# V-119RTVA VOICE ANNOUNCE
# V-119RTHF HANDSFREE TALKBACK
# 19 ZONE INTERCOM/PAGE CONTROL UNITS

## *GENERAL*

These instructions provide identification, installation, operation, connection and maintenance information for the V-119RTVA voice announce and V-119RTHF handsfree talkback intercom/page control units.

The V-119RTVA and V-119RTHF are single-path dial select microprocessor controlled intercom/page control units to be used with PABX, Electronic Key or 1A2 Key Telephone Systems.

This paging unit has received an FCC type KX registration and is designed to be used with FCC registered key telephone systems. Installations may be made by Valcom, Inc., telephone equipment manufacturers, telephone companies, registered telephone refurbishers, and those qualified for installation of FCC registered systems under FCC Rules Section 68.215.

In accordance with FCC rules with applicable tariffs, this intercom unit may only be installed with the authorization of the owner of the host system.

The FCC Registration No. BAFUSA-69358-KX-N, will be listed in the affidavits filed with the telephone company; it will also be recorded in the system log kept by installation and maintenance personnel. The local telephone company is to be notified of the FCC Registration Number when this intercom unit is installed.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class B computing device, in accordance with the specifications in Subpart J of Part 15 of the FCC Rules, which are

designed to provide reasonable protection against such interference. If this unit does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Plug the equipment into a different branch circuit.
- Move the equipment away from the receiver.

## *SPECIFICATIONS*

### *Purpose*

- To provide 19 stations or zones of handsfree talkback to 1A2 key systems, electronic key systems, or PABX trunk positions (V-119RTHF).
- To provide 19 zones of voice announce signaling to 1A2 key systems, electronic key systems, or PABX trunk positions (V-119RTVA).

### *Applications*

- 1A2 key systems
- Electronic key system line key position
- PABX loop start trunk position

### *Features*

- 19 stations or zones
- Built-in talkback amplifier for handsfree talkback operation (V-119RTHF)
- Dial tone
- Ringback tone
- Last number dialed re-ring (tone only)
- Conference calling on tone dial systems (handset to handset only)
- Personal signaling (tone only)
- Combined rotary and tone dialing
- Speaker inhibit (with 1A2 key systems)
- Splash tone (V-119RTHF only)
- 15 second repeat alert tone option
- Optional all call (requires V-1118 one-way all call unit)

### *Capacity*

- The capacity of the V-119RTVA or V-119RTHF is 19 zones or stations.
- One talkpath.
- The maximum number of speakers on a zone is two 45 ohm talkback (V-119RTHF) or 40 one-way amplified speaker assemblies (V-119RTVA).

### *Numbering Plan*

- The dialing codes are: 0, 1, 3-9, 20-29.

### *System Configuration*

- For talkback, use the V-119RTHF and 45 ohm talkback speakers (maximum two per zone).
- For one-way voice announce, use the V-119RTVA with one-way amplified speakers (maximum 40 per zone).

NOTE: One-way amplified speakers may also be used with the V-119RTHF in areas where talkback is not required.

### *Dimensions/Weight*

- 7.1" H x 5.9" W x 2.1" D
  (18.03 cm x 14.99 cm x 5.33 cm)
- 3.5 lbs. (1.6 kg)

### *Power Requirements*

| **Voltage** | **Working Limits** | **Current** |
|---|---|---|
| Talk battery | –21.5 to –26 Vdc | 60 mA |
| Signal battery | –21.5 to –26 Vdc | 250 mA |
| Lamp battery | 9V to 11 Vac | 45 mA per lamp |

### *Electrical Characteristics*

| **Parameters** | **Working Limits** |
|---|---|
| Input Imp. T and R | 600 Ohm (incl.inst.) |
| Max. Cable Length | |
| One-Way Page | 5000 Feet |
| Talkback Page | 800 Feet |
| Dial Pulses | 8-12 PPS<br>60-40 Break ratio<br>+10% |
| Tone Signals | Industry Standard |
| **Frequency** | |
| Bandwidth | 3% |
| Twist | 6db |
| Detect | 40 MS |
| Interdigital Time | 40 MS |
| **Environmental** | |
| Temperature | 0/ to 50/ C |
| Humidity | 0/ to 85/ Non-precip. |

## *INSTALLATION*

These instructions cover only the installation procedures for the Valcom V-119RTVA and V-119RTHF. Consult the installation instructions for other equipment that may be used. Installation procedures are the same for the V-119RTVA and V-119RTHF.

