SINCE 1948

RACO

REMOTE ALARMS AND CONTROLS

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INSTALLATION OF THE ANALOG INPUT OPTION
FOR VERBATIM, VMP-4 MAIN BOARD

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:

- ☐ A VDB Daughter Board with standoff fasteners
- ☐ A special board extraction tool if needed
- ☐ Extra speech memory chips
- ☐ Replacement 62256 system RAM chips(U1 & U2)
- ☐ A pair of card guides (left and right) with screws
- ☐ 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
- ☐ A low power 68HC000 chip U6 to replace regular 68000 chip (unless 68HC000 is already in place)
- ☐ An 11.5 K resistor to replace 10K R207 on the front panel board
- ☐ Extra LED array indicators for front panel display
- ☐ A chip extraction tool
- ☐ A 65NC22 chip to replace the 6522 chip
- ☐ A VMEM102 chip to replace the VMEM101 chip
- ☐ Analog programming instructions

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.

68HC000 LOW POWER CHIP:
- If your unit already had a VDB daughter board in place, this step will not be necessary because a 68HC000 chip will already be in place.
- If your unit came without a VDB daughter board, inspect chip U6.   If it is marked 68HC000 rather than 68000, no replacement will be necessary.
- If you have a 68000 in place, carefully extract it (be sure that you are extracting it from its socket rather than prying the socket away from the circuit board) and insert the 68HC000 in its place, with the orientation dimple or index dot facing toward the right.

65NC22 AND VMEM CHIPS:
- If included with your kit, use the 65NC22 chip to replace the 6522 chip U5 and use the VMEM102 chip to replace chip U9 on the main board.
- If your unit has a VDB in place, you will need to remove it in order to replace this chip.

REMOVE VDB DAUGHTER BOARD:
- Do this step if you need to replace U9(VMEM), otherwise skip it.
- To do this you will need to first remove the existing left hand card guide.
- Push the special tubular tool over each of the four white nylon standoff fasteners in turn and lift the corner of the board until it clears the catch on the standoff. It is easiest to begin with the standoffs at the top, then the lower right and finally the lower left.
- Pull the board straight out; if you tilt it, its pins will bind in the main board's receptacle J1 and it will be much harder to remove.

INSTALL/REINSTALL VDB DAUGHTER BOARD
- To install/reinstall the VDB board, place a piece of electrical tape over the metal can U10(this is to prevent a possible short to the circuitry on the underside of the daughter board).
- Install 4 nylon standoffs in the mainboard. The holes correspond with the four corners of the daughter board.
- Inspect and straighten any of the 64 long pins on the back side of the VDB daughter board.
- Align this board so that its holes meet the four nylon standoff fasteners and its 64 pins align with connector J1 on the Main Circuit Board.
- Press the VDB board firmly into place on all four corners so that all four standoff fasteners "snap" into place, locking the VDB board in position.
- Press firmly on the edge with the pins to be sure they are completely seated.
- Reinstall the left hand card guide with two screws.
- Replace any option cards into the daughter card using one or more of the top 3 slots (**not** the one directly above the pins that plug into the main board).

CARD GUIDES:
- Referring to the diagram, after the VDB board is installed, fit the left hand card guide(with the notch in the bottom edge to allow clearance for the daughter board) over the two studs which protrude on the inside left side of the metal enclosure. These studs accurately position the card guide.
- Fasten the card guide with two 6-32 machine screws.
- Fasten the right hand card guide in similar fashion.

EXTRA SPEECH MEMORY CHIPS:
- These chips are provided to add speech recording memory to support your larger number of channels, up to the system limit. They have 28 or 32 pins. They go into the vertically oriented VSP speech card which is located at the very top of the unit.

USING VSP2_ SPEECH BOARD:
- Add speech memory from left to right in the first available spaces. The indentations in the ends of the chips go up.

USING VSPE-1 OR VSPE-2 SPEECH BOARDS:
- With v2.01 or higher program chips- put speech RAM in from left to right, beginning with U103.
- Jumper JB101 must be on the left hand two pins. Maximum of 8 RAM chips.
- With v1.35 or lower program chips, put the first chip in U104 and the second chip in U105 (U103 is skipped). A maximum of 2 chips may be used with this version.
- Jumper JB101 must be on the right hand two pins.

VAN CIRCUIT CARD:
- Referring to the diagram, carefully insert the VAN 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.
- 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 "GREEN". 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.

JUMPER BLOCKS:
- JB1 and JB2 configure the sockets U3/U4 and U1/U2 respectively for the size of chip.
- If your board is VMP-4B or below, the JB2 block will be over the right two pins, and the JB1 block will be over the left hand pins.

Exceptions (depending on your particular configuration) are noted below:

        JB2   JB1

        * * *   * * *

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.

RAM CHIPS:
- If your kit includes 256k RAM chips (62256) they should be installed in sockets U1 and U2.

