Show Notes for Episode 30
(TXF030)
June 2024

Yaesu FTM-500

Thanks to Yaesu UK for the loan of the review radio.
See the full specs of the Yaesu FT500 D and details of available accessories here

QO 100

The first geostationary amateur radio transponder (P4-A) on Es'hail-2 is a joint project by the Qatar Satellite Company (Es'hailSat), the Qatar Amateur Radio Society (QARS) and AMSAT Deutschland (AMSAT-DL).
The satellite launched from the Kennedy Space Centre at 20:46 GMT on Thursday November 15, 2018. It now sits in a geostationary orbit at 25.9 degrees East.
The amateur payload on Eshail 2 carries the Amsat designation QO 100 and it's massive footprint stretches from Brazil to Thailand
There is a 500khz Narrow Band Transponder which amateurs can use to communicate vis USB or narrow band digital modes. No FM , AM or other wideband modes are permitted. 2.7khz is the maximum bandwidth permitted.
There is also an 8Mhz wide transponder for DVB Amateur Television and other experimental digital modulation schemes.
Uplink is in the 2.4 Ghz band and downlink in the10Ghz band.
There is a lot of information about QO 100 on line, but a good starting point is AMSAT DL here A year after its launch the narrowband transponder bandwidth was increased and as a result a new band plan was issued which you can find here

DX Patrol Groundstation 2.0

Based in Portugal DX Patrol have been manufacturing and selling QO100 suitable up converters, down converters and amplifiers for some time.

Designed for those without previous microwave experience in mind their Ground Station 2 is a one box solution to the generation of uplink signals by transverting up to 2.4Ghz from a standard amateur transceiver and transverting the downlink for reception.
They also supply modified LNB's and Helical transmitting antennas for QO100 use.

The headline specifications of the Groundstation 2.0 are:

• Reception frequency: 10489.500 to 10490.000MHz;
• Transmission Frequency: 2400.000 to 2400.500 MHz;
• IF TX and RX Frequency: 28,500 to 29,000 / 50,500 to 51,000/ 70,000 to 70,500/ 144,500 to 145,000/ 432,500 to 433,000/ 1296,500 to 1297,000 Mhz;
• GPS Lock internal 10MHz reference;
• Lock to GPS and OCXO delay to 1 minute fully operational. (version 2.0 only)
• Transverter stage output up to 100mW;
• Maximum Output RF Power 10 W @2.4 GHz based on NXP MHR1008NT1; (BLP9G0722-20g in V2.0)
• Factory set input power 500 mW for VOX operation;
• Maximum input RF 5W (1W optimum drive);
• Auto TX and RX by VOX PTT (optional PTT RCA connector on back panel)
• External 10Mhz reference Output.
• Supply voltage 12V to 14V;
• Thermal alarm > 60º C;
• SWR protection and alarm> 1:3;
• High voltage input alarm;
• Power output bar and Watt indication;
• SWR bar and ratio indication;
• Current consumption indication and alarm
• Internal 5A fuse protection;
• LNB Phantom Power PTC protection (bias-T)
• NMEA GPS indication;
• Number of GPS satellites in range;
• GPS coordinates;
• QTH Locator presentation on screen;
• UTC clock and date;
• Wireless Firmware upgrade

- New fan cooling
- External RX-gain adjustment
- External Vox-delay adjustment
- Optional Morse code instructions for Blind operators

Find more information on this and other DX Patrol products here
Our grateful thanks to DX Patrol for the loan of the review equipment.

Sidmouth Amateur Radio Society

Our thanks to Dave Lee G6XUV and the SARS team for letting us look at their amazing club house. We wonder if other councils around the country have unused premises that they don't know what to do with that could be similarly re-purposed.

Let us know if you have embarked on a similar project or if you would like more information about how Dave and the SARS team went about it.
Email us at info@txfactor.co.uk
Find out more about SARS on their Facebook page

Thank you for watching TX Factor!

Please note that all URL links included in these notes are, to the best of our knowledge, correct and have been tested, although from time to time some may appear not to be working at the time of reading this. Sorry for the inconvenience, however, these things do happen, and a search on Google or similar should provide you with more up-to-date links.

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