD-AMP** 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 an access code is not entered within 20 seconds, the **RAD-AMP** will triple beep and hang up. When a valid "Priority 2" access code has been entered, the **RAD-AMP** will double beep and bridge the lines together providing access to the opposite line port. The caller is then given limited access, and may only dial extensions and features within the PABX. If the caller attempts to dial the PABX outside line number (programmable, but typically a 9) to place a call outside of the PABX, the caller will hear a triple beep and be immediately disconnected. This effectively prevents toll fraud and system abuse. **Important:** *If the PABX utilizes any special direct trunk access codes in addition to the outside line number, the **RAD-AMP** can not prevent toll fraud and system abuse on a "Priority 2" access call.*

### 4. Disconnect

For disconnect, the **RAD-AMP** senses busy signals, return dial tone (if enabled), maximum call time (if enabled), the Touch Tone command **#7** or a CPC break on either port. In addition, the **RAD-AMP** will flash the **LINE OUT** port for 500ms when the Touch Tone command **#1** is entered and disconnect the **LINE OUT** port for 2 seconds, when the Touch Tone command **#2** is entered.

**Note:** *The "Priority 1" and "Priority 2" access codes can work well together. As an example, one group of users can be given the "Priority 2" access code, and hence only have the ability to dial within the PABX system. Another group of trusted users (supervisors, for example) could be given the "Priority 1" access code, and thus have unrestricted remote access to the PABX system, including outbound dialing.*

## B. Call Diverter

When the **RAD-AMP** is configured as a Call Diverter and inbound ringing is detected on the **LINE IN** port, the **RAD-AMP** will dial the user programmed phone number (see **Programming**) on the **LINE OUT** port, answer the **LINE IN** port, and bridge the two ports together for a nearly transparent transfer. For disconnect, the **RAD-AMP** senses busy signals, return dial tone (if enabled), maximum call time (if enabled), the Touch Tone command **#7** or a CPC break on either port.

## C. Telecommuting Extender

When the **RAD-AMP** is configured as a Telecommuting Extender, it can be programmed to provide either supervised or un-supervised call forwarding from a PABX station to a remote employee's home or cell phone. This allows the remote employee to take business calls as if they are actually "in the office". Calls can be forwarded to one of nine different phone numbers so that calls may follow them wherever they may go. The Telecommuting Extender mode also provides the remote employee access to the PABX/KSU system, similar to the line extender mode.

## 1. Log In and Log Out

### a. Log In

The remote employee calls into the **LINE IN** port of the **RAD-AMP**, hears a single beep tone, and dials **\*\*1, \*\*2, \*\*3, \*\*4, \*\*5, \*\*6, \*\*7, \*\*8, or \*\*9** to tell the **RAD-AMP** which one of the nine pre-programmed phone numbers to forward calls to. This way the remote employee can program the **RAD-AMP** to follow them as they change locations, or change over from one remote employee to another.

### b. Log Out

The remote employee calls into the **LINE IN** port of the **RAD-AMP**, hears a single beep tone, and dials **\*\*0**. A logged out employee will appear as a busy PABX/KSU station.

## 2. Supervised and Unsupervised Forwarding

### a. Supervised Forwarding

Supervised forwarding is ideal for PABX/KSU systems with voicemail, ACD/UCD or other applications where manual call acceptance is preferred. When PABX/KSU station ringing is detected on the **RAD-AMP's LINE OUT** port, the **RAD-AMP** goes off hook on the **LINE IN** port, and speed dials the remote employee's phone number. When the remote employee answers the call, a series of short beeps will be heard signifying that this is a call from the **RAD-AMP**. If the remote employee is available to take the call, they may release the call by pressing a Touch Tone **5** on their phone. The call will then be immediately bridged for a completely transparent transfer. If a Touch Tone **5** is not pressed, the call appears as a "ring-no-answer" to the PABX/KSU, so that it may roll into a voice mail box, back to the operator, to another agent or as the PABX/KSU is programmed for ring-no answer situations.

### b. Unsupervised Forwarding

Unsupervised forwarding is ideal for applications where the remote user has central office provided voicemail or an answering machine. When inbound ringing is detected on the **LINE OUT** port, the **RAD-AMP** will access the **LINE IN** port, dial the user programmed phone number, answer the **LINE OUT** port, and bridge the two ports together for a nearly transparent transfer.

## 3. Remote PABX/KSU Feature Use

After a call has been forwarded and established, the remote employee may perform nearly any function on the PABX/KSU that could be done locally through an analog station port. Dialing a **#1** will hookswitch flash the PABX/KSU. This enables the remote employee to complete hookswitch flash type features, such as transfers, conferencing, paging, etc. Dialing a **#2** will disconnect the PABX/KSU station for two seconds returning fresh PABX/KSU dial tone to the remote employee for placing an outbound or intercom call through the system. Realize that a toll call placed this way will appear on the PABX's business line, not the remote employee's line. A manual disconnect may be performed by dialing a **#7**.

