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## INSTALLATION OF ADDITIONAL ANALOG INPUTS FOR VERBATIM,VMP-5 MAIN BOARD

These instructions explain how to add more analog points to your existing analog option.

The following items should be included in your upgrade kit, except in cases where a particular item is either not required or already in place:

- Extra speech memory chips
- A VAN circuit card which has been factory populated and configured for your complement of analog inputs. Two VAN cards are required for 16 analog channels.
- A pair of EPROM program chips
- Extra LED array indicators for front panel display
- A chip extraction tool

Since it will be necessary to clear out all memory contents and reprogram the unit, be sure you have written down all your programming and list of messages to facilitate reprogramming.

Be certain to turn the unit off, and also remove the source of 120 VAC power to the unit. Also disconnect the 6 volt gel cell battery, before performing the following steps. Be sure to straighten chip pins before inserting chips.

### **EXTRA SPEECH MEMORY CHIPS:**

- These chips have 32 pins. They go into the vertically oriented VSPE-2 speech card which is located at the very top of the unit. There is a continuous row of 10 32-pin chip sockets on this board, labeled U101- U110, with at least the first 3 sockets containing chips.
- Add whatever additional speech memory chips are included in your upgrade kit to the speech board, starting with the first available socket immediately to the right of the existing chips, so that a continuous group of chips is maintained with no empty sockets between them.
- Be sure that the pins on the chips are straight before plugging them in.
- Plug the chips in with the orientation dimple or end dot facing upward.

### **VAN CIRCUIT CARD:**

- Remove your old analog card. This must be returned to Raco so that you won't be charged, as the upgrade price is based on exchange of your old card.

- Referring to the diagram, carefully insert the new analog card card in the indicated pair of card guide slots, and slide it firmly into place so that its 64 pins fit into connector J1-E4 on the VDB Daughter Board.
- If you are upgrading to 16 analog channels, you will be installing two VAN cards.
- Be sure to insert the card which has its JB50 jumper strap in the upper position (making it implement the higher number analog channels), into the pair of slots above the other VAN card. The channel numbers for this board will follow the channel numbers of the first board.
- Route the heavy green ground wire down to the 120 VAC power terminal strip TS3 on the main circuit board.
- Connect this green wire to the power ground terminal marked “GRN”.
- Be sure you have temporarily turned off the source of 120 VAC power before you handle wiring on this terminal strip. There should be a green wire from each VX32 and VAN card that is installed in your unit, in addition to the ground connection to the external power grounding point.

**EPROM PROGRAM CHIPS :**

- Remove program chips from sockets U3 and U4 using the enclosed chip extractor tool.
- Replace them with the new U3 and U4 program chips respectively, with the orientation indentations facing upward, after first straightening any bent pins.

**JUMPER BLOCKS:**

- JB1 and JB2 configure the sockets U3/U4 and U1/U2 respectively for the size of chip.
- If you have a VMP-5A main board(label at the bottom), the JB1 block is always over the right two pins and the JB2 block is always over the left two pins.
- Exceptions (depending on your particular configuration) are noted below:

JB2

\* \* \*

JB1

\* \* \*

**EXTRA LED INDICATORS FOR FRONT PANEL BOARD:**

- These will be included in your upgrade kit unless you already have 32 total channels installed, in which case there is no additional room for additional LED’s.
- Remove the VFP front panel circuit board via 5 machine screws.
- Observe the insulation material and any spacers so that you can restore them in proper place later.
- Unplug the 2-conductor speaker connector but leave the 26-conductor ribbon cable in place.
- Plug the white LED arrays in place in their sockets, beginning with the first empty sockets to the right of the existing group of LED arrays. Orientation does not matter with these LED arrays as long as they are properly seated in their sockets.

**SYSTEM MEMORY CLEARDOWN:**

- Reconnect the battery.
- Restore the source of 120 VAC power, which will turn the unit on.
- Locate jumper block JB3, which lies immediately below chip U1.
- Momentarily (about 3-4 seconds) make connection between the two pins of JB3 while the unit is turned on. This will clear out all memory contents of the unit.
- The unit is now ready to have your programming re-entered.
- The reprogramming may be done at the panel or from a remote telephone.

Your unit is now upgraded to include the analog option. Refer to supplementary instructions for connecting and operating the analog option.

**RETURN EXTRA PARTS TO FACTORY:**

- To avoid extra charges, return any removed chips or unneeded card guides or daughter boards to the factory at the address shown on the letterhead.
- If you have questions, call Raco Customer Support at 800-449-4539. The Customer Support Department will be available from 8:00am to 4:30pm PST, Monday through Friday (excluding holidays).



# Installation of Analog Cards

