

# The 144 MHz EME NewsLetter

©DF2ZC

...since 2003



Issue 2/2025 3 Feb 2025

## Yuri UT1FG/MM Working EME!

As many of us know Captain Yuri, UT1FG always sets up an amateur radio station whenever he takes command of a ship. He usually runs 2 m, 70 cm, 6 m and sometimes also HF: many new water squares made it to the logs the past years. His latest term with the bulk carrier BRANT lasted from end of September 2024 to this month. It took him from Netherlands to Greece to New Orleans and then to Canada, from where he sailed to Northern Ireland.



The 7/14ele yagi on board the BRANT.

---

On 2 m his setup consists of an IC706MKII, a LDMOS sspa with roughly 250 W out with built-in PA3BIY LNA and an antenna from Goran, YU1CF: <https://antennas-amplifiers.com/2m-70cm-dualband-high-power-antenna-2m70cm21wp/> It is a combined 2m/70cm yagi and has 7 elements on 144 MHz, resulting in about 10 dBd gain. Together with cable attenuation of some 1,3 dB the ERP comes to about 1,8 kW, a value which during good conds is sufficient for working a bunch of 4 yagi stations.

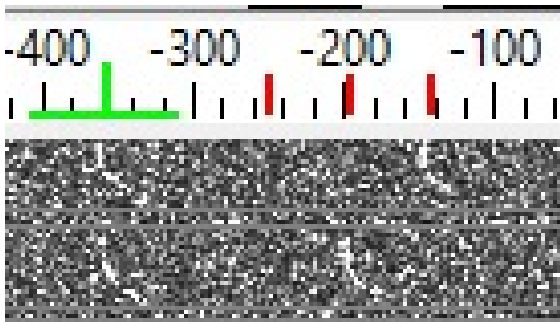
However, on a ship the local noise is the big issue: there are many transmitters, power supplies, lights, machines which all produce interference. On some ships before the noise level was permanently S5 or worse, no way for EME. Luckily on the Brant it seems to have been better than on the ships in the years before. In December I2FAK and DF2ZC discussed whether it would be worth a try to conduct some EME tests. The antenna was mounted on the starboard side of the ship, hence at the right side. This meant when the Brant travelled Northwards or Eastwards the yagi would point straight to the ocean and have the ship's QRM only from the rear. Not to forget possible sea gain effects.



**Yuri's shack onboard of the Brant.**

First tests started on December 17<sup>th</sup> when UT1FG/MM was crossing the square FM52 East of the Bahamas. Indeed EME signals could be copied at I2FAK, which is no real surprise given Franco's 27 dBd gain in the horizontal and 25 dBd in vertical plane. However, also DF2ZC with "only" 21 dBd gain in hpol copied Yuri's echoes from the moon. Both stations completed a QSO with UT1FG/MM in that square. Best signals at DF2ZC were -25 dBd. Hence, the proof of concept was completed.

Yuri's signal was easy to find, only decoding meant a problem: The first 20-25 seconds of the TX period the JT65 sync looked like a hockey stick, the frequency quickly moved about 20 Hz only to become stable then. Single tone messages can be easily decoded by eye, callsigns did not always