### *Precautions*

All precautions have been taken at the factory to insure that the equipment functions properly. To insure proper operation and to prevent equipment damage, please observe the following:

- Unplug the power supply before making any connections to the control unit.
- Do not locate the control unit closer than 18 inches or farther than 5 feet from the power supply.
- Do not use a lamp tester to check signals, use a voltmeter. A lamp tester when first applied is a short circuit to electronic circuits.
- Do not apply power to the control unit until all connections have been double-checked.

### *Mounting*

Mount the V-119RTVA or V-119RTHF on a 7" KTU mounting, relay rack, or on the wall.

### *Connections*

__ 1. Fasten a 25 pair female amphenol ended cable to the unit and terminate all leads on a 66 type block.

__ 2. Strap A ground, B ground and lamp ground common at power supply.
__ 3. Refer to Figure 1 for connecting block layout and connections.

**Limit cable runs to talkback speakers to not more than 800 feet. Do not split pairs.**

**Limit audio runs to one-way amplified speakers to not more than 5000 feet. Limit power runs to one-way speakers to maximum recommended for the particular speaker type (see applicable instruction).**

__ 4. Refer to Figure 2 for connections to 1A2 Key Systems.
__ 5. Refer to Figure 3 for connections to electronic line key or PABX loop start trunk positions.

### *Settings*

Wire Jumper JP1 controls the 15 second Repeat Alert Tone. The Repeat Alert Tone is disabled with the jumper in place and is enabled by cutting or removing the jumper.

For off-hook speaker cancel circuit, each ICM "A" lead must be connected through a 10K 1/4 W 5% resistor to the inhibit input (GN/V) (refer to Figure 2). When "called" station or any other party goes off-hook, the presence of two resistance grounds cancels or turns off speaker. "Handsfree" mode can only be restored by terminating call and redialing station.

### *Volume Controls*

The phone to speaker level should be at a normal listening level.

Speaker to phone level: this is the most critical level; set the volume at the lowest practical level. (It is better to set it too low than too high).

## *OPERATION*

To make a voice page, go off-hook and dial the number of the desired zone or station. Dial tone will be broken after the first number is dialed. A one-half second ringback tone will indicate that the called zone is being signaled. After the tone, proceed with the page. If using the talkback control unit, called party may answer handsfree. If speaker cancel is wired, when called party goes off-hook, speaker will be turned off.

To re-ring the same station, press the "*" button. The station will be signaled as long as the "*" is pressed. Personal signaling: When initiating a call, press the "*" and then the station number. A double tone will be sent to the called speaker. No voice announce or talkback will be possible.

To dial a new number (tone dial only), press the "#" button. The speaker for the first number will be disconnected and dial tone returned to calling party. Dial new number and page.

NOTE: If "#" is pressed after the speakers have been inhibited additional numbers may still be dialed. A tone will signal the called party but no voice announce or talkback will be possible.

To achieve maximum performance from this system, the user should receive the following operating instructions:

a. The calling party should speak directly into the telephone mouthpiece and avoid speaking too softly.
b. The called party must wait (approximately 1/2 second) before responding to the calling party.

## *CIRCUIT DESCRIPTION*

### *General Method of Operation*

This unit provides dial intercom access to interface with the telephone system being used. A one-way (V-119RTVA) or two-way (V-119RTHF) amplifier conditions the speech from the telephone system tip and ring, and provides a low impedance, low level output to the desired speaker via conventional telephone wiring, i.e. house cable or station wire.

### *Detailed Description*

When a station user lifts handset to make an ICM page, the switchhook contacts in the telephone close the tip and ring to form a loop which returns battery back to turn on a transistor which operates relay and logic circuit to return dial tone and lamp battery to telephone set. Logic circuit receives dialing information and operates relays and circuitry to supply splash tone and voice connection for station selected. When called or any other party goes off-hook on ICM path, the presence of two resistance grounds cancels or turns off speakers if inhibit resistors are wired. "Handsfree mode" can only be restored by terminating call and redialing station.

