

LPU Errata #1

Description of Error:

The fan connector is not powered unless optional component F1 is installed. Fuse F1 and the rest of the 3.3V regulator components are not supplied with the kit, as they are not needed to power Janus, Ozy, Penelope or Mercury.

Symptoms:

A fan plugged into J10 will not operate when the LPU is built with components as supplied.

Recommended Corrective Action:

Short across F1 with a piece of wire.

Alternate Corrective Action:

Install a 1A PTC fuse at F1. The Bourns part number is MF-MSMF110/16-2, available from DigiKey as part number MF-MSMF110/16-2CT-ND.

Notes:

This problem only applies when the optional components are NOT installed.

Severity:

This error will not affect LPU operation in any way. It only affects power to the fan header, J10.

LPU Errata #2

Description of Error:

Fuses F2 and F3 are underrated for a full system. They are rated at continuous 1.1A without tripping, while an Ozy/Mercury/Penelope system draws typically 1.3A from the +5V rail.

Symptoms:

An Ozy/Mercury/Penelope system will operate for a short period and then unexpectedly shut down. The time can vary, but is typically around 10 minutes. This is due to F2 opening and shutting down the +5V output. (Note that F2 doesn't actually "open"; it becomes higher resistance to protect the load.) After a power cycle, normal operation resumes.

Recommended Corrective Action:

Short across F2 and F3 with pieces of wire.

Notes:

The regulators have internal over-current and over-temperature protection.

Severity:

This error will cause the HPSDR system to randomly shutdown. It will not cause any hardware damage.

LPU Errata #3

Description of Error:

The resistance of R2 can be increased to move power dissipation from regulator U2 (+5V) to resistor R2. This is especially useful when operating the LPU at input voltages above 13.5V or with restricted airflow on the U2 heatsink.

Symptoms:

Regulator U2 (+5V) runs hot.

Recommended Corrective Action:

Replace resistor R2 with two 1.8 ohm 10W units in series. Suggested part is Yageo p/n SQP10AJB-1R8, DigiKey p/n 1.8W-10-ND. Equivalent part is Xicon p/n 280-CR10-1.8-RC, Mouser p/n 280-CR10-1.8-RC.

For best heat dissipation, mount the resistors vertically and connect the top ends together for a series connection.

Notes:

This will move more heat dissipation to a location adjacent to Atlas slot 6. If you are using Excalibur in that slot, this may be undesirable.

Sufficient airflow directly on the U2 heatsink (such as from a fan mounted in Pandora) will provide sufficient cooling with the supplied 2.2 ohm 10W resistor at R2.

Severity:

This is an optional change that may be useful in LPU applications with limited airflow or higher input voltages.