

Status of RPW EMC tests on S/C

RPW Consortium Meeting #21



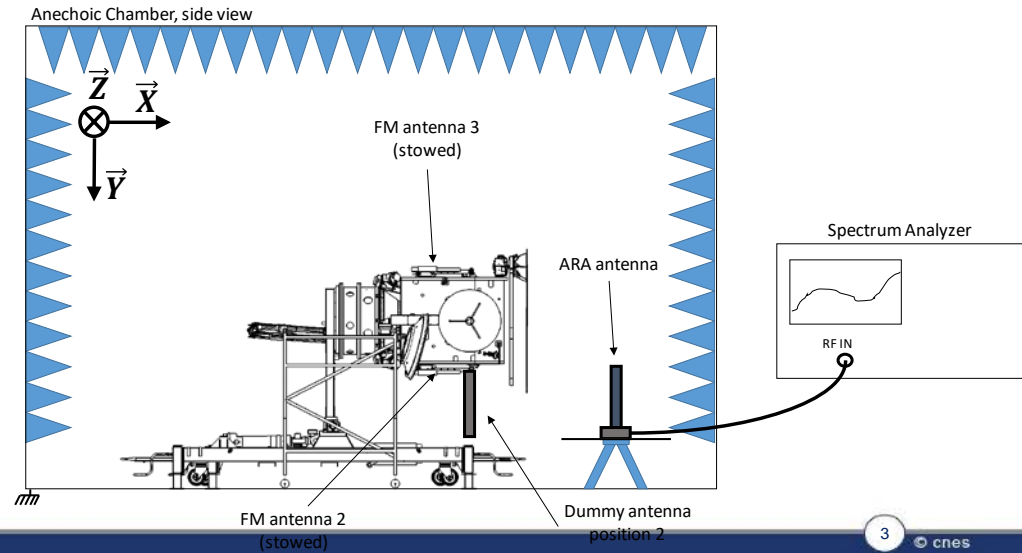
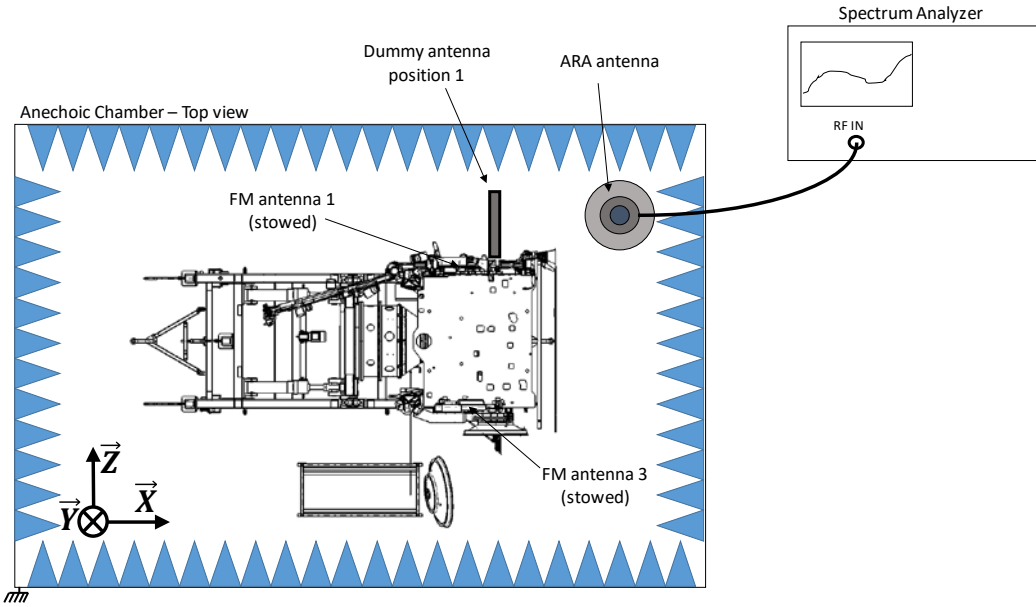
General presentation of RPW EMC Tests

RPW EMC tests divided into 2 steps:

- **Calibration of EMC chamber**
 - In mid 2018 (AC)
- **Tests on satellite**
 - April 2019

1 – Tests on satellite (April 2019)

- **Measurement with 2 dummy antennas deployed (1 and 2) and Antenna 3 stowed in the same time**
- **SCM PFM will be connected to the S/C at the flight position**
- **ARA antenna → 1 frequency sweep per equipment/instrument switch on (~2mn/sweep)**

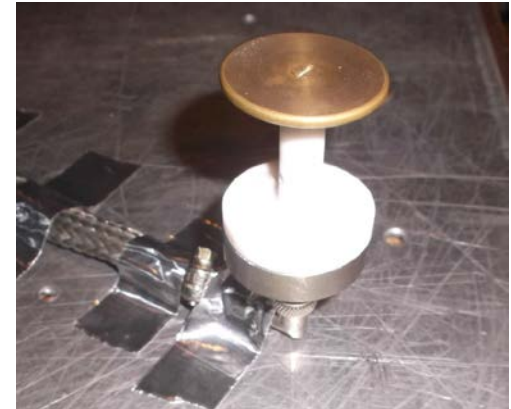


2 – Calibration (mid 2018)