## *TECHNICAL ASSISTANCE*

When trouble is reported, verify that:

- All telephone sets are in proper working order;
- Power is being supplied to the unit;
- There are no broken connections at the connecting block;
- The conductors of color-coded cables are terminated in the proper order.

If trouble still exists, the test equipment listed below shall be required:

- Volt-ohm-multimeter
- Tone-dial single line instrument (for tone dial systems)
- Telephone test set
- Clip leads

Test lamps must not be used to check voltages. They can damage electronic circuits. When a hand test set is used to check voltages, the results will be misleading.

Before proceeding further, check the voltages at the connecting block. An undetected blown fuse or low voltage will cause improper control operation. DC voltage measurements are made with respect to (+) ground.

If the trouble has not been located, refer to Table 1. This chart identifies symptoms of some possible problems and solutions.

If a spare unit is available, continue to troubleshoot by substituting the spare unit for the specified unit.

If, after all the required test have been performed, the trouble still exists, assistance in troubleshooting is available from the factory. When calling, you should have a VOM, a telephone test set and several slip leads available and be calling from the job site. Call (540) 427-3900 and ask for Technical Support, or call (540) 427-6000 for Valcom 24-hour Automated Support or visit our website at http://www.valcom.com.

The V-119 is not field repairable. **Valcom equipment contains no user serviceable parts inside.** Valcom, Inc., maintains service facilities in Roanoke, VA. Should repairs be necessary, attach a tag indicating company name, address, phone number, contact person, and the nature of the problem. Send the unit to:

**Valcom, Inc.**
**Repair and Return Dept.**
**5614 Hollins Road**
**Roanoke, VA 24019-5056**

### VALCOM LIMITED WARRANTY

Valcom, Inc. warrants its products to be free from defects in materials and workmanship under conditions of normal use and service for a period of one year from the date of shipment. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period, provided that:

1. inspection by Valcom, Inc. indicates the validity of the claim,
2. the defect is not the result of damage, misuse, or negligence after the original shipment.
3. the product has not been altered in any way or repaired by others and that factory sealed units are unopened (A service charge plus parts and labor will be applied to units defaced or physically damaged),
4. freight charges for the return of products to Valcom are prepaid,
5. all units 'out of warranty' are subject to a service charge. The service charge will cover minor repairs (Major repairs will be subject to additional charges for parts and labor).

**This warranty is in lieu of and excludes all other warranties, expressed or implied, and in no event shall Valcom, Inc. be liable for any anticipated profits, consequential damages, loss of time or other losses incurred by the buyer in connection with the purchase, operation, or use of the product.**

This warranty specifically excludes damage incurred in shipment. In the event a product is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved in accordance with the F.O.B. point.

Headquarters:
Valcom, Inc.
1111 Industry Avenue
Roanoke, VA 24013
Phone: (540) 427-3900
FAX: (540) 427-3517

In Canada
CMX Corporation
35 Van Kirk Drive #11 and 12
Brampton, Ontario L7A1A5
Phone: (905) 456-1072
FAX: (905) 456-2269

## *TABLE 1*
## *TROUBLESHOOTING CHART*

| ***PROBLEM*** | ***PROBABLE CAUSES AND CORRECTIONS*** |
|---|---|
| No Side Tone | Check "A" battery connections, polarity and voltage. |
| No Dial Tone | Check "A" and "B" battery connections, polarity and voltage |
| No Volume to Speaker | 1. Check phone to speaker control.<br>2. Check* for audio present at tip, ring input BL/WH, WH/BL pair.<br>3. Check* for audio at signaled speaker pair at 66 block.<br>4. Check* for audio at input of speaker. |
| No Volume to Phone | 1. Check speaker to phone volume control.<br>2. Check wiring to talkback speaker.<br>3. Remove all connections to inhibit pin and verify. |
| Hum Heard at Phone | 1. Check wiring to speaker.<br>2. Possible magnetic interference from power supply - relocate unit and cables at least 18" away.<br>3. Check for noisy "A" battery. |
| No Speaker Cancel | 1. Verify ground present at phone side of at least (2) 10K ohm resistors. NOTE: Do not apply ground directly to inhibit input. |
| R. F. Interference | 1. Strap from V-119 chassis to A GND and B GND on punchdown block. Continue strap to earth or water pipe ground.<br>2. Connect .05 mfd ceramic disc capacitor from each side of each speaker pair to B ground on punchdown block. |
| Crosstalk Between Zones | 1. Failure to use twisted pair wiring.<br>2. Load speaker output pair at block by connect a 1/2 watt 47 ohm resistor across output pair. |

