

RFI Test on the FAST Site

(as of December 2022)

1. Test Time:

2022-12-22 01:00-04:59 & 12:00-16:59

2. Test Spot:

At the bottom of the 7H feed support tower



Fig.1 RFI test spot at the bottom of the 7H feed support tower.

3. Test Operator:

Dr. Hu Hao at huhao@nao.cas.cn;

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4. Test Instruments:

Log-periodic antenna (R&S HL033, 80MHz-2GHz, 6.5dBi) ;

Low noise amplifier (87405B, Gain: 24dB, Noise Factor:5dB) ;

Spectrum analyzer (Agilent N9000A, DNAL: -147dBm/1Hz RBW)

5. Test Results:

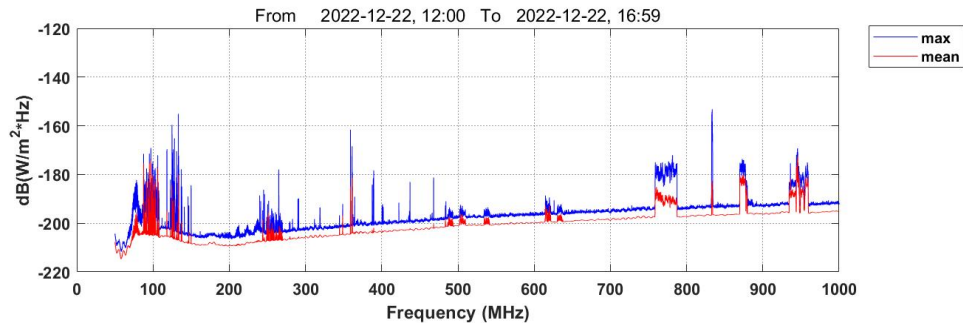


Fig. 2 RFI scan of 70-1000MHz in daytime.

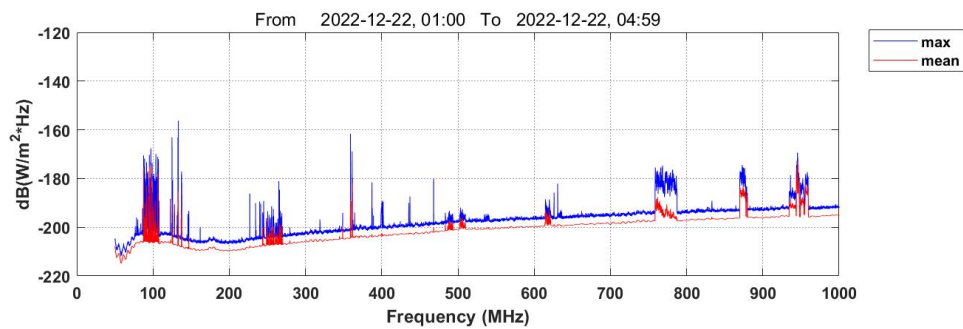


Fig. 3 RFI scan of 70-1000MHz in night time.

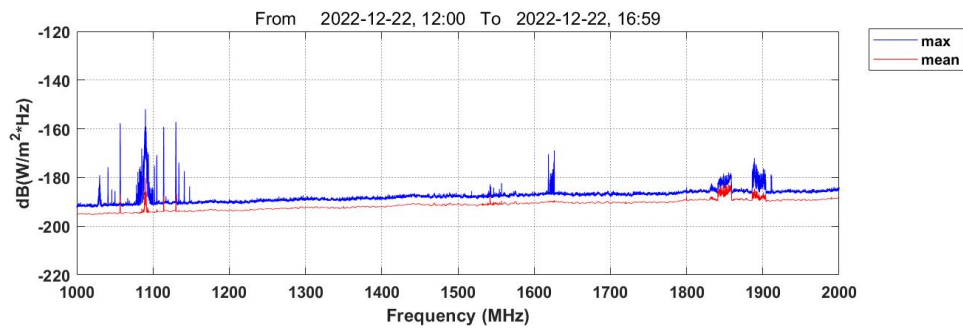


Fig. 4 RFI scan of 1000-2000MHz in daytime.

