



# NEWSLETTER-AMSAT-EA

03/2018  
MARCH

[contacto@amsat-ea.org](mailto:contacto@amsat-ea.org)

[eb1ao@amsat-ea.org](mailto:eb1ao@amsat-ea.org)

Translation by Fernando EC1AME

**AMSAT**

## D-STAR D-Star One - Phoenix

The D-Star One sat , with its callsign DP1GOS, it's also known as Phoenix as a symbol of rebirth and renewal after the first mission in November 2017 when the satellite was lost due to a launch failure . Now the satellite is in orbit and we hope it will be soon available for amateur use, after being successfully launched on February 1 2018. The D-Star One is a 3U Cubesat with four radio modules with D-STAR capabilities, all of them in half-duplex mode. Two of those modules are used for telemetry and telecommand and they operate in the same frequencies. Telemetry can be received on 435.700 Mhz. The repeater frequencies are:



Phoenix - German Orb. Systems

Uplink 437.325 Mhz / Downlink 435.525 Mhz, with a power of 800mW.

## FENGMA(FMNNIU 1 1)



FengMaNiu 1 (FMN 1)  
[Link Space Aerospace Tech.]

FengMaNiu 1 (FMN-1) is a 3U-CubeSat developed by Link Space Aerospace. The main mission of this sat is to test several components like cameras in space. The FMN-1 will also work as a repeater for amateur radio ops worldwide. The FengMaNiu 1 was launched on February 2, along with the Zhangheng 1 and several small satellites on board a CZ-2D launcher. The frequencies:

Uplink: 145.945 Downlink and telemetry: 435.350

## VY0ERC EN SATÉLITES FM



After a crowdfunding campaign , the VYØERC club will be active in the next few months from Nunavut and they have plans to activate these grids: EQ79 and ER60. They'd like to work some FM sats with track in the US, some European zones and some of Asia. The club has received a new Arrow II antenna, good quality coax cables and a Kenwood TH-D72A. The club is located close to the Eureka Meteo Station , which is at 79°59'00"N 85°56'00"W in the island of Ellesmere (IOTA NA-008) . VYØERC has its headquarters in the Polar Environment Atmospheric Research Laboratory (PEARL) (RidgeLab) which is located some 7 miles to the meteo station. More info in the [web](#).

## ANNOUNCED OPERATIONS

**9A90P**, The Croatian Flora Fauna Radio Club will be active on satellites from Palagruza Island, with these references: EU-090, CI-084, LH 0057 and locator Jn82dj . This activation will be june 16-23 . More info in [web](#)



**UT1FG/MM**, Yuri is back in the ship and is active in some passes over the atlantic. To check his location do a search for his vessel “Seahorse” in Marinetraffic [check it now](#)

**AA5UK** is active “holiday mode” from the Cayman Islands as ZF2AE/ZF8, since february 28 and till march 11. You can see his agenda published in the AMSATBB and his twitter: [@aa5uk](#) and [@zf2ae](#) .He is active from EK99hi .

**VE3HLS**, Ken has plans for the easter weekend, april 1, to activate these grids FN36, 37,46 and 47.



EA4GSX, Miguel Angel from IM79

## PAST ACTIVITIES



Ken, VE3HLS in FN38/39

**VE3HLS**, Ken, was active on february 2 and 3 from FN05/07/08/17/18 and on the 17 and 18 from FN38/39/48/49.

**UT1FG/MM**, Yuri was active from some wet grids in the atlantic ocean in his way to Quebec and Algeria

**EA4GSX**, Miguel Angel, was active from IM79.

## SOME GOOD PRACTICES WHEN USING SATELLITES

These days many people is complaining about the way some operators use satellites. Lets remember some basic guidances to be a good sat operator when a bird passes thru a crowed area and not to cause QRM to others:

**IF YOU DON'T HEAR THE SATELLITE, DON'T CALL** and **DO NOT** repeat a QSO with the same station day after day, sure there are more stations trying to do that contact (this is very important in the FM sats). If you hear a DX or /p station calling from any new grid , give him preference as from portable it's not easy to get into the sat, they normally have simple stations, so let them in first!

