AO DDS / MINI-RF CHIRP SWITCH MODIFICATION

Luis Quintero, 27 Apr 2020
Electronics Department, Arecibo Observatory

The S-band transmitter (SbTx) exciter switch, AO DDC / MINI-RF CHIRP switch, in Fig. 1 is located in Rack 12 at the Control Room. It's next to the SbTx console.

Figure 1. Exciter switch front panel

This chassis allows to select between the AO DDC and MINI-RF signals using the MiniCircuits ZASWA-2-50DR+ high isolation RF switch (0-5GHz). The TTL signal is driven by a digital circuit at the lower right part of Fig. 2.

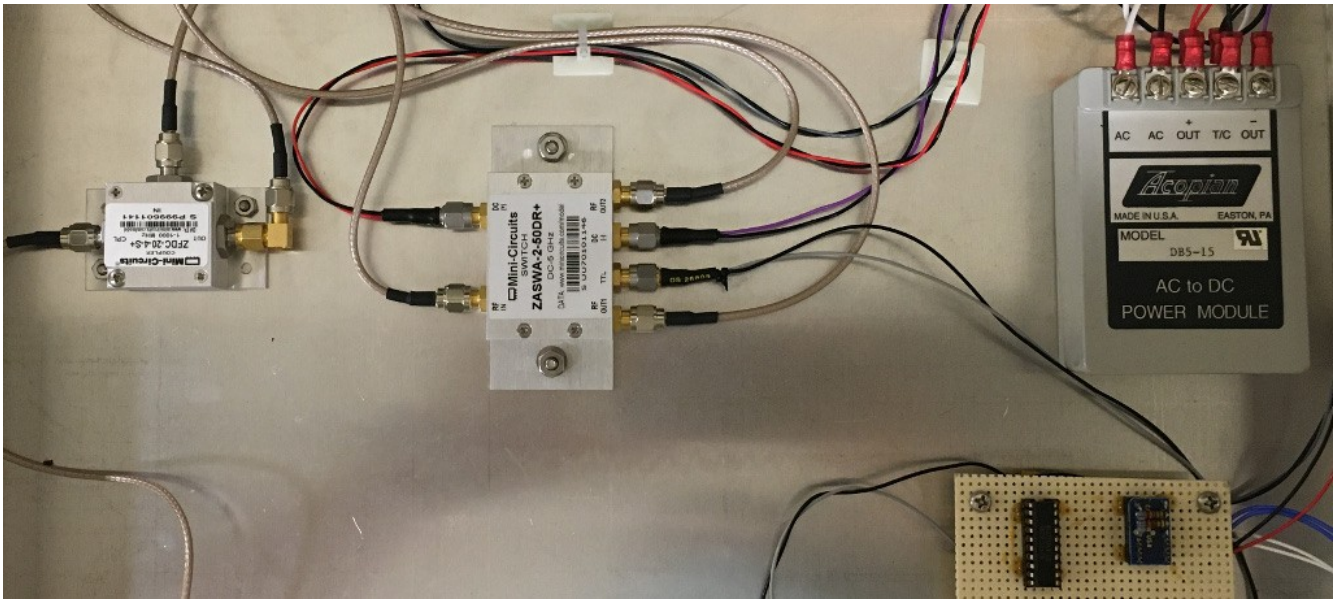

Figure 2. Exciter switch components

On 26 Apr 2020 it was reported that:

- The “TTL Control Input” SMA connector was loose
- The fuse holder was loose

In order to select the AO DDS or the MINI-RF CHIRP signals, the user installs or removes respectively the 50 Ohm load of the SMA rear panel connector at the TTL Control Input (see Fig. 3) If the load is tighten, a SMA wrench should be used to remove it.

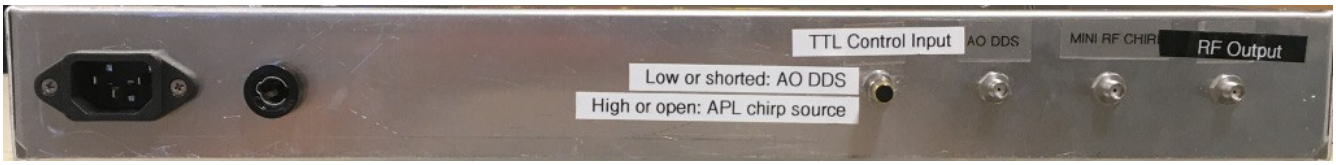

Figure 3. Exciter switch rear panel, before modification

In order to make the switching easier, the 50 Ohm load was replaced by a switch (see Fig. 4). The lower position is for AO DDS. The upper position is for MINI-RF. The toggle switch has a locking lever, so it should be pulled a little bit to change the switch position.

Figure 4. Exciter switch rear panel, after modification

The fuse holder was also adjusted.