

Amateur Antennas on Columbus

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Introduction

- History
- Columbus
- RF Feed-Through
- Possibilities
- Current Design

History

- Fly ‘some’ amateur antennas on Columbus.
- Take care of transceiver(s) later.
- Need to be mounted before launch: EVA pretty much excluded.
- Antennas need to be low profile because of height limitations.
- Mass is limited by what the debris panels can hold.

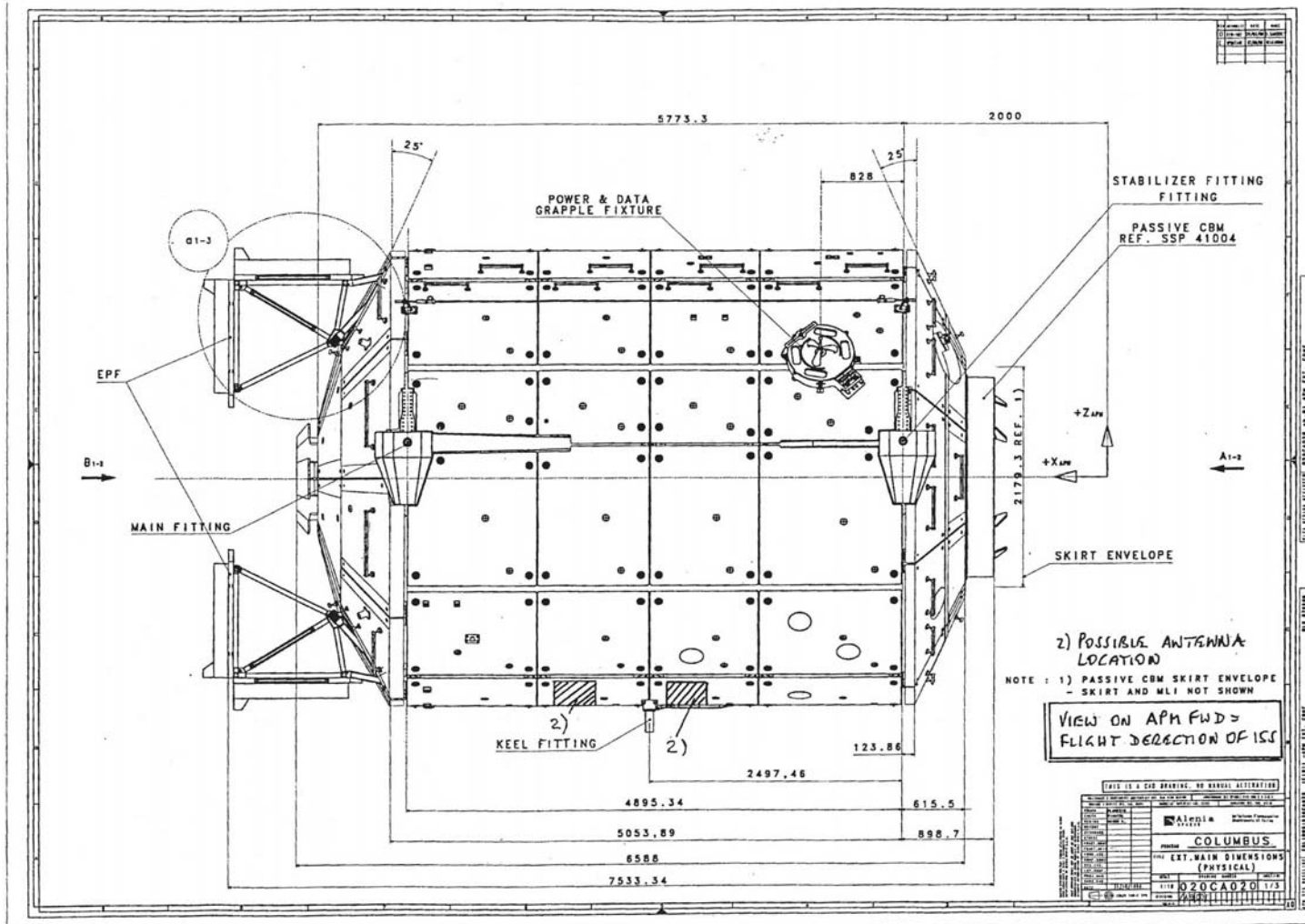
History

- Initial Idea: Attach one patch antenna for each 2m and 70 cm.
- 2m patch rejected because of mass.
- Added 2m dipole. Then got 4 versus 2 feed through connections.
- Added patches for 23 and 13 cm.
- Keep 70 cm patch.