If you listen to some priority station calling and the rest of operators are not aware of it, help them understand that station is there. If we all can practice these “basic rules” sure we will enjoy more and more.

## SUPPORT AMSAT-EA

You can send articles, news, activities or any interesting info. Or donating any amount to this spanish account or paypal us. Our only way to finance AMSAT- EA.

**ES81 2038 2470 6860 0035 1809**



## ACTIVE SATELLITES LIST

Robert, KE4AL shares with us this up to date list of active amateur radio satellites. He also includes a quick guide for those using a Yaesu FT817 with the functions used to operate in satellite mode.

U/v Linear Birds – USB downlink   LSB uplink			
<b>AO-7</b>	Down:	145.925	<b>145.950</b> 145.975
	Up:	432.175	<b>432.150</b> 432.125
<b>AO-73</b>	Down:	145.950	<b>145.960</b> 145.970
	Up:	435.150	<b>435.140</b> 435.130
<b>CAS-4B</b>	Down:	145.915	<b>145.925</b> 145.935
	Up:	435.290	<b>435.280</b> 435.270
<b>EO-88</b>	Down:	145.960	<b>145.975</b> 145.990
	Up:	435.045	<b>435.030</b> 435.015
<b>UKUBE-1</b>	Down:	145.930	<b>145.940</b> 145.950
	Up:	435.080	<b>435.070</b> 435.060
<b>XW-2A</b>	Down:	145.665	<b>145.675</b> 145.685
	Up:	435.050	<b>435.040</b> 435.030
<b>XW-2B</b>	Down:	145.730	<b>145.740</b> 145.750
	Up:	435.110	<b>435.100</b> 435.090
<b>XW-2C</b>	Down:	145.795	<b>145.805</b> 145.815
	Up:	435.170	<b>435.160</b> 435.150
<b>XW-2D</b>	Down:	145.860	<b>145.870</b> 145.880
	Up:	435.230	<b>435.220</b> 435.210
<b>XW-2F</b>	Down:	145.980	<b>145.990</b> 146.000
	Up:	435.350	<b>435.340</b> 435.330

V/u Linear Birds – USB downlink   LSB uplink			
<b>FO-29</b>	Down:	435.800	<b>435.850</b> 435.900
	Up:	146.000	<b>145.950</b> 145.900
<b>Fox-1E</b>	Down:	435.760	<b>435.775</b> 435.790
	Up:	145.890	<b>145.875</b> 145.860

V/u FM Birds – 67.0 Hz tone on uplink			
<b>SO-50</b> (74.4 Hz On)	Down:	436.805	<b>436.795</b> 436.785
	Up:	—	<b>145.850</b> —
<b>LilacSat2</b> (no tone)	Down:	437.210	<b>437.200</b> 437.190
	Up:	—	<b>144.350</b> —

U/v & L/v FM Birds – 67.0 Hz tone on uplink			
<b>AO-85</b>	Down:	—	<b>145.980</b> —
	Up:	435.160	<b>435.170</b> 435.180
<b>AO-91</b>	Down:	—	<b>145.960</b> —
	Up:	435.240	<b>435.250</b> 435.260
<b>AO-92</b>	Down:	—	<b>145.880</b> —
	U/ Up:	435.340	<b>435.350</b> 435.360
<b>Fox-1Cliff</b>	L/ Up:	1267.320	<b>1267.350</b> 1267.380
	Down:	—	<b>145.920</b> —
<b>ESEO</b>	U/ Up:	435.290	<b>435.300</b> 435.310
	L/ Up:	1267.270	<b>1267.300</b> 1267.330
<b>ESEO</b>	Down:	—	<b>145.930</b> —
	L/ Up:	1263.470	<b>1263.500</b> 1263.530

