QSO Today Episode 496 Irad Deutsch 4Z1AC

Transcription Sponsored by: Jeffrey Taffuri K04NCC

Eric 4Z1UG
00:00
This transcript has been redacted. Time marks are inaccurate.

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Welcome to the QSO Today podcast. I'm Eric Guth, amateur callsign 4Z1UG, where I demonstrate the diversity and relevance of the amateur radio hobby and its impact on society by interviewing ham radio operators, many of whom played vital roles in shaping our technology through the amateur radio hobby. And while many people might say ham radio, do people still do that? This podcast demonstrates through in depth interviews just how amazing, diverse and dynamic the amateur radio hobby continues to be.

If you are new to the QSO Today podcast, please be sure to look at the qsotoday.com website where we have almost 500 interviews with amateur radio operators. From there you can click on links that take you to the QSO Today Academy. Our catalog contains over 500 videos on every ham radio subject. Completely searchable.

Irad Deutsch 4Z1AC is a high tech entrepreneur and creator of VarAC digital mode to create a fast, stable and accurate messaging system for regular and emergency communications. Like many of us hams, Irad became an amateur radio operator as a teenager growing up in Israel whose license to learn and the experience that he gained opened the doors to his technical success. Join 4Z1AC in this qso today.

4Z1AC, this is Eric, 4Z1UG, are you there, Irad.

Irad 4Z1AC
03:02
4Z1UG. This is 4Z1AC, loud and clear. Go ahead, Eric.

Eric 4Z1UG
03:07
Thanks so much for joining me on the QSO Today podcast. Can we start at the beginning of your ham radio story? When and how did it start for you?

Irad 4Z1AC
03:15
Well, I need to go back like a long time. I'm 46. Not that long, but still. When I was at the age of twelve, I was looking for some spare time hobby. And I had plenty of hobbies already. I had piano, I had chess, I was a birdwatcher. But I want electronics. But that hobby kind of timing was colliding with some other hobbies. So my mom said, you know, what have you heard about ham radio? I said, what's ham radio? She told me, a good friend of ours, their son is ham radio. Go check out what he has there in his. I didn't even know the name. Shaq, right, but in his room. So went there. I was fascinated and I signed up for, you know, a class of ham radio at the age of twelve. That's how it started.

Irad 4Z1AC
04:09
And I've been doing ham radio ever since.

Eric 4Z1UG
04:12
I can't let you just write off all of those years. So let's go back a little bit. The hometown is.

Irad 4Z1AC
04:19
I was born in southern part of Israel in a city called Beersheba. It's about 100 KM from Tel Aviv, where everyone knows there is a nice ham radio society over there, by the way, still.

Eric 4Z1UG
04:31
Active as I recall. It's a group that kind of gets together every week and has coffee.

Irad 4Z1AC
04:36
Yes, yes. I never went to those coffees. I was a child and there were, you know, very. They were older guys, sure, but I was always active on the VHF repeaters. So I was the one

who called me at the night watcher of the VHF repeater. I made sure it is, you know, the money spent is, was well spent with the sound and repeaters back then.

Eric 4Z1UG
04:59
So you're twelve years old, your mom kind of brings up this idea of ham radio. And you went to a young man. Did he become a friend and mentor to you in amateur radio?

Irad 4Z1AC
05:11
No, he was about maybe at the age of 15, just older than me. But there was a class in Beersheba for ham radio that was run by a guy who I admire. His name is Danny Sedan 4X1MJ. He was my mentor, he was my tutor. I learned everything from him. So I was one student in his class. But I think I'm the only one who kind of took it away to the next level. And we're still in great. In touch. And we meet every now and then.

Eric 4Z1UG
05:48
You talk about piano and chess. You're a well rounded individual. But did you have an interest in electronics even before ham radio?

Irad 4Z1AC
05:56
Well, I got those, you know, kits that my dad used to buy where you can solder things and get some cool stuff. By the way, I still today I find myself doing with my young daughter, who is twelve, by the way, she's not into ham radio, but we do Arduino together. So yeah, I was always fascinated with soldering and making things, putting things together. But ham radio was something I wasn't even aware of. I didn't know it existed back then.

Eric 4Z1UG
06:26
So Danny was your mentor in ham radio? And how important was that mentorship to kind of move you along to ham radio success?