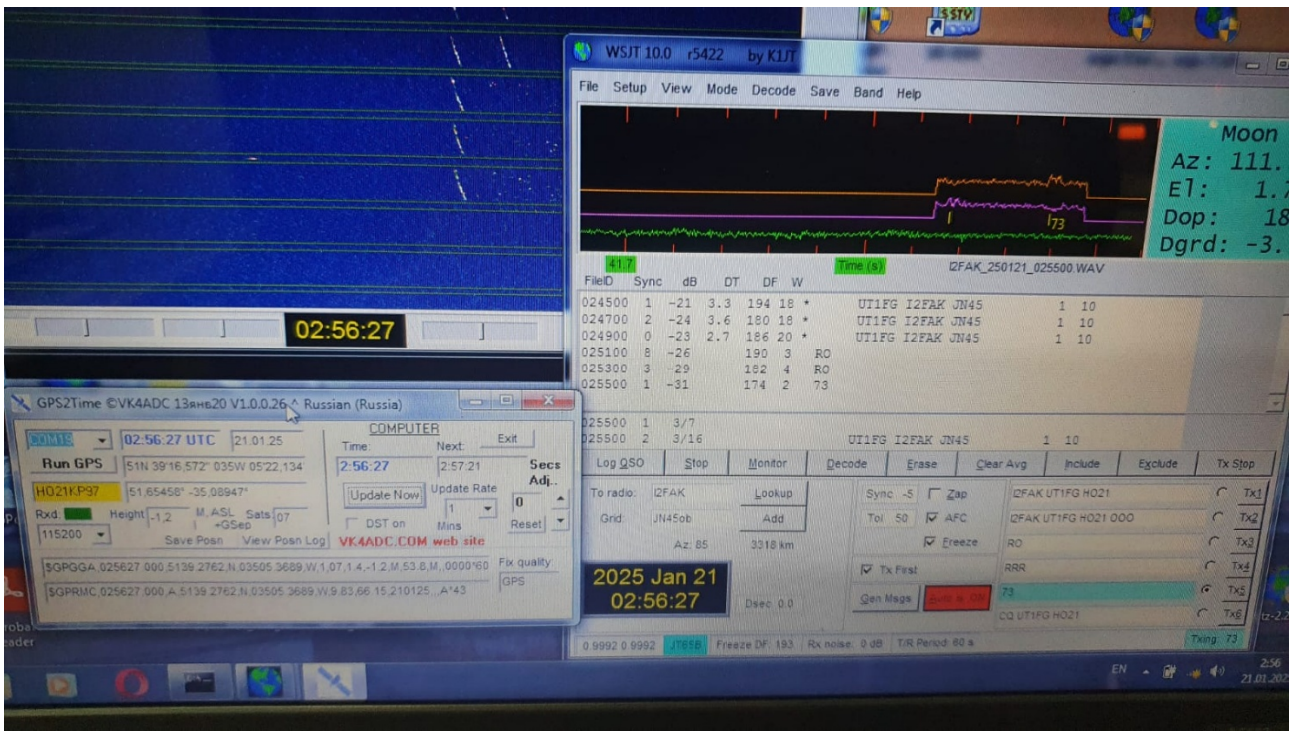


yield a decode though the signal was strong enough. It was a patience game. See picture left with RRRs followed by 73s from UT1FG/MM, all with the hockey stick drift).

DF2ZC tried WSJT10, WSJT-X and MSHV in parallel but no software showed a difference. All often failed. Only by brute force which means moving the RIT slowly to lower frequencies during the first 25 seconds helped.

Apparently the IC706 does not have enough stability. The only advantage was that this hockey stick helped confirming that a sync, even if barely visible, was indeed from UT1FG/MM and not a weak birdie from somewhere in the neighbourhood.

Success fosters hungers for success. Now, as it obviously worked, Franco and Bernd also made schedules with Yuri for the following days: Many new water squares made it into the logs while the Brant was travelling North. Sometimes Franco even managed to work two or three squares per day. Since this was no secret operation – in the days of MAP65 nothing is secret anymore – more stations joined in. SM2BYC for example also worked Yuri rather often, as did RK3FG and UA3PTW. IK4WLV and S51ZO also were happy to get into UT1FG’s log. On average UT1FG completed with 4-5 stations during every moonrise (he has no elevation except for some fixed 10°). In the end it was obvious that many 4 yagi stations can theoretically be worked by him though he runs just a QRP setup.



Screenshot of I2FAK’s signal at UT1FG/MM: The drifts are clearly to be seen.

QSOs could be made up to 20° moon elevation at Yuri’s location, also at degradation values of -5 dB at times. The peaks of the ground gain effect were easy to notice when the signal popped up again after NIL for some minutes. These days Yuri is preparing to travel home to Odessa, Ukraine for his vacation period until the end of summer. Let us hope he gets a similarly noise-quiet ship in autumn. Noise-quiet in this contest does not mean no noise at all: The comparison of the signal strengths of

---

the copied EME echoes still show that UT1FG/MM copies substantially worse than he should, with respect to the output differences between him and his partner stations. If that difference caused by QRM can be bridged by power, QSOs should be possible also his next turn. Und squares deemed unworkable could be possible, some hours during moonrise and -set.