- **Calibration of empty EMC chamber**

- Measuring transfer function
- Measuring E field noise floor
- Measuring AC H field noise floor

- **+ Measuring AC H field noise floor in MFSA room**



Calibration antenna

2 – Calibration (mid 2018)

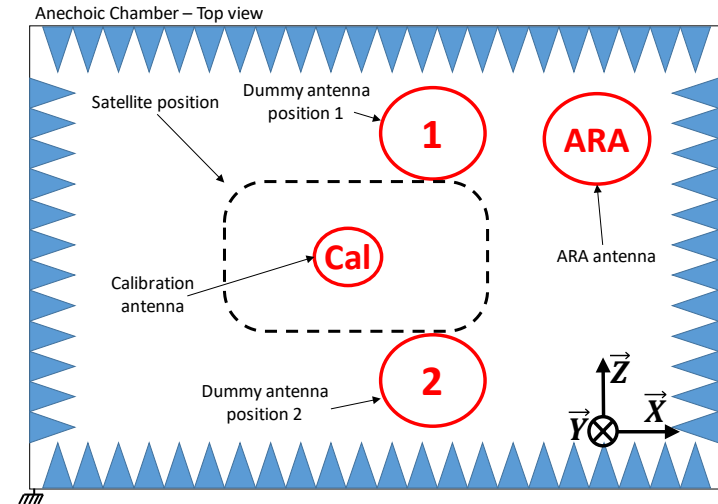
- **Transfer function measurement:**

- Dummy antenna 1 Vs. Cal antenna
- Dummy antenna 2 Vs. Cal antenna
- ARA antenna Vs. Cal antenna

- **E field noise floor:**

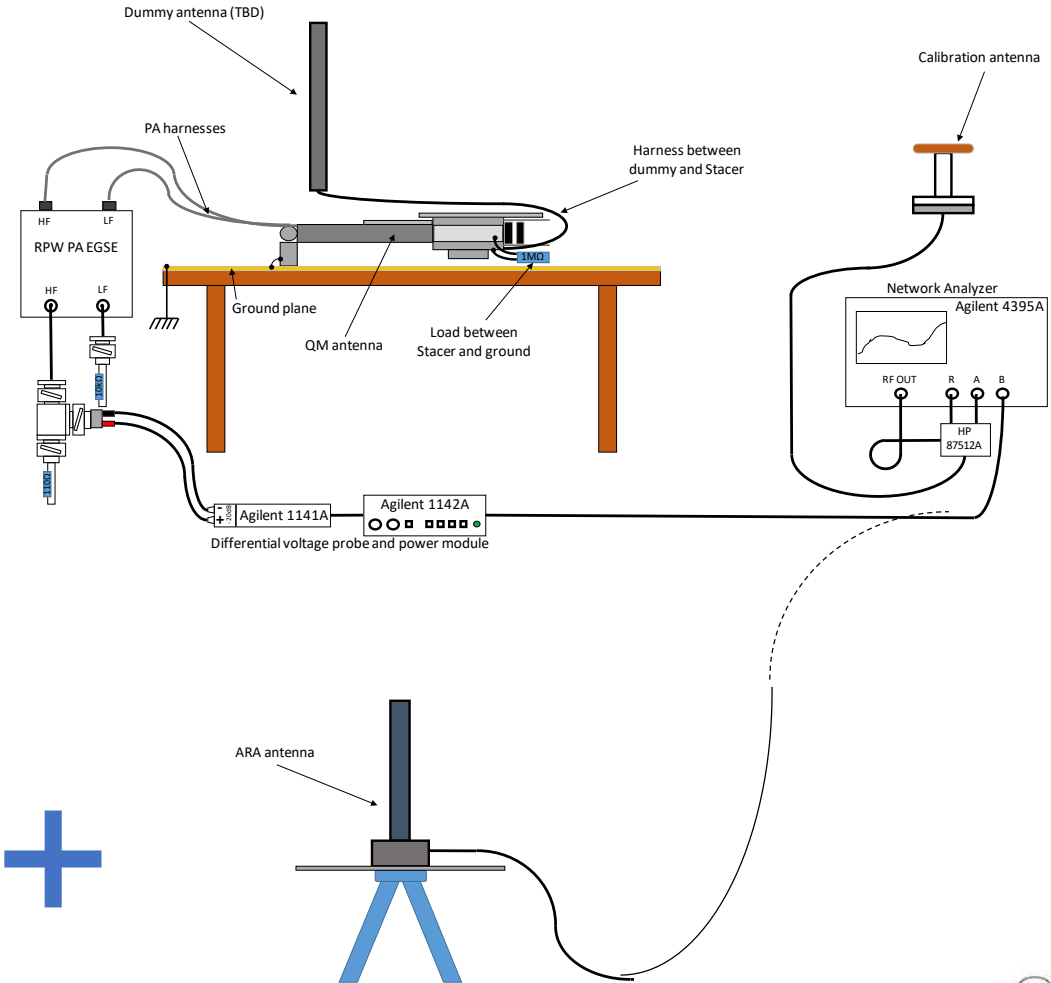
- Position 1
- Position 2
- ARA position