EXTRA LED INDICATORS AND RESISTOR FOR FRONT PANEL BOARD:
- These will be included in your upgrade kit unless you already have 32 contact 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.
- If an 11.5 K resistor was supplied with your upgrade kit, use it to replace resistor R207 on the front panel board. Reconnect the 2-conductor speaker connector. Its orientation is not critical, but one way fits more easily than the other.
- Refasten the board to the metal door, restoring all insulators and spacers to their original placement.
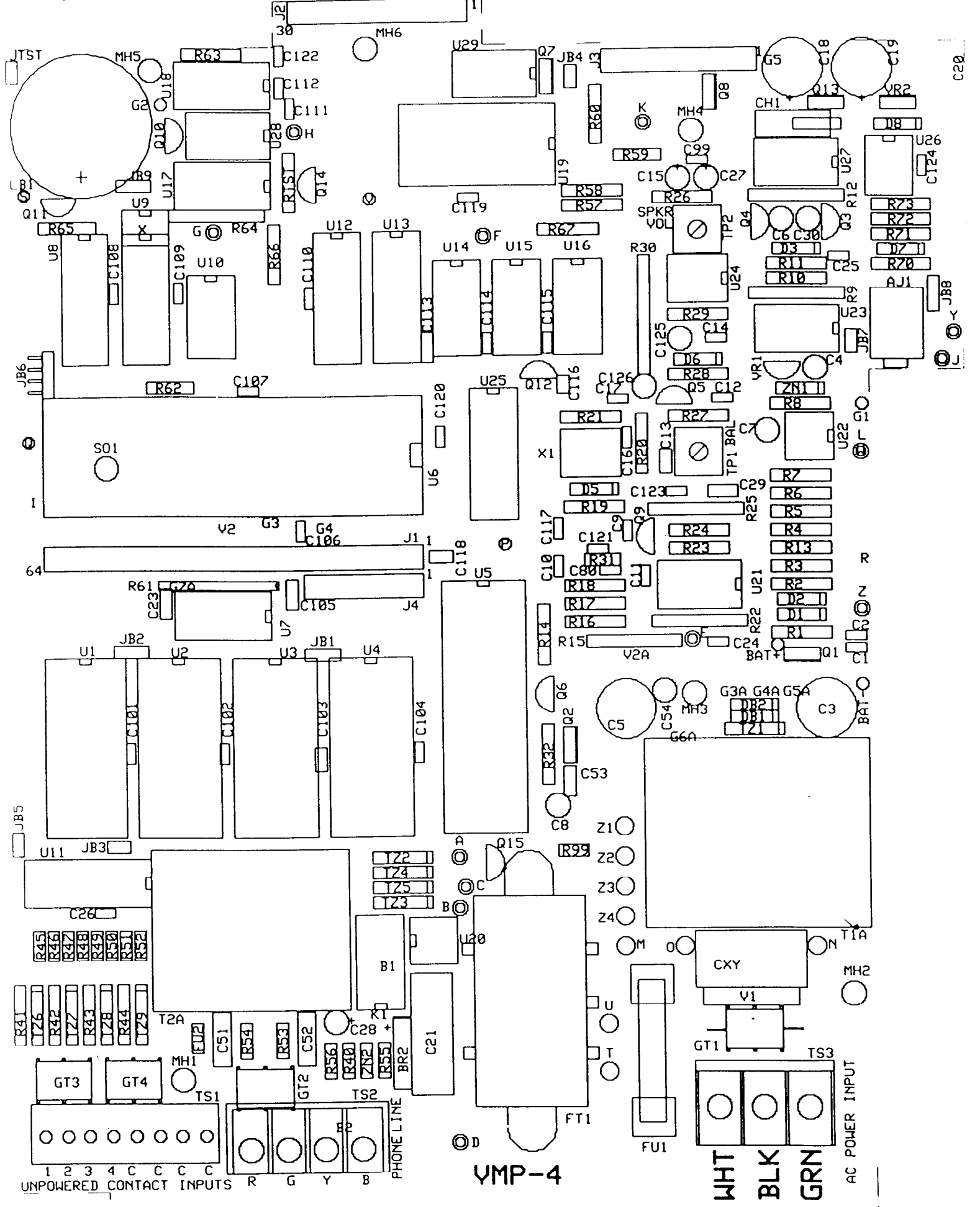
SYSTEM MEMORY CLEARDOWN:
- Reconnect the battery.
- Restore the source of 120 VAC power, which will turn the unit on.
- Locate jumper block JB3, which lies immediately below chip U1.
- Momentarily (about 2 seconds) make connection between the two pins of JB3 while the unit is turned on. This will clear 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).

VMP-4

UNPOWERED CONTACT INPUTS

PHONE LINE

AC POWER INPUT

WHT   BLK   GRN

1 2 3 4 C C C C

R G Y B

GT3 GT4

GT1 GT2

TS1 TS2 TS3

CXY V1

FU1 FT1

Installation of Analog Cards

VSPE Speech Card

Second 8 Analog Channels

First 8 Analog Channels

VAN Card

Do Not Use

1   2   3   4   C   C   C   C

R   G   Y   B

WHT   BLK   GRN

Phone
Connections

Connect grounded
120 VAC power here

Connect unpowred contact
inputs here. C terminals
are common return.