UT1FG, PA3BIY and DF2ZC on the bridge of Brant when delivering Yuri's equipment on September 25<sup>th</sup>, 2024 in Ijmuiden, Netherlands

## **Miscellaneous**

### **Yaesu FT857d Wanted**

To tackle the problem with frequency stability Yuri UT1FG is now looking for a FT857d in mint condition. The rig should be no older than 10 years. If you have one sitting on the shelf and collecting dust, please contact DF2ZC: [BerndDF2ZC@gmail.com](mailto:BerndDF2ZC@gmail.com).

---

## LiveCQ Currently Offline

René, PA9RX, reports about the status of the famous LiveCQ CQ logger: He stopped with it and gave it to another moonbouncer. In the meantime the domain name is taken by a company. So the service will be back at another place in some time.

## EME Conference 2026

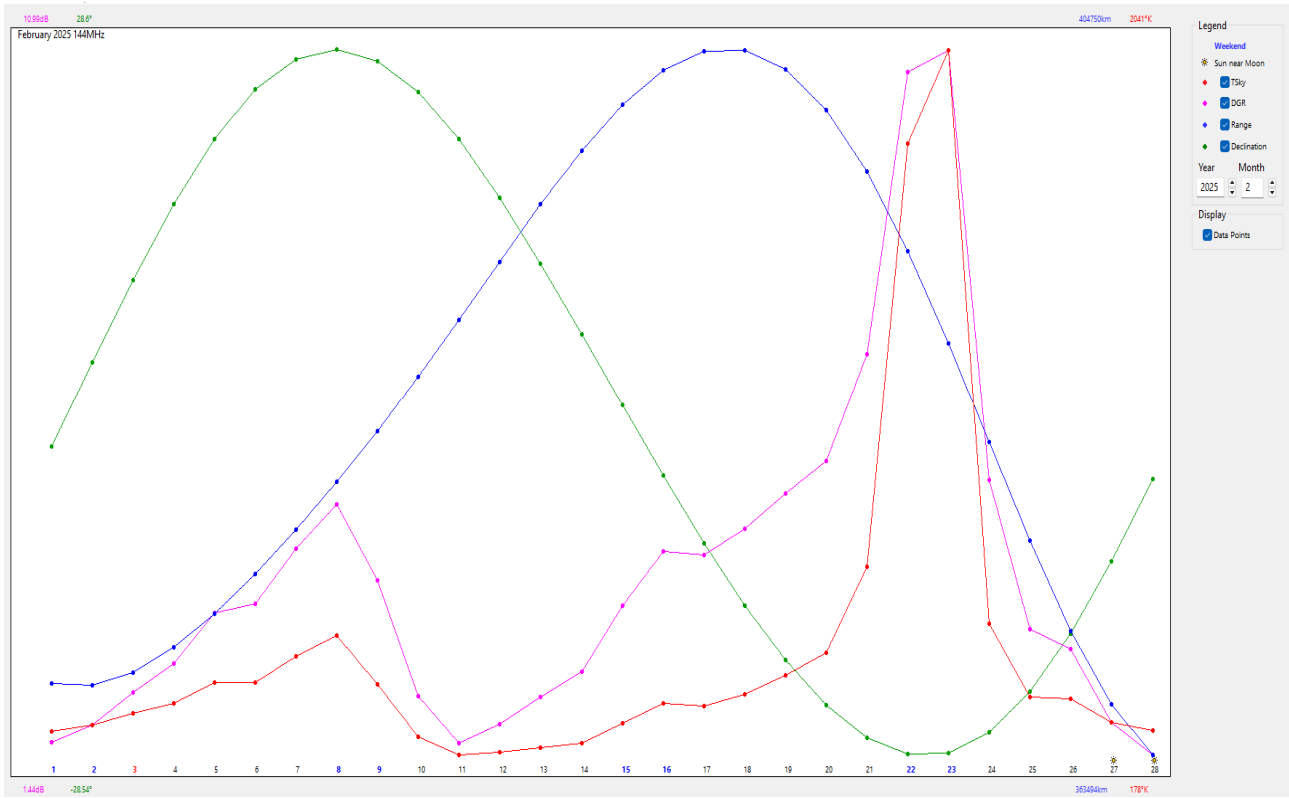
The EME Conference 2026 will be held May 28<sup>th</sup> - 31<sup>st</sup>, 2026 in Puerto de la Cruz, Tenerife, Canary Islands. The conference will take place at the Hotel Botánico & The Oriental Spa Garden (5 Stars). For more information please see <http://eme2026.moonbounce.info/eme2026.html>

