

SSETI Listening project report from Croatia – 9A7P team



Dragan, 9A2SX testing his helix antenna

interested in space exploration, besides their main activities. The connection of these two groups was made years ago, since some of the people are active in both or them. This time, they were quicker in gathering information – they informed us about the SSETI Express project and asked us if we wanted to participate in the contest. Our reaction was: «why are we still standing still?».

Experiences

The oldest member of our team, Dragan, 9A2SX, had some experience in VHF/UHF antenna building, so he volunteered for the hardware part of the project. Good start was quadrifilar helix antenna for VHF, that was built some time ago by Marko, 9A6NCM and Marko, 9A8MM and showed very good characteristics in satellite reception. Dragan made his version of antenna in just a couple of days, using only the things he could find at home: piece of RG-58 coaxial cable, CD plastic, a pipe and bottle tops.

Marko, 9A8MM, on the other side took responsibility of the software part – since 9k6 bps packet radio is not so common thing in Croatia, we weren't able to find a single TNC. Decoding of packet signal is also possible by sound card, and that was his goal. SV2AGW software does a very good job, once configured correctly.

Installing the antenna and preparing the cables (operation code name: dirty works) were done by Marko, 9A6NCM and Mimi, 9A3AMI to whom this is first satellite experience ever!



Adam, 9A4QV setup

«We heard it, it was SSETI express!» were the first words (translated, of course) our team shouted on Thursday at approx 10:40 local time. What we heard was 9k6 bps packet transmission on 437.250 MHz, too quiet to be decoded by computer sound card, but yet, strong enough to be recognized.

How it all begun

Radio club Pazin is a group of enthusiasts which has been active in its town for more than 30 years. Another similar group is Albus – SF&F group which is very



Helix antenna, by Dragan, 9A2SX

Another location

Yes, we have a backup location. Adam, 9A4QV is the man who did himself most of the things that took more people at 9A7P headquarters. He is an experienced ham who has ready packet, MS, EME and other VHF/UHF related equipment. His task was to record the launch and to try to be quicker than us. Its worth mentioning the neither him had a TNC for 9k6 bps, so sound card solution was implemented at his place too.



Mounted helix antenna

Evening before the lanuch and the following morning

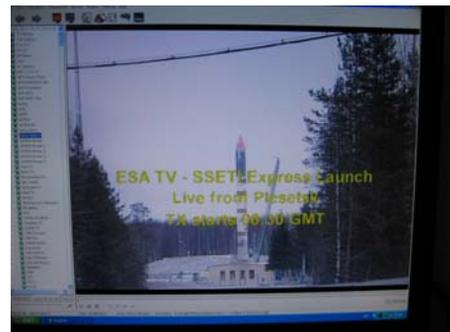
Finally, the team gathered in 9A7P headquarters to test all the equipment which consisted of Yeasu transceiver FT-857D, mentioned Helix antenna, another antenna, 9el yagi as a backup, and a computer with sound board and installed AGW software. We printed out the passes of all the satellites within 2-3 hours, and we tuned to every single one of them. It was interesting to learn that some of them were dead for quite some time and that some of them are semi-operational. The real thrill was when we actually heard and decoded AO-27 (70cm) and ISS (2m). That was confirmation of the readiness of the setup. The successfull receiving station setup should be celebrated, since we dont do this every day (honestly).

We drank a glass of good white Croatian wine and cheered for the successfull both launch and the complete mission. Go flight!

Finally, the launch

27th October 2005. Team main motivator, not yet mentioned, Hrle, 9A6XX, also knows as 'man behind the machine', got first the the setup scene, at approx 6:20 AM. Marko, 9A8MM and Mimi, 9A3AMI soon followed. The rest of the team, Dragan, 9A2SX and Marko, 9A6NCM were at their work places, unable to stay with us in rkp. Adam, 9A4QV, was at his home, ready almost like us.

First thing we wanted to do was try to watch the internet broadcast of the launch. Since we only have 8k wireless connection to the internet gateway, that wasnt as good as expected. But, we managed to see the important parts: still pics from Plesetsk, 'big bang' and the liftoff. Adam, 9A4QV had very fast internet connection and was informing us via local UHF repeater almost at real time, for which we are very thankfull. Dragan, 9A2SX, and Marko, 9A6NCM were also able to see the launch via the internet connection, and they were reporting everything to our radioclub webpage (www.rkp.hr).



Launch viewing screenshot

This is where the chase part started. We saw from the website that first radio transmission was to be heard at approx 10:30 local time. We didnt want to miss that, so we



Hrle, 9A6XX, team coordinator

tuned to 437.250 MHz right after the launch program ended. One hour of noise was no problem at all: we were patiently waiting for the signal, switching between antennas, monitoring 'the thing' with SERACC software. Everything looked good, but still no signal, and it was 10:30. We didnt lose hope, we were still listening, and not that far from that time, at approx 10:40 local time we heard packet transmission (and said the words from the beginning of this article - «We heard it, it was SSETI express!»). Unfortunately, our PC didnt experience the same pleasure. The signal was not strong enough to be decoded by the sound card. Next hour and 20 minutes, time untill the next

pass above Pazin, passed ultra quickly. We grabbed a sandwich, and checked everything once

again: from antennas to our ears. Seems we didnt check good enough: at SSETI's second pass above us, we didnt hear anything. We also tuned to the pico satellites SSETI was carying, but still nothing. Well, we cant be lucky everyday, right? Aditonal checking was done, tuning, rotating, all we could think of at that moment. On the other hand, our main rival and best friend, Adam, 9A4QV reported good reception with large amount of bad luck: after just a few packets from the SSETI, two Italian stations started conversation on 437.250 MHz, probably about coffee. Yes, they overcome the satellite.

Our last chance was 13:45 local time. And this time we almost got it. Once again we heard the packet transmissions, but the PC didn't. The reader could guess that we were dissapointed, but he would be completely wrong. This only made our TO-DO list bigger.

So, here's what we will do next...

We wont:

- give up listening SSETI Express! Never!
- let Adam, 9A4QV, receive more packets than us
- forget the unbelievable experience of hearing the first transmission

We will:

- try to receive both SSETI and the picosatellites for as many times as it takes, untill we decode the data. Maybe we will fail, but maybe we wont!
- continue gathering experience with satellites learning on SSETI
- send you this article and hope you will read it

Who we really are?



From left to right: Mimi, 9A3AMI; Marko, 9A6NCM; Marko, 9A8MM; Dragan, 9A2SX; Hrle, 9A6XX

In the end of this article, we wish to thank Graham, G3VZV, for his endless patiently help with our questions and requests. Graham, thank you!