



TECH NOTE

VICON TECHNICAL SERVICES GROUP

Subject: RAID - Define Array
Product: KOL/RAID (RM8000)
With KOL3000 thru 9000 series
Number: 1400-0001-59-00
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The purpose of this Technical Note is to provide guidance in redefining an array in a RAID unit that has changed from Functional to Off-Line.

Reference Vicon Model KOL-RAID3-160, Firmware Revision 1.0.0.17, Hardware Version PDC20276.

The normal display on a KOL-RAID (RM8000 - 8 bay unit) is *Array Functional*. Failure of one hard disk drive (HDD), in a fault tolerant array, will result in a display that indicates *Array Critical*. A critical array will still record data. If another HDD fails, the array loses its fault tolerance and the display indicates *Array Offline*. At this point, data is no longer being recorded. (*Please note that this procedure only pertains to RAID's that are used with KOL3000 thru 9000 series units*)

If an array is critical, the corrective action is to replace the failed HDD. Once replaced (with an HDD of similar or larger size of the same RPM), the RAID will rebuild the data on the drive. When the drive is rebuilt, the *Array Functional* message will again be displayed. Rebuilding a 160GB drive can take several hours.

Once the *Array Offline* message is displayed, the array must be deleted and recreated.

1. The Control Buttons to navigate the RAID's menu system are the **▲**, **▼**, **SEL**, and **EXIT**. Their functionality is described in greater detail in the *UltraTrak RM8000 User Manual*. The buttons are accessed by opening the front door on the RAID chassis.
2. Prior to deleting the array, some existing parameters must first be noted for later use (step 4).
 - a. Press **SEL**. The display indicates *View Status* and *Configuration*. With the * next to *View Status*, press **SEL** and then **▼** to move the * to *View Cache Stats*. Make a note of the *Cache Block Size* (should be 64KB). Press **EXIT**.
 - b. Press **▼** to place the * at *View Array Information*, press **SEL**. Make a note of the RAID type (3 or 5), and the *CHS Map*.
 - c. Press **EXIT**. Move the * to *Configuration* and press **SEL**. A prompt for a password will appear. If the RAID is at the default password, press **SEL** four times.
 - d. With the * next to *Configure Array*, press **SEL** and then **▼** to *View Drive Assignment*. Use the **▼** to step through all drives. All drives should be assigned. If the RAID was originally Offline, then possibly two or more drives will be Free, or unassigned. Press **EXIT**.
3. Deleting the array.
 - a. Enter Configuration and navigate to *Delete Array* and press **SEL**. Follow prompts to delete the array.
 - b. Press **EXIT** and the message *No Array Defined* should appear.
 - c. Exit from the menu and cycle power to the RAID to ensure that the array has been deleted.
4. Define the Array.
 - a. After restarting, re-enter the menu and navigate to *Configure Array – Define Array* and press **SEL**. Set the RAID level to the same that was noted in step 2.b above. Press **SEL**.
 - b. Set the *Stripe Block Size* to the *Cache Block Size* noted in step 2.a above. Press **SEL**.
 - c. The *Gigabit Boundary* should be On. Press **▼**.
 - d. At *Add/Remove Drives*, the **SEL** button will toggle the drives between *Free* and *Assigned*. Assign all drives. Press **EXIT** to return to the *Define Array* menu and navigate to *Initialization*.
 - e. The default setting for *Initialization* is *On*. If *On* is selected, creating the array will cause all recorded data to be lost. Change *Initialization* to *Off*.
 - f. If the original drive that failed is known, remove that drive at this time.
 - g. The last option is *Save Changes*. Selecting this will create the array.
 - h. Once the array is created, press **SEL** to restart.
 - i. After restarting, the array will indicate *Array Critical* (if a drive was removed in step 4.f.) or *Array Functional* if all drives are operating correctly.
 - j. If a drive was removed in step 4.f above, insert a replacement drive at this time. The RAID will start to rebuild the drive at this point. Rebuilding can take several hours.
5. After the RAID has indicated *Array Functional*, shut down and restart the Digital Video Recorder. The DVR should recognize the RAID on boot up.
6. Check the DVR's programming to insure the RAID capacity is seen by the DVR.