FUNCTION ITEMS	
<b>BAND</b>	Press <b>[BAND/DWN]</b> or <b>[BAND/UP]</b>
<b>MODE</b>	Press <b>[MODE ◀]</b> or <b>[MODE ▶]</b>
<b>SPLIT</b>	Press <b>[F]</b> , rotate <b>[SEL]</b> for "A/B, A=B, SPL" Press <b>[C]</b> for Split; Press <b>[C]</b> again to cancel
<b>TOPE</b>	Press <b>[F]</b> , rotate <b>[SEL]</b> for "RPT, REV, TON" Press <b>[C]</b> for Tone; Press <b>[C]</b> again to cancel
<b>PL TONE</b>	Press <b>[F]</b> , rotate <b>[SEL]</b> for "RPT, REV, TON" Press/hold <b>[C]</b> for Tone Freq; Rotate <b>[SEL]</b> for desired CTCSS; Press/hold <b>[F]</b> 1 sec to save
<b>MEMORY</b>	Press <b>[F]</b> , rotate <b>[SEL]</b> for "MW, MC, Tag" Press <b>[A]</b> for MW; Rotate <b>[SEL]</b> for desired channel; Press/hold <b>[A]</b> 1 sec to store
<b>M LABEL</b>	Press <b>[F]</b> , rotate <b>[SEL]</b> for "MW, MC, Tag" Press <b>[C]</b> 1 sec for Menu #35 MEM TAG Press <b>[SEL]</b> ; Rotate <b>[DIAL]</b> to select letter; Rotate <b>[SEL]</b> for next letter; Repeat as needed Press/hold <b>[F]</b> 1 sec to save
<b>MTUNE</b>	In Memory Mode, rotate <b>[DIAL]</b> , as needed
<b>POWER</b>	Press <b>[F]</b> , rotate <b>[SEL]</b> for "PWR, MTR" Press <b>[A]</b> for Power; Rotate <b>[SEL]</b> for L1 □ 3 or H
<b>BATT</b>	Press <b>[F]</b> , rotate <b>[SEL]</b> for "CHG, VLT, DSP" Press <b>[B]</b> for Display; Press <b>[B]</b> again to cancel

MENU ITEMS	
Press and hold <b>[F]</b> key for 1 sec	
Rotate <b>[SEL]</b> knob to select desired menu item	
Rotate <b>[DIAL]</b> knob to change value	
Press and hold <b>[F]</b> key for 1 sec to save, or <b>[C]</b> momentarily to cancel	

Menu Item	Options
04	AM&FM DL ENABLE/DISABLE (DIAL)
07	ANTENNA FRONT/REAR
10	BACKLIGHT OFF/O/AUTO
11	BATT CHG 6/8/10 HOURS
15	COLOR 1=BLUE/2=AMBER/3=VIOLET
16	CONTRAST 1 ~ 12
29	FM MIC 0 ~ 100
30	FM STEP 5/6.25/10/12.5/15/20/25/50 KHZ
33	MAIN STEP FINE/COARSE
34	MEMGROUP OFF/O/AUTO
35	MEM TAG (ALPHA/NUMERIC)
45	SQL/RFG RFGAIN/SQL
46	SSB MIC 0 ~ 100
47	SSB STEP 1/2.5/5 KHZ
48	TOPE FREQ (50 TONES)



### SOCIAL MEDIA

STILL NOT FOLLOWING US ON SOCIAL MEDIA?  
WHAT ARE U WAITING FOR.....?

@AmsatSpain



[https://www.facebook.com/AMSAT-EA-Espa%C3%B1a-128212603932305/?ref=br\\_rs](https://www.facebook.com/AMSAT-EA-Espa%C3%B1a-128212603932305/?ref=br_rs)

## CU2ZG (Pedro) Rover in Europe

Starting half a dozen years ago, I have grown the habit to travel for my birthday. Because it happens in February, if I want to keep it close to home it is going to land in the Northern Hemisphere where it is winter, but some years I go for an equator cross to warmer lands. This year being no exception, in terms of travel, I looked for possible destinations and decided for somewhere close. Among the options, there stood Austria.