Irad 4Z1AC
06:34
It was super valuable, truly. I really admire the person. He really put a lot of effort into educating all of us about not only the technical parts, but also connect us to the hobby, putting, you know, pouring in, also the human side of the hobby, not only the technical part of it. I was ashamed that I actually failed him because everybody passed the first test. I was his best student and I failed on the first test.

Eric 4Z1UG

07:02
Maybe that was just nerves, expectations.

Irad 4Z1AC
07:06
Yes, I'm sure. And after I passed the test, he took me under his wing and he lived nearby, so I was able to go to his shack and operate and he showed me all the stuff. And, you know, he was a grown up. He was, you know, at my age, 40 something. At that time I was twelve and I felt like he's my best friend. He connected me as we met and as I saw more things, and he had this cool things that through telephone he could do radio and stuff. I was fascinated by all this. And then at some point, you know, I got my own shack. My father decided that it looks promising and I'm very serious into this. So he bought me the fanciest transceiver money could buy back then in Israel, which was a TS-850 from Kenwood.

Irad 4Z1AC
07:53
Maybe the 950 is fanciest, but 850. We went to that shop, he said, what's the best radio money can buy? I want this for my son. And that's how I started my own shack.

Eric 4Z1UG
08:05
Okay, so your first rig was at Kenwood TS 850. And as I recall, the Kenwood dealer was the Volvo dealer in Tel Aviv, right?

Irad 4Z1AC
08:12
Correct. I was there, I met this guy.

Eric 4Z1UG
08:15
I met him as well some years ago. But what was interesting, I think in those days was in order to become a ham radio dealer, I think that the communications ministry required that he also had to have the ability to do any warranty repairs as well.

Irad 4Z1AC
08:29
I don't remember, I don't know, because this rig is still operating very well in my shack.

Eric 4Z1UG
08:36
Is that right?

Irad 4Z1AC
08:37
Yeah, I replaced the capacitors like two years ago, but that's it, just a few.

Eric 4Z1UG
08:44
Okay, so you have this ts 850. What kind of antenna did your parents allow you to put on the house? Were you in like a cottage or were you in a freestanding house?

Irad 4Z1AC
08:52
Yeah. So at the first location, first QTH, were at a cottage and I had their. My first antenna was a dipole, five vendors, which did a terrific job. But then I needed more. And my father is a mechanical engineer. He's super talented. He's the CTO of the dead sea factories, and he builds factories, so he knows how to build stuff. So he decided that I need a huge mask and a huge antenna. So we bought the a four s from Cushcraft, which is forbender Yagi. And then we had a mast which was like 18 meters high, telescopic, for.

Eric 4Z1UG
09:36
The uninitiated, that's like 52ft. It's actually quite a tall mast.

Irad 4Z1AC
09:43
It's huge. And when we moved to our other QTHs, my parents moved to a new QTH. Then we had to move this telescopic antenna with us. And on the other QTH, I also had the benefit to be on the top of a hill. So combine this with this antenna. Then you get everywhere with 100 watts, even on the bed sun cycles site. So it was amazing.

Eric 4Z1UG
10:09
What was your favorite operating mode then?

Irad 4Z1AC
10:11
In those days, like everyone, I started with SSB. I loved CW. But then maybe two years, three years into the hobby, I started to shift quite drastically into digital mode. First it was the packet times, like everybody was doing Packet radio over VHF, also on HF, but primarily on VHF. Even locally, there was a very big scene of Packet radio. So I built the bicom, by the way, with my tutor and the bicommodem, and I went into Packet radio and bbss and stuff. And I was fascinated by this. And very soon I started to do the same thing with HF. And I was mostly interested in those synchronous ARQ modes. Like I was maybe

the first one in Israel who had a pact modem. I was the first one who operated modes like Pactor, like Clover, all those kind of modes.

Irad 4Z1AC
11:08
I did traditional RTTY and PSK and stuff. But those modes really made me more intrigued than the others.

Eric 4Z1UG
11:16
You really became a keyboard user for Ham radio?

Irad 4Z1AC
11:20
Yes, I think I'm a keyboard guy in my real life, not only in ham radio.

Eric 4Z1UG
11:25
So one of the questions I always ask with this interest in ham radio, look, