

<b>DriveRack 260 Startup Sequence and debug help</b>	
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<b>Description:</b>	This document describes all events that can occur during power up on a 260 DriveRack device. Also included is a list of error values that the 260 may display during operation.

During the startup sequence the input 1 LEDs ramp up. Each stage of this ramp has significance, which is described below.

**First LED ch1 input.**

Indicates that CPU is running – initialization has begun.

**Second LED ch1 input.**

Indicates that the A/D have completed their calibration sequence. If this LED does not light, A/D init has FAILED.

**Third LED ch1 input.**

Indicates that the DACs have been initialized. The CPU will not hold this state based on a pass/fail criterion.

**Fourth LED ch1 input**

Indicates that the LCD drivers have been tested. The CPU will not hold this state based on a pass/fail criterion.

After these initializations, the timer ISRs is initialized.

The **LED test sequence** is next, which lights all button LED's, and all I/O LED's in progression.

The **dbx banner** and **firmware version** is displayed on the LCD.

The **hard checksum** (user programs) is tested. This tests the user program memory space, which is in FLASH. If it fails, the user is forced into a HARD RESET. A hard reset replaces all user programs with the factory default programs.

The **soft checksum** (system variables) checksum is tested. If the soft checksum fails, the following system variables resume their default settings.

```

device_name = DriveRack 260
output_jumper = JUMPER_22
program_lock = OFF
program_chanege_mode = Normal
program_list_index = 0
Program_List = u1,u2,u3....
Program_List_Size = 10
pup_mute = current
mute_status = UNMUTED
Security all levels set for LOW CLEARANCE REQUIRED
Security_Level = HIGH CLEARANCE
Intermediate_Security_Password = Hendrix

```

High\_Security\_Password = SRV  
load\_stored (PUP Program) = Current  
aeq\_select\_rta\_plot  
system\_locked = FALSE  
contrast = default contrast (09)  
loaded\_prg = U1  
zc\_panel = none

### Munges

If any system, program or global munges are required they are performed next. These may be performed on program updates to modify parameter values as per new FX changes, or initialize new features added in the new firmware version.

- If program parameters are modified, a notification with user acknowledgement will occur.
- If system values are changed, notification will occur.
- If global values with no user access are changed, there will be no notification.

**Power Up Keys** are acknowledged.

Any MUTE key:	All outputs will mute on startup.
STORE_KEY	Hard reset will be performed after user acknowledgement.
XOVER_KEY then IO_KEY	will show credits – DO NOT TELL USERS ABOUT THIS. If they find it they are special.
UTIL_KEY	Soft reset will be performed after user acknowledgement.
PROG_KEY	Program select on power up. This feature is useful if a program is corrupted and must not be loaded.
RTA_KEY	Locked state can be modified. (not locked, locked, locked with filter clear available)

**DSP is loaded** with its code.

### DSP HOST PORT TEST

cvr0\_fail: w:XX r:XX (w:XX, r:XX indicate failed host port interface)  
cvr1\_fail: w:XX r:XX (w:XX, r:XX indicate failed host port interface)

During the DSP load, the LEDs in output 6 will indicate “retries”. If they are ramping, the DSP has failed to load. If the ramping stops it has succeeded after several retries.

IO-TRIMS are loaded just after the DSP has been initialized.

The **device name** is displayed

**PUP Program checksum** If the PUP program is set to CURRENT and the checksum for the PUP Program fails, the program will load from the user program table and display “Loading Current Program from Flash.”

**Successful Boot Count** is incremented and stored in EEPROM.

User defined contrast is set. (default is used during startup)

The program is loaded and the program configuration is displayed on the LCD screen. (if the program does not display – check contrast level in Utility)

Normal operation of the 260 continues.

## Non critical errors

**!:****Ramp Fail XX** the failure value displayed will indicate which portion of the ramp failed. This can indicate a number of different problems, most likely a failure of the host port interface to the DSP. The unit will continue to operate.

### Critical failures:

Failed DSP load. On power up if output 6 LEDs are ramping, the DSP is not loading. The following error messages will help debug the host port interface to the DSP.

```
!:
```

**wr\_dsp\_byte**  
From ld\_pmem-dr\_init  
STAT WORD  
2 23

#### Description:

line1: An error occurred during an attempt to write a byte to the DSP host port.

line2: What memory load was being performed (ld\_pmem-dr\_init, ld\_pmem, or ld\_ymem).

line3: Header for the data that follows on line4.

line4: STAT = DSP HOST INTERFACE STATUS REGISTER value during the failure.  
WORD = Count of the word that was being written when the error occurred.

There are critical failures where the box will lock and the error message will display. The messages displayed are a part of our error handling when no recovery is possible. Contact dbx software engineers Steve Smith or John Lee immediately. In some circumstances, a hard reset will remove the condition that caused the critical failure.

Examples of these are "Stack Collision!", "!:get\_evals, cnt>MAX\_PARAMS", "!:get\_config\_fx\_nums, cnt>MAX\_FX"

Floor tests refer to test manufacturing documents for full procedures.

To enter floor tests, hold down the METER key and then hold down then the DELETE key

- |                     |  |
|---------------------|--|
| Button Encoder Test | - indicates the button pressed to ensure keypad works.   |
| Meter LED Test      | - lights all LEDs in various patterns to ensure LEDs work.   |
| LCD Driver Test     | - darkens the left half then the right half of the screen. Missing pixels may be detected.   |
| TRIM I/O levels     | - allows I/O levels to be trimmed to calibrated levels. Pressing <b>STORE</b> key will reset the IO trims to default levels (0.00dB) |
| Mute Relay Test     | - enables/disables the Mute Relays.  |
| Delay Memory Test   | - tests dsp memory   |
| Mic input test      | - tests contact closures. Output levels have gain that is controlled by contact closure voltage values.                              |
| Loopback test       | - tests RS232 circuit. Encoder turn cancels test.  |
| END of floor tests. |  |