## Time Table

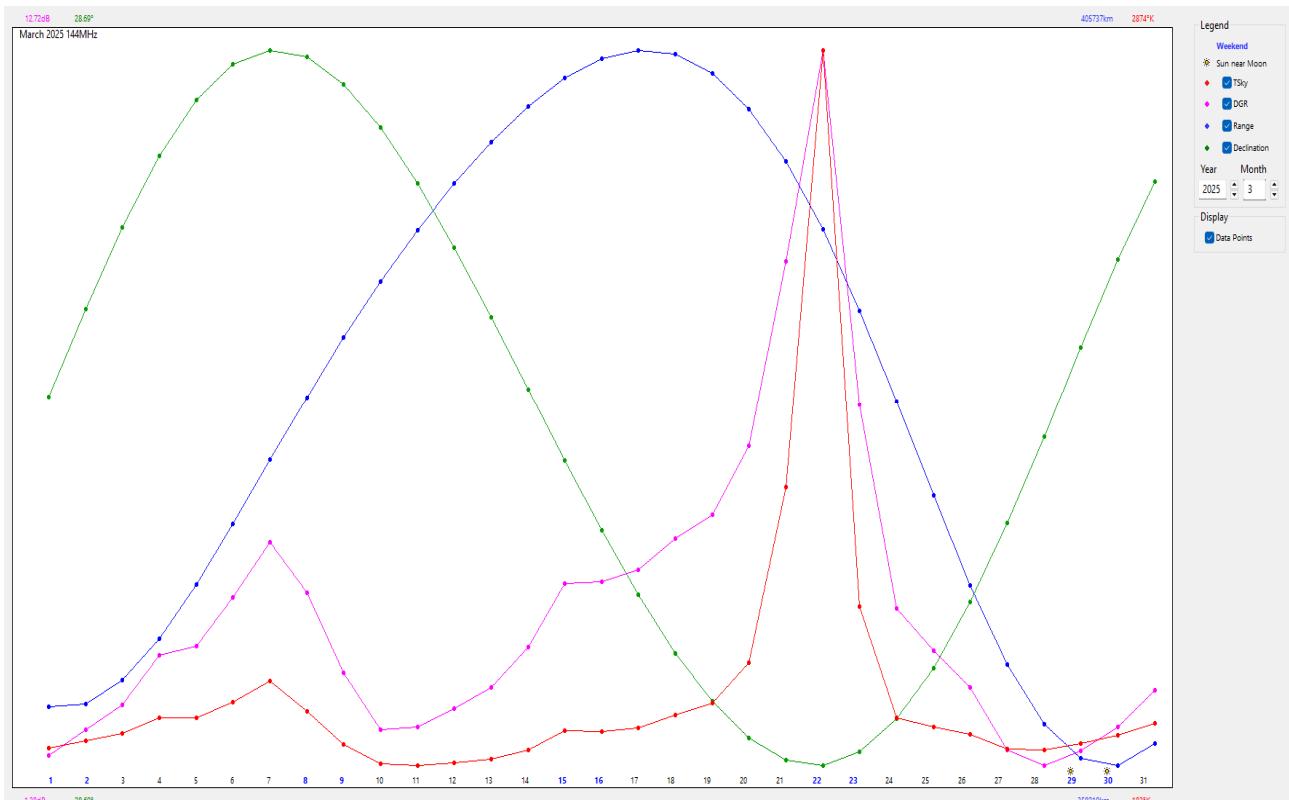
3 Mar 25      The March issue of the 144 MHz EME Newsletter ready for download.



# Moon Conditions



Moon Graph February 2025



Moon Graph March 2025

(Courtesy of David GM4JJJ (sk 2019) [www.gm4jjj.co.uk/MoonSked/moonsked.htm](http://www.gm4jjj.co.uk/MoonSked/moonsked.htm))