- **Frequency band tested: HF**



2 – Calibration (mid 2018)

- **Transfer function measurement test setup (dummy antenna) same setup / 2 positions**



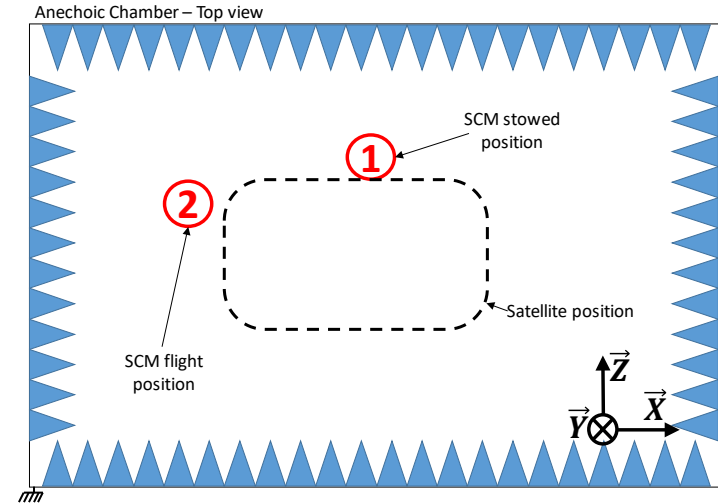
- **Transfer function measurement test setup (ARA antenna)**

2 – Calibration (mid 2018)

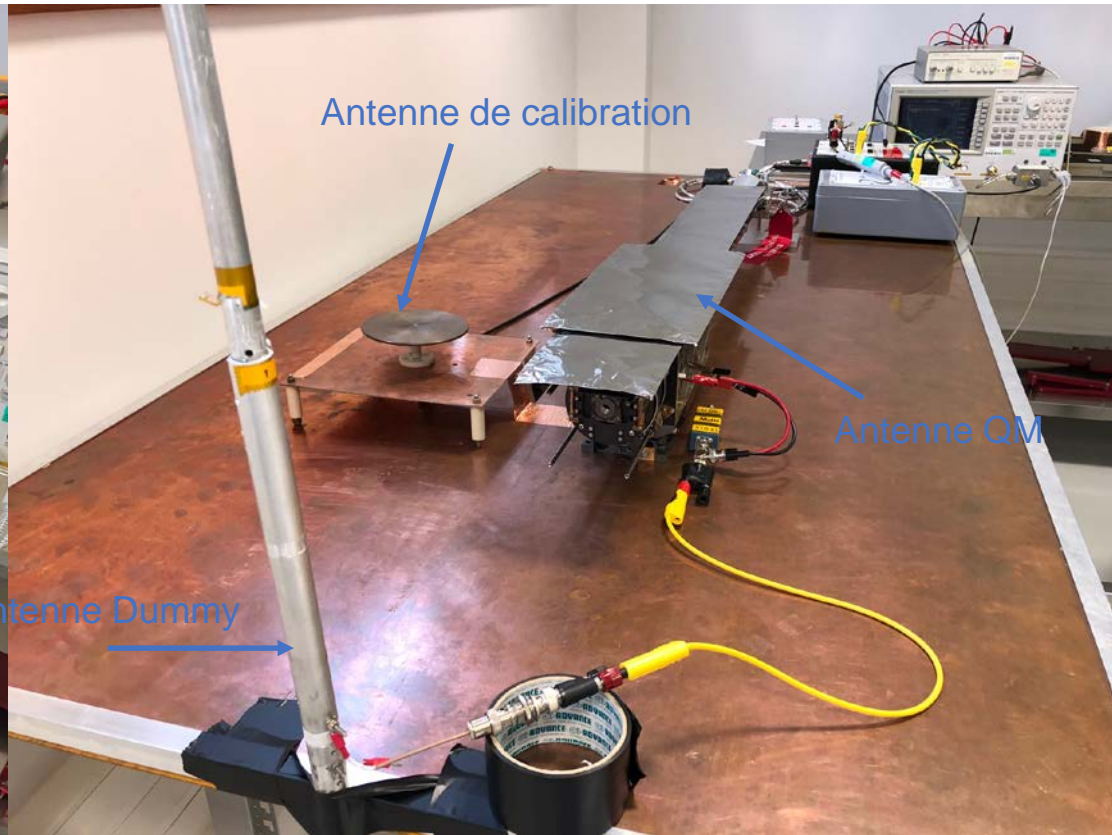
- **AC H field noise floor:**

- At SCM stowed position of (ie SCM FS on stowed I-Boom)
- At SCM flight position (ie SCM PFM at right flight position connected to S/C)
- Measurements done in 3 axes, 2 frequency bands

- **MFSA room might be measured also**



3 – Tests performed in cleanroom (may 2018)



3 – Tests performed in cleanroom (may 2018)

- When dummy antennas is coupled to the stowed antenna, we obtain a signal 20dB higher

