



## Replacement of VR18 IC's: Disk-on-Chip and Boot ROM

### A. Procedure of removing the old ICs

1. Turn off the power, take off communication cords, and take out I/O cards in rear Slots and the CF card.
2. If it is panel-mount style, remove the mounting clamp. If it is bench top/portable style, remove the handle, two ears and two feet as described below; figure references may be found in the VR18 Manual.
  - a. The handle: Remove it in a reverse way as Figure 2-11, 2-10 & 2-9.
  - b. Two ears: Remove them by pulling toward the backside.
  - c. Two feet: Remove them in a reverse way as Figure 2-14, 2-13 & 2-12.
3. Remove six screws in the back, take off the metal housing, and then turn the main part of recorder upside down with the display against you
4. Carefully disconnect cables of CN2 (one red cable), CN4 (one blue cable), CN3 (one black cable). Regarding CN1, pull two ends of cable socket toward the display, and carefully take off the cable.



Cables CN2, CN3 & CN4

5. Remove four screws on the board and turn the main board upside down.

6. Remove Disk-On-Chip and BOOT ROM carefully to avoid damaging any pins of ICs. Tools are available to pull out IC's. It takes great care and proper tool pulling IC upward and out in even and balancing way from left to the right and from the top to the bottom.

Shown below are pictures of three different versions of the main board, versions L, M & N.



Top Side View: PCB BSVR181L



Top Side View: BSVR181M



Bottom Side View: BSVR181M



Top Side View: BSVR181N

## B. Procedure of installing the new ICs

1. Before inserting the new Disk-On-Chip, check whether its pins are in proper condition.
2. Disk-on-Chip Install: Take note that the mark “•” at the bottom left corner of the “Disk-on-Chip” is in the same direction with half hole of the socket. Take great care to push down the new IC in an even and balancing way from the left to the right and from the top to the bottom.



Disk-on Chip

3. Boot ROM Chip Install: Note that the cutting edge at the corner of the old Boot ROM and the mark “•” on the new Boot ROM should be in the same direction. Take great care to push down the new Boot ROM IC in even and balancing way from the left to the right, and from the top to the bottom.



Boot ROM



Boot ROM with “•” and firmware level

4. Turn the main board upside down and put it back to the original place. Beware the stopper of CF reader at the front end of the board must go through the hole of the front bezel marked Compact Flash.



Main Board Upside Down

5. Fix four screws on the main board.
6. Carefully connect cables CN2, CN3, CN4 with the respectively sockets.  
The red cable must be matched with one end of CN2 socket marked “ RED ”, the blue cable to be matched with one end of CN4 socket marked “ BLUE ” and the black cable to be matched with one end of CN 3 socket marked “ BLACK ”.



CN2, CN3 and CN4 Cable board connections

7. Pull two ends of CN1 socket toward the display, and a little bit upward (not too much upward to avoid from breaking it), then insert CN1 cable in.

Then, push two ends down and forward to fix the cable.



CN1 Socket

8. Turn the main part upside down. Put on the metal housing, and then fix it by six screws.
7. If it panel mount style, put mount clamp back. If it is bench top / portable style, put two feet, two ears and the handle back; figure references may be found in the VR18 Manual.
  - a. Two feet: Follow the instruction as Figure 2-12, 2-13 & 2-14.
  - b. Two ears: Follow the instruction as Figure 2-6, 2-7 & 2-8.
  - c. The handle: Follow the instruction as Figure 2-9, 2-10 & 2-11.
9. Put back I/O cards, CF card, the power cord, and communication cords.

Turn on the power and the VR18 will power-up in a normally.