*Use lineman's test set (Butt set)

NOTES:

1) INHIBIT OPTION:
   TO CANCEL SPEAKERS, A 10K 1/4W 5% RESISTOR MUST BE CONNECTED IN SERIES WITH EACH ICM BUTTON "A" LEAD AND THE INHIBIT LEAD.

2) POWER SUPPLY:
   A BATT. -24VDC FILTERED TALK BATTERY.
   B BATT. -24VDC UNFILTERED RELAY BATTERY.

3) LAMP GND., A GND., AND B GND, MUST BE COMMON AT POWER SUPPLY.

4) FOR BEST RESULTS USE 45 ohm SPEAKERS OR ONE-WAY AMPLIFIED SPEAKER ASSEMBLIES.

5) OPTION PROGRAMMING:

| OPTIONS | | |
|---|---|---|
| JP1 | Installed | Open or Cut |
| | No Repeat Alert Tone | Repeat Alert Tone |

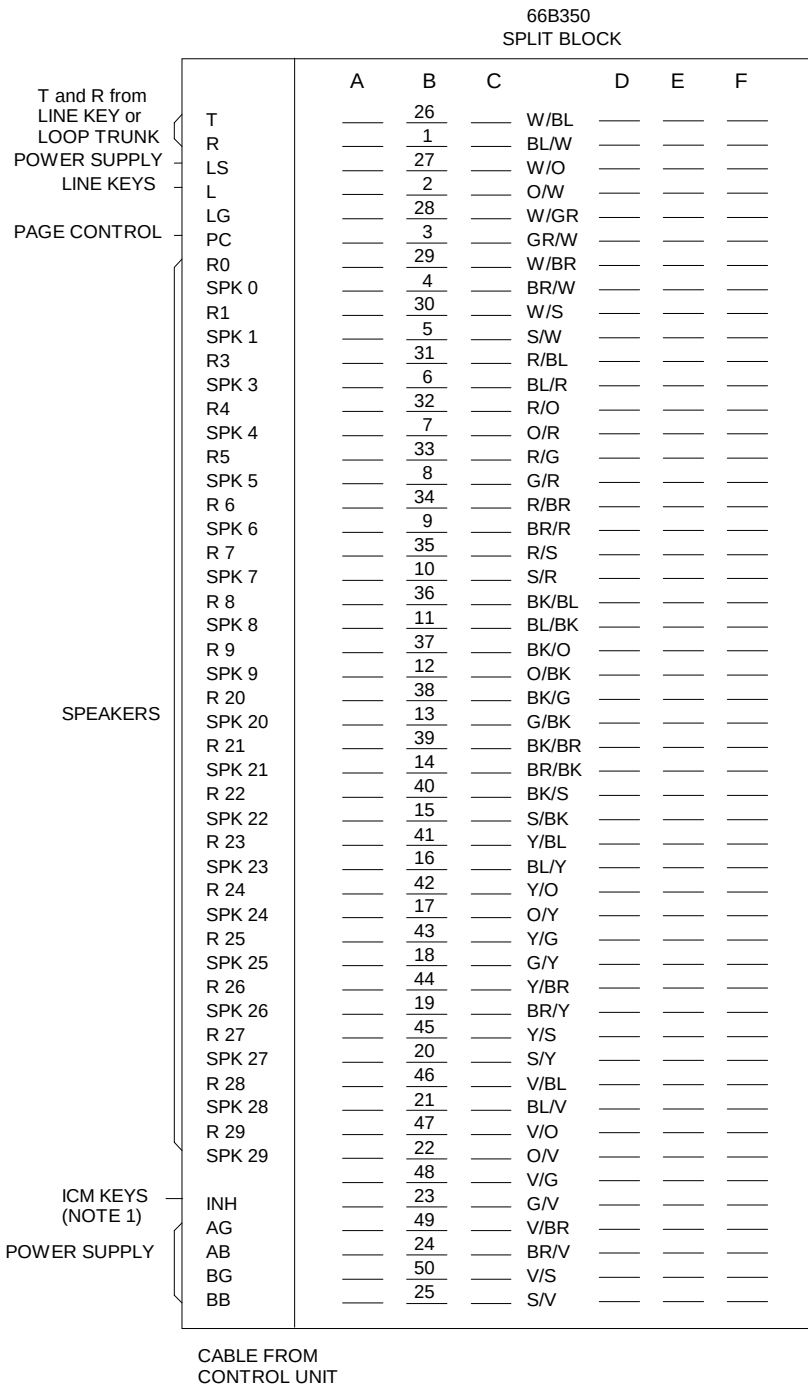



Figure 1
Connecting Arrangements for V-119RTVA/V-119RTHF

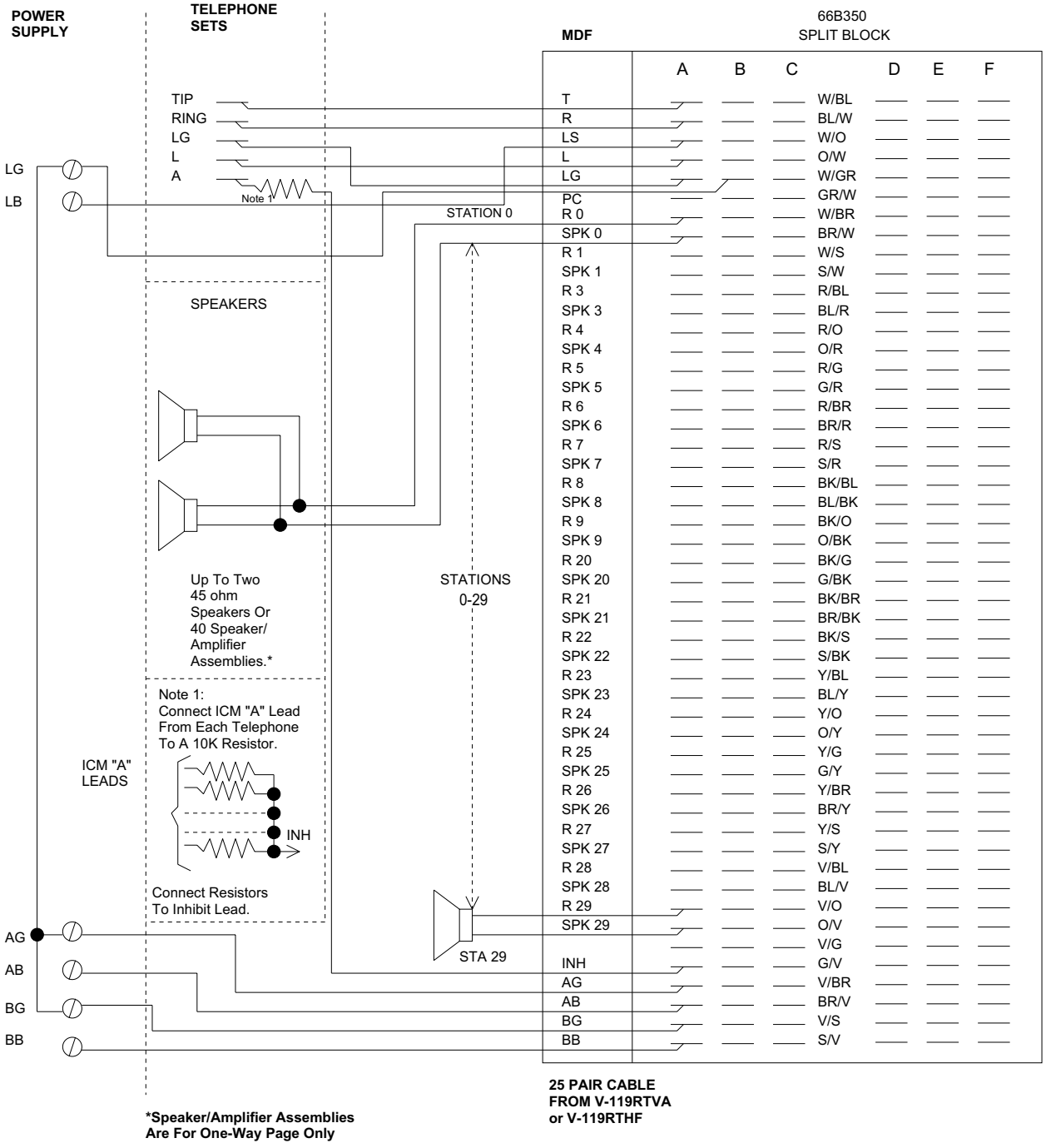