Travel preparations were done within two weeks of departure, and around one before it happened. Patrick, WD9EWK, mentioned on Twitter that if my travels would take me close to the tri-border point of Austria, Slovakia and Hungary it would be a rare chance to activate three countries in one shot. In fact, NZ5N had done that in summer 2011. I looked at the map and realized Vienna, my main stop, was at mere 60 Kms from that point. That was a trigger.

### **Preparations**

I had to take something light with me. One thing is to travel to some place you have already been at and you can take a full Arrow and a Full Duplex FT-817/857 set that requires a bag on its own like my usual Christmas trips to HM58, other is to visit a new country. You want SSB capability but light and compact.

I have in the car a Wouxun KG-UV9D, its standard long duckie, an AL-800 telescopic whip, along with the exterior Nagoya R3. Using AO-91 perfect timing SSO orbit that allows lunch time QSOs I ran a full set of tests with those antennas. The best is the AL-800 that starts picking up signals at around 7 degrees and AO-91 hears me above 20. Good for casual daily contacts, but not good enough for lower elevations. Being in the middle of the Atlantic the amount of possible QSOs drops drastically when the footprint hits only half of the Continent. Most people will not go for a pass that is "half empty". That brings a challenge to go for very low elevation passes where the odds to find someone new are higher. There are two bonuses though. The RF noise and interferences in the islands are substantially lower than those found in highly populated areas such as big cities, and I am surrounded by the ocean. The ocean effect is observed in nearly almost every pass, and these two bonuses combined give me an advantage. That is where the antenna plays a huge role. I could simply take my Alaskan Arrow in its 3+8 configuration every morning to the car and bring it back home in the evening, but it is not practicable. I simply needed something smaller, light, compact, that could be disassembled, have enough directivity and high front-back ratio to at least go down to 1 degree elevation. Here comes the short Moxon (<http://www.arsatc.org/projetos.html>). Built it and ever since kept it in the car. I can work AO-91 down to -1.5 degrees. The construction material used allows fast assembly and can be taken in any travel suitcase occupying the same amount of space the Alaskan Arrow in 2+5 config does. You might be thinking "if it takes the same space why don't you just take short Arrow with you on those trips?". Well, that requires two radios or a duplexer, right? I want light, really light, simple, but efficient. I tend to think about it as the Holy Grail for satellite antennas: light, small, simple, efficient, quick assembly, down-to-horizon, dual band, single feed, fits in a bag.

So, I have an antenna, the second Wouxun KG-UV9D Plus that is kept at home for Full-Duplex, and a FT-817. I had never used that 817 with the Moxon but a test on AO-7 revealed that everything was in proper working condition.

### **Activation**

From February 18th to the 21st I tried several times to work any satellite in the evenings from the hotel room in Vienna downtown. Assuming that the RF interference in the area would be high, my hopes were small. Surprisingly I could work AO-92, CAS-4B, SO-50, FO-29. However, the amount of people trying to get in the satellite is higher than at home, that poses an increased difficulty to log any QSO. In those days, I did not get any.



*Called AO-92, FO-29 and CAS-4B from Jn88*

A last minute change of plans took my Czech Republic visit to a day later than what I had announced on Twitter and the AMSAT-bb. So in morning of the 22nd I found myself in OK land and a AO-92 pass coming about. That pass logged me 2 QSOs. Happy and re-energized about it, the 50 minutes drive to the tri-border point passed by quick but anxiously.

The plan was simple. There were two good passes on AO-91, 11:10 and 12:46, plus AO-85 and AO-7. Not knowing the AO-7 status and the somewhat low angle of AO-85 I would skip these two satellites and take my full chances on AO-91.