The remote employee can also make themselves unavailable by "Punching out" (see section 1). This will make their PABX station appear to be busy. The remote employee can "Log-In" by programming one of the nine pre-programmed phone numbers as the forwarding number (see section 1).

## 4. Calling the PABX/KSU Remotely

In the "Telecommuting Extender" mode, the **RAD-AMP** allows telecommuters to access the PABX/KSU remotely in order to check phone system voice mail, make long distance calls, make pages, or talk to on-site personnel. When a remote user dials into the **LINE IN** port of the **RAD-AMP**, the **RAD-AMP** answers the inbound call and prompts the caller with a single beep. The caller is then required to enter an access code within 20 seconds. If an access code is not entered within 20 seconds, the **RAD-AMP** will triple beep and hang up. The **RAD-AMP** offers two levels of secured access, designated "Priority 1" and "Priority 2."

### a. Priority 1 (unlimited) Access

Upon entering the correct "Priority 1" access code, a double beep will be heard and the caller is provided unrestricted access to dial on the analog station port. **Important:** *Anybody that knows both the inbound phone number and the "Priority 1" access code may place a toll call through the PABX/KSU's business lines.*

### b. Priority 2 (limited) Access

Upon entering the correct "Priority 2" access code, a double beep will be heard and the caller is provided limited access to dial extensions and features within the PABX/KSU. If the caller attempts to dial the PABX/KSU outside line number (programmable, typically a 9) to place a call outside of the PABX/KSU, the caller is immediately disconnected, providing basic toll fraud and system abuse. **Important:** *If the PABX/KSU utilizes any special direct trunk access codes in addition to the outside line number, the **RAD-AMP** can not prevent toll fraud and system abuse on a "Priority 2" access call.*

## 5. Disconnect

For disconnect, the **RAD-AMP** senses busy signals, return dial tone (if enabled), maximum call time (if enabled), the Touch Tone command #7 or a CPC break on either port. In addition, the **RAD-AMP** will flash the **LINE OUT** port for 500ms when the Touch Tone command #1 is entered and disconnect the **LINE OUT** port for 2 seconds to return fresh dialtone, when the Touch Tone command #2 is entered.

## D. SO-24A Mode

This mode is necessary when using the **RAD-AMP** to access Viking's model **SO-24A** Service Observing Module remotely. While in this mode the **RAD-AMP** omits conflicting commands by ignoring #1, #2 and "Priority 2" restrictions.

 Need More Information on the SO-24A?  
Call (715) 386-4345 and select 690.

# Other Products

## SO-24A Service Observation Unit



The **SO-24A** allows supervisors to silently monitor employee phones without disrupting the activity at their workstation. The information gathered may be used for quality purposes, to train, motivate even **assist** customer service and telemarketing representatives.

A supervisor may enter the conversation by dialing a "\*." A cassette recorder output permits automatic or manual recording of conversations.

The **SO-24A** features improved audio and can now be easily expanded to 240 stations by installing additional 24 line units. The **SO-24A** can be programmed with a 2, 3 or 4 digit dial up code to match station extension numbers.

 Need More Information on the SO-24A?  
Call (715) 386-4345 and select 690.

## RAD-1 Line Powered Remote Access Device

The **RAD-1**, remote access device, gives authorized users remote access to PABX, Centrex and Electronic Key system features. It can also provide bridging to a second central office line. With two levels of access and programmable toll restriction, the **RAD-1** provides the security required to help prevent phone system and toll abuse.

The **RAD-1** answers on the first ring and disconnects on CPC, time out or by dialing #7. The 600 ohm **LINE OUT** port provides loop closure for audio access to system features or an external device. For "line extender" applications, the user does not have to hang up and redial the **RAD-1** to make another call. The **RAD-1** will also provide a hookswitch flash on the **LINE OUT** port to access PABX, Centrex or Electronic Key system features.



 Need More Information on the RAD-1?  
Call (715) 386-4345 and select 410.

## K-2000-DVA Multi-Input Voice Dialer and Announcer



Viking's **K-2000-DVA** is a fully programmable multi-input, multinumber auto dialer and digital announcer, designed for emergency and non-emergency message notification. The **K-2000-DVA** has eight dry contact inputs which when tripped will sequentially dial up to 8 different phone numbers and play a recorded message corresponding to the input tripped.

The **K-2000-DVA** can store up to seven 16 digit phone numbers and one 32 digit phone number (for use with pagers) per input for a total of up to 64 different numbers. This unit is capable of local or remote recording of up to 8 different messages (one message per input), with a total recording time of one minute.

The **K-2000-DVA** can also be configured as a store caster (no dialing), for on-site promotional or assistance announcements.

 Need More Information on the K-2000-DVA?  
Call (715) 386-4345 and select 303.

**Product Support Line...715.386.8666**

**Fax Back Line...715.386.4345**

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