Figure 2
Connections to 1A2 Key Systems

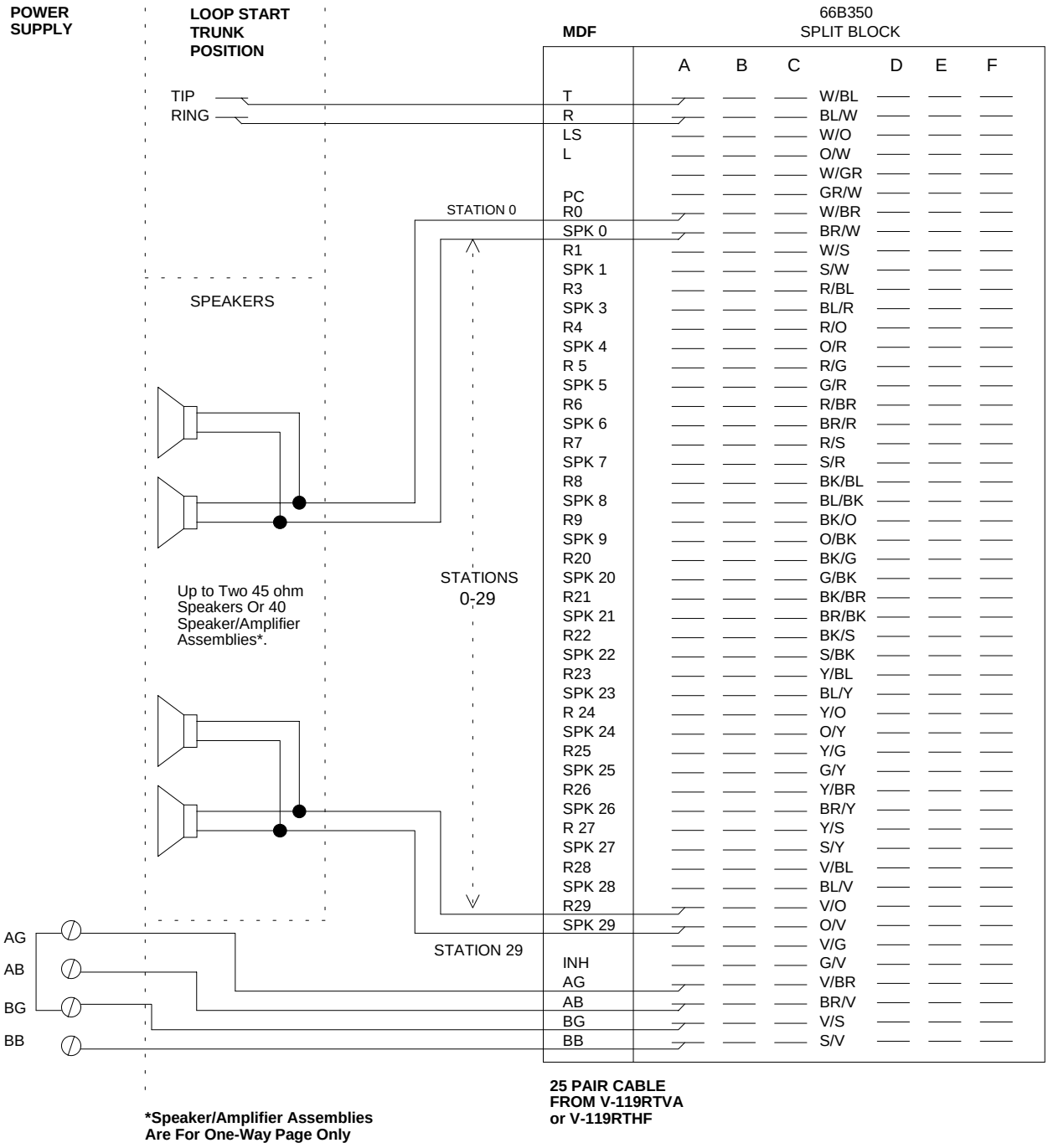
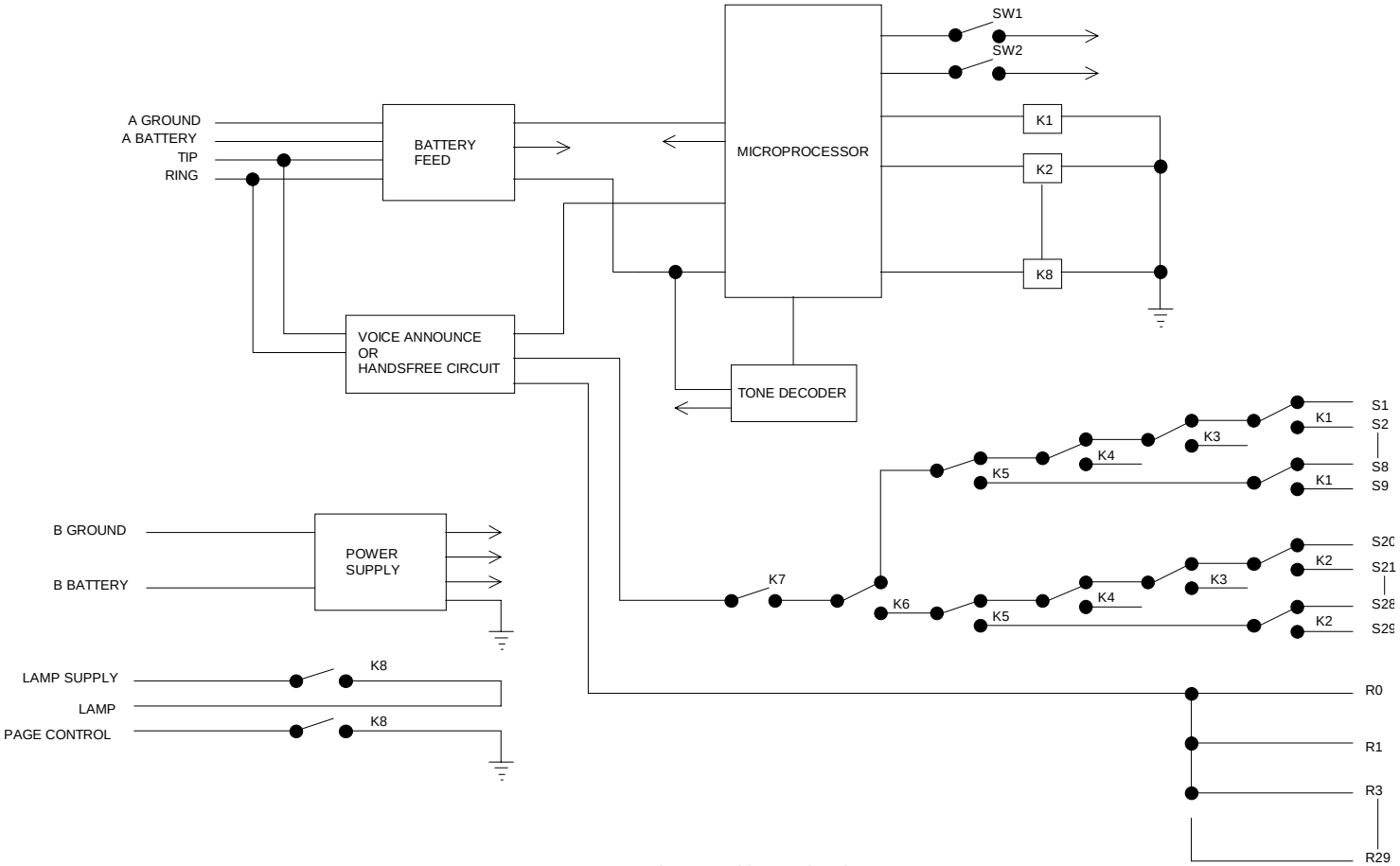



Figure 3
Connections to Electronic line Key or Loop Start Trunk Position




SIMPLIFIED SCHEMATIC DIAGRAM