I approached the spot from the Hungarian side. I knew the road would be snow covered, but for my surprise, it was unsuitable for walking too. Quick looking into the map I found two other options to get there: a second one from the Hungarian side, and one from Austria. That last was the most promising one. Funny that to get into that road I had to leave Hungary, cross Slovakia and re-enter Austria. It is something you do not think too often when you live far from the border, and sounds like a long way.

Good thing that I still had about 45 minutes to spare, which allowed the re-approach just in time for the 200 meters hike to the spot carrying the Wouxun and the Moxon. The weather was nice though. Despite the overcast skies, temperature was holding at 1 degree Celsius.

The place itself is a sculpture park surrounded by farmland. Where the old borders fences once existed there are now small pillars reminding where those still are. There is a triangular landmark where the three countries touch. It holds an Ö on the Austrian side (Österreich), an S on the Slovakian and an M on the Hungarian (Magyarország). Indeed a nice spot for a summer picnic.

I had a few minutes to spare and took those to check the equipment. Tuned into the Bratislava airport frequencies and immediately got signals.



*Triborder point and equipment*

I was able to hear the downlink right at AOS. What amazed me was the amount of people trying to get in. Way more than the other days. These new “easy sats” are drawing attention to many new operators from new DXCCs and grids, which is very positive. The downside is that they are not used to satellites and eager to log QSOs. Calling CQ or shouting their callsigns and grids every 2 seconds simply monopolizes the pass and has become an often aspect of every pass, specially the FM ones. I do not mind those who shout out, but not allowing for others to call back, or like me, to try finding the correct polarization simply reduces any chance for a QSO, for both them and me. Even so, I was able to log four QSOs.

Between passes, we just contemplated the spot having fun around the area. Activities from hugging the landmark so we could be in three countries at the same time, or throwing snowballs from one country, have it go over another and land on the third, made our day.

The second pass was taken initially by the Gibraltar station. Being rare DXCC everyone has been taking the opportunity to call him and log a new one. I took the time letting everyone to log it and as soon as it sounded calm announced myself as “OE/OM/HA/CU2ZG

JN88”. Logged three QSOs on that pass.

## **Conclusions**

There are always some lessons you learn within a few seconds after you spot them. I have taken gear with me to the USA, Canada, Australia, New Zealand, UK, Portugal mainland, Madeira and to other islands within the Azores. So far I have been active in 8 grids and tried without success from 3 others. I have witnessed several other ways of operating satellites, but always assume that despite you hear similar ways there will always be something different. Either someone’s way of calling, callsigns you are



*Operatin from Triborder*

not used to, even the amount of people on the satellite.

Another good advice is to take more than you need. Always. Might be extra batteries, cables, connectors, or simply extra radios. For this trip I ended up not logging a single QSO on SSB, and the final option was to not use it at the tri-border point, but the radio was there.

Always test your gear before you leave home, and before every pass. One of the most frustrating things it can happen to me is not getting to the satellite, start to wonder if there is a problem with the antenna, cable or radio, just to find out I have the incorrect configuration. All that during a pass.

Plan for the unplanned. Expect delays or mishaps. If I had no spare time when I found the picked road would not take me anywhere, I would have missed one pass.

Too bad the JN87/88 line was standing just some 300 meters away to the south, otherwise it would have been a triple-country double-grid activation.

Looking at the map as I write this article I cannot deny I am a bit disappointed for not being in JN89 for that AO-92 pass from the Czech Republic. It was just a short drive to the north.

Anyway, all fun.

**73 Pedro CU2ZG**

## TPM II Antenna (EA4CYA)

This story is a bit wide, so I will try to resume the main ideas:

TPM II of UHF: directional antenna with a bandwidth of  $30^\circ$  and enough gain to work with azimuth rotors and a fix elevation of  $15^\circ$ . You can choose to work with four of them and switch between them with a remote switcher. You can build it with right circular polarization and left circular polarization and you can switch between them. You should pay attention and use the best feed line that you can allow, or you can choose to use a preamplifier.

More info: [www.ea4cax.com](http://www.ea4cax.com)