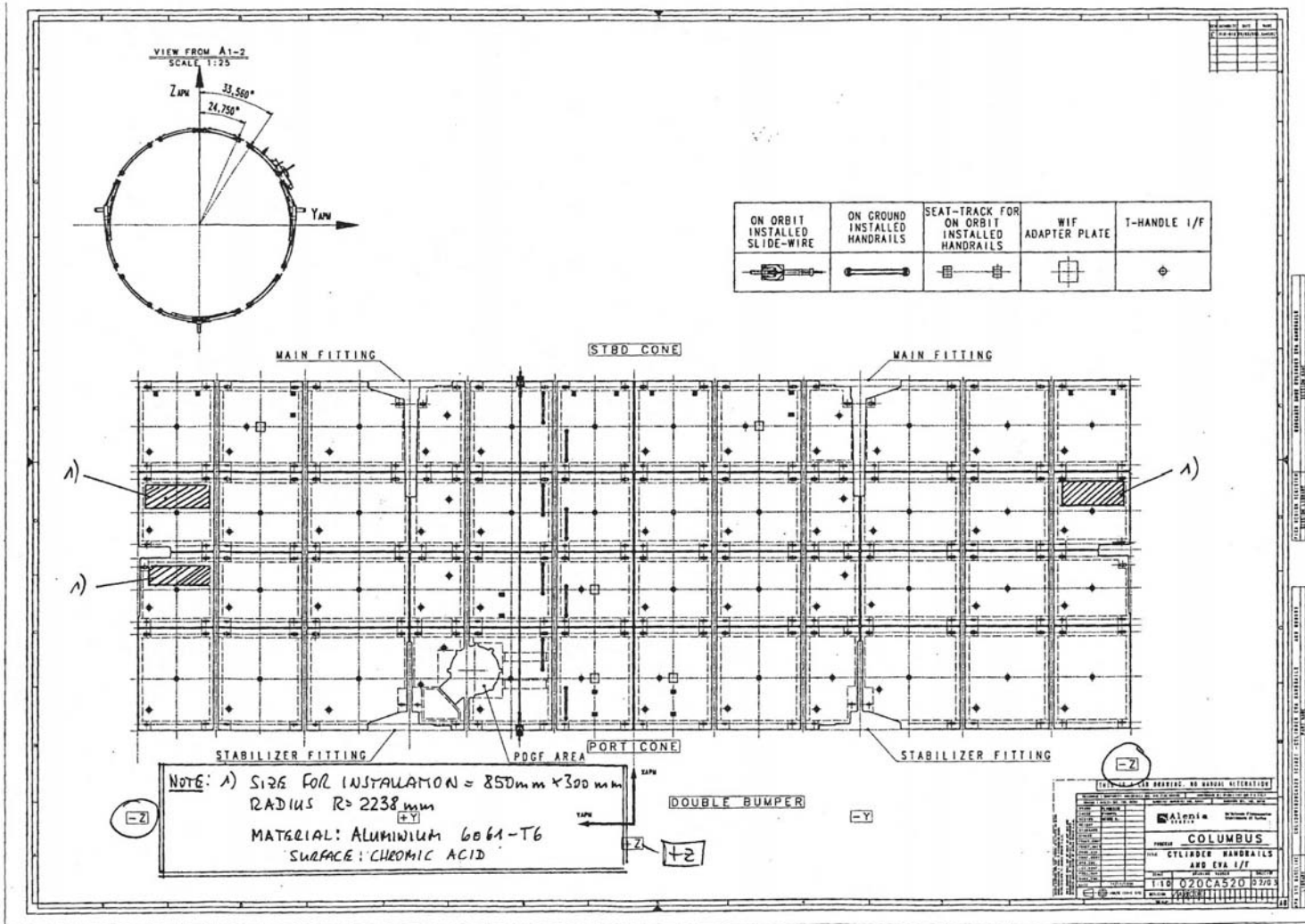
History

- 2m dipole rejected because of size.
- Decided to do multi band patch antennas for maximum flexibility.
- Final configuration not decided but:
 - The design is flexible
 - Short design cycle

Columbus



Columbus



Columbus

- Original Feed-Through was multi-pin DC Connector.
- RF performance ok at 2m and 70 cm.
- RF performance acceptable at 23 cm.
- RF performance not good at 13 cm.

RF-Feed Through

- DC feed-through replaced with 'real' RF feed-through
- Connector and 4 coax cables in place

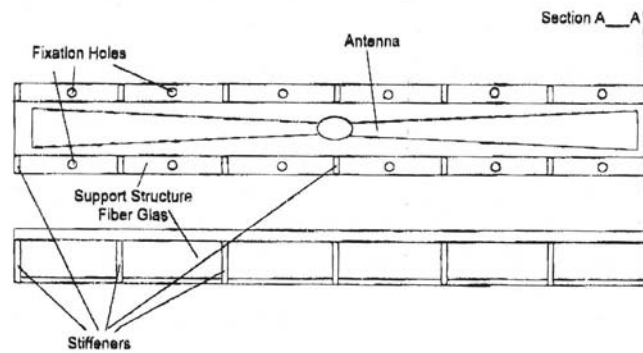
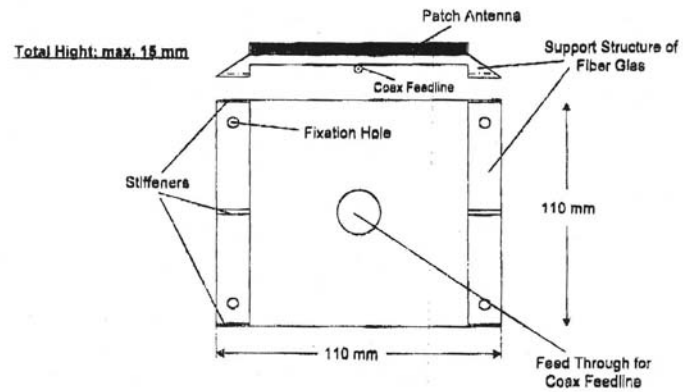
Possibilities

- 4 single or dual band patches.
- No impact for single vs. dual band patch.
- Maximize possibilities.
- Suggestion:
 - Dual band 70/23 cm
 - Dual band 23/13 cm
 - Dual band 70/13 cm
 - One more ...

Current Design

19/02/2004 10:45 ASTRUM GmbH 1041/43 + 2023227714989 NUM234 002

Only principle sketch for discussion!



Section A__A':



Max. Height: 15mm