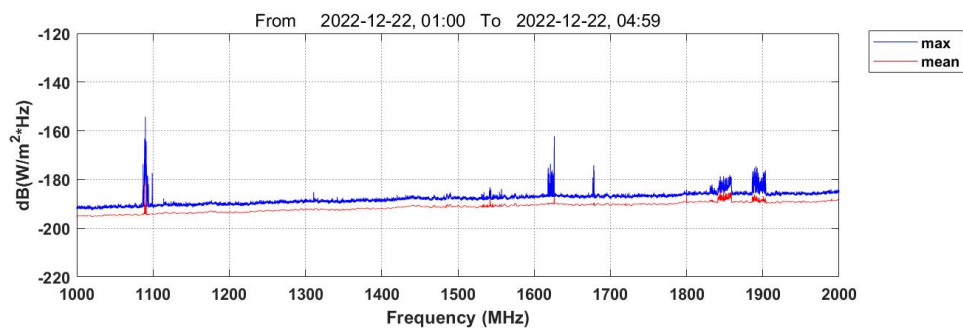


Fig. 5 RFI scan of 1000-2000MHz in nighttime.

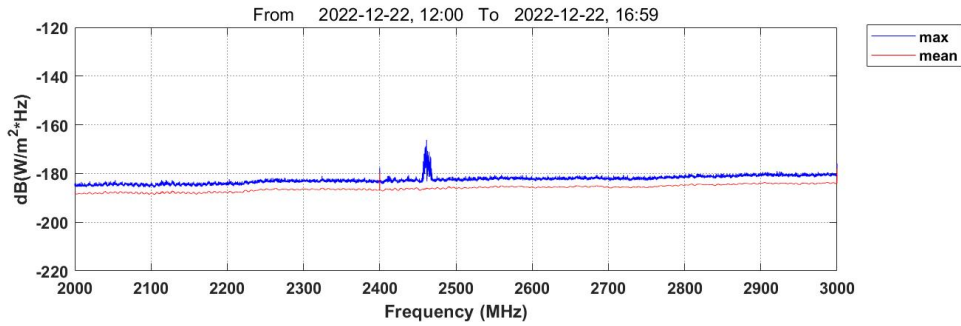


Fig. 6 RFI scan of 2000-3000MHz in daytime.

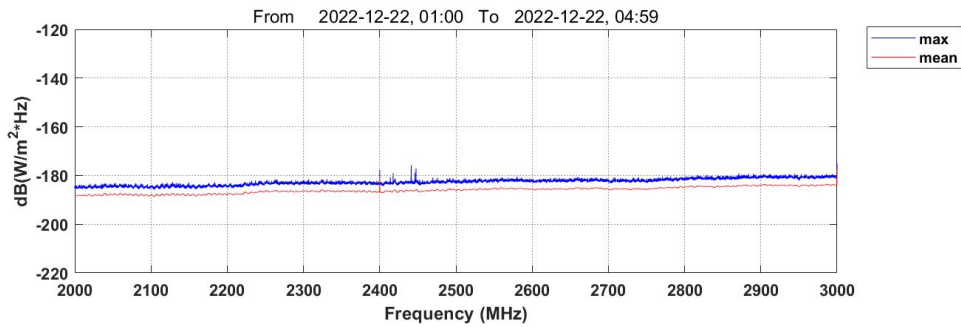


Fig. 7 RFI scan of 2000-3000MHz in nighttime.

Table: List of Known Sources of RFI

Frequency/band (MHz)	business
87-108	FM radio
117-137	civil aviation
145.9	Amateur radio intercom
147	Forest fire prevention
245-270	FLTSATCOM
361-368	Public security cluster intercom
411、 421	intercom
670.7-684.7、 742.4-749.4	Digital TV
758.8-787.3、 869-880、 934-949、 949-960	FDD downlink
1030-1140	civil aviation
1176、 1207、 1227、 1268、 1381、 1561、 2492	Navigation satellite
1467-1492	ASIASTAR
1525-1559	INMARSAT global mobile services
1616.06-1625.5	IRIDIUM satellite phone
1842-1859、 1887-1903	FDD downlink
1800、 2400	test system
2400-2480	WIFI