JFET Backharness Tekdata Design Review MOM
Doug Griffin

Attendees

Eric Sawyer
Doug Griffin
Roy Blake (Tekdata)
Terry McManus

Aim:

To review the details of the implementation of the re-worked backharnesses.

References:

10209784 Rev C
10209785 Rev C
10209786 Rev C

1. Materials

The list of materials on 10209784 were reviewed. Tekdata to supply an updated list of materials for their intended implementation. AI 1

2. Construction

- The MDM37S connectors which interface to the spacecraft are to maintain the existing interface location
- As the backshells are to be potted Stycast a spacer (in 316SS) between the flange of the connector and the mounting tabs on the JFET racks will be required. AI2
- As the width of the potting on the MDM37 backshell will be less than the width of the existing backshell, a gap will exist between the edge of the mounting tabs and the backshell. AI 3
- The design of the existing jackposts on the MDM37 need to be reviewed for suitability with the potted construction method AI 5
- The harness is to be constructed from:
    - Double shielded twisted pairs
        - Outer shield is 316SS braid (unjacketed) with a silver plated drain wire. This is terminated to the backshell/EMI screen of the connectors
        - Inside this is the insulating jacket
        - Inside this is the inner shield (316 SS wire sliver plated copper drain wire) connected to analogue ground
        - Inside this is two jacketed twisted pairs of 28AWG silver plated copper wires
    - Double shielded single core wire:
        - Outer shield is 316SS braid (unjacketed) with a silver plated drain wire. This is terminated to the backshell/EMI screen of the connectors
        - Inside this is the insulating jacket
        - Inside this is the inner shield (316 SS wire sliver plated copper drain wire) connected to analogue ground
        - Inside this is the jacketed single core 28AWG silver plated copper wire
- The function of the overall bundle braid in the existing shall be replaced by the individual outer shields described above.
- The shielding of the connectors will be made using copper foil terminated to the outer shield of the wires and the shell of the connector.

- The harness will not be wrapped in Kapton
- The harness will be held in the correct form with Nomex lacing cord
- The entry for the MDM37 shall be 180°
- The entry for the MDM15 shall be 180° but the wires shall be angled to exit at 45° from the potting.
- The harnesses are to be made up on a simple wiring horse. AI 4
- Drawing 10209784 C was redlined to specifiy the interconnection of the JFET bias and the detector bias in the backshell. This is to be done within the backshell with a 28 AWG jacketed wire

Vdd	Contacts 10 and 14 interconnected
Vss	Contacts 8 and 1 interconnected
V+	Contacts 2 and 7 interconnected
V-	Contacts 4 and 5 interconnected

3. Cost / Schedule

- Delivery compatible with the overall SPIRE schedule is tight be achievable
- Tekdata to review the schedule based on the outcome from this meeting and supply an updated quote and schedule to JPL and CC: RAL for the telecon on 29/11/05

Action Items

AI 1	Tekdata	Prepare a materials list for review on the intended implementation of the revised Backharness design
AI 2	RAL	Supply the dimensions of the existing backshell design so that the S/C interface location can be maintained
AI 3	Tekdata	Supply the dimension for the width of the potted backshell for the MDM37 connectors
AI 4	RAL	Supply the interface drawings for the JFET racks and modules to facilitate the construction of a wiring horse
AI 5	RAL	Review the compatibility of the design of the MDM37 jackpost design