External contact sub-system

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Overview

In addition to the many RF connections, PAPER needs a number of other sensor connections that must go through the container bulkhead.

The container bulkhead interface is via SMA connectors in metal plates. Each plate has 48 SMA connectors. For the 256 RF feedthrus 6 plates are needed, leaving 32 SMA positions available for other purposes. 28 of these will be connected to Dsub connectors and the remaining 4 will be capped and left for other connections.

For the purposes of this document, the 4-Dsub/28-SMA connections will be called the external contact sub-system.

External interface:

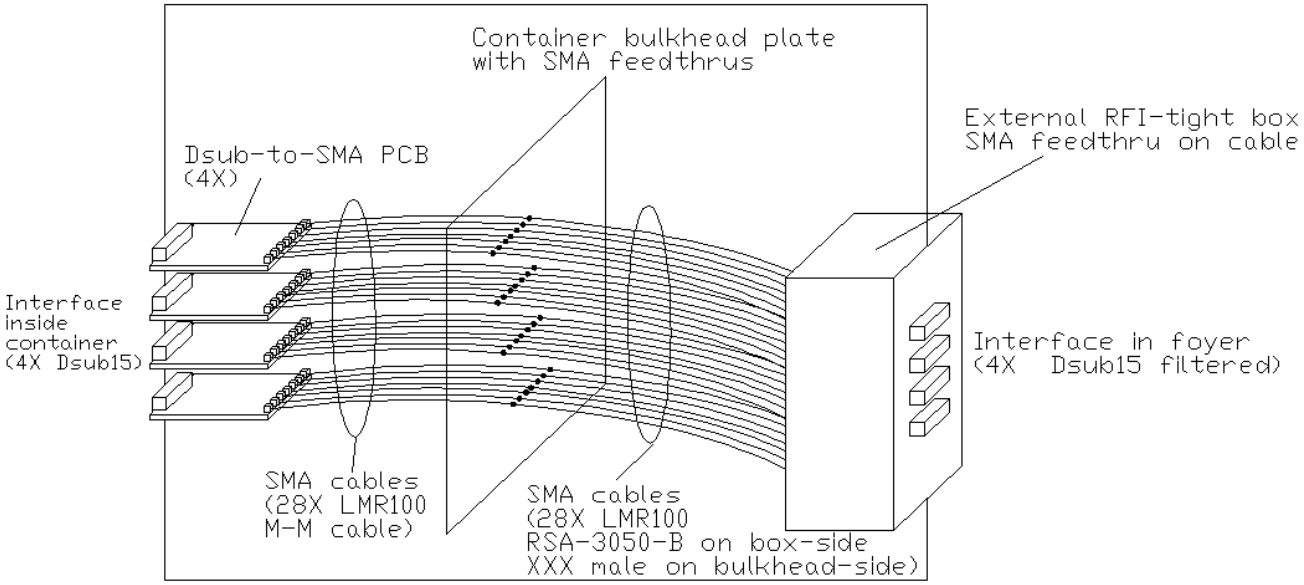
Input/Ouput: 4 × 15-pin Dsub plugs, labeled "A" – "D"

Pin-out for "A" connector:

1/9	center-pin (1) and ground (9) of SMA cable 1A
2/10	" 2A
3/11	" 3A
4/12	" 4A
5/13	" 5A
6/14	" 6A
7/15	" 7A
8	NC

etc

Internal configuration



Inside container

1 - Dsub-to-SMA PCB (×4): Simple special-purpose stacked boards each with 1x 15-pin Dsub connector (plug) and 7x SMA plugs

2 - SMA cables (x28): LMR100 standard coax with SMA jacks on both sides

Bulkhead

3 - Feed-thrus (x28): standard SMA bulkhead feedthrus with extra RFI gasket in SMA feedthru plates

Foyer

4 – SMA cables (x28): LMR coax with standard SMA jack on bulkhead-side and RSA-3050-B plug on box-side. The plugs screw into the RFI-tight box.

5 – RFI-tight box (x1): Hammond R110-162-000

6 – Jumper SMA cables (x28): inside box these connect the SMA plug to the 15-pin Dsub connectors (SMA jack to bare center pin plus ground)

7 – Dsub connectors (x4): mounted on RFI-tight box, filtered 15-pin Dsub connectors.