Parkes Mark5 observing

These notes are intended for Parkes astronomy observations, specifically the v271 series at x-band. They are probably not correct for IVS geodesy or Mark5 astronomy at other frequencies

Parkes is equipped with a Mark5b disk recorder and a Mark4 distribution rack upgraded to a MAR5K "formatter".

IF Setup

- Ensure the IF is patched through the Switch Matrix to the Mark5. For X-band run (on any sun machine)

→ > `cd ~observer/smsetup` → > `smrun MK-V_MARS.cmd` → > `smrun MK-V_geo.cmd` - if the S?X Receiver is used.

- The Mark4 rack may need patching at the rear. For the v271 series the required patching is

VCs 1–3	IF 1 LO
VCs 4–8	IF 1 HI
Vs 9–14	n/a

The required patching seems to be shown in the procedure file generated below

When the appropriate receiver is on focus check the voltage levels of the VCs. You will have to have started the schedule (see below) or manually run the experiment setup procedure, e.g.: → > `proc=v271ipa` → > `setup01`

Check the experiment .snp file for the exact commands to use. The VCs need to be between 0.5 and 2.0 Volts. Leave the IF distributor on local and you can adjust the overall power by setting the two sets of attenuators on the lower left of this panel. Individual VCs can have a extra 10 dB of attenuation removed (default is in) by using the command (e.g.) → > `vc06=340.00,16.00,ul,0,0` alternatively attenuation pads can be added (or remove) from the patch panel at the back.

Running schedules

Mk5 schedules are generated from the .vex files generated by SCHED. These are transferred (ftp) to pkvsi1, where the field system is run, in the directory /usr2/sched.

The utility drudg must be run to generate the run schedule for the fs in snap format (.snp) and the procedures file (.prc) which is saved in /usr2/proc. To run drudg you on e.g. v271j.vex must type: → > `drudg v271j.vex` then choose Pa for Parkes in the list of telescopes in the schedule.

After that you need to select the following options: → > `16 (to set up the hardware)` and choose 16 14 1 1 (Mk5 rack; Mk5b rec 1; no rec 2; start 1) → > `12 - to generate the procedures` → > `3 - to generate the SNAP schedule file`

After starting the filed system (command fs), you need to enter the schedule to start e.g. → > `schedule=v271jpa,#1` → > `mk5relink` and the schedule should start recording ok.

Mark5 commands

"Note: The program "dimino" must be running on the Mk5."

The following are a list of useful commands to run on the pcfs to control the Mark5

- Current disk "position". Should be 0,0, for an empty disk and increments during recording

→ > disk_pos

- Check or select module (use "a" or "b")

→ > mk5=bank_select? → > mk5=band_select=b

- Check mark5 mode

→ > mk5=mode?

- Start then stop a test recording, then check it

→ > disk_record=on → > disk_record=off → > scan_check

- Erase a module

→ > mk5=protect=off → > mk5=reset=erase

- Set (then check) a module VSN. The VSN must have "+" for SATA modules and "-" for PATA modules.

→ > mk5=protect=off → > mk5=vsn=PKS+nnn → > mk5=vsn?

- Erase a module

→ > mk5=protect=off → > mk5=reset=erase

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Last update: **2015/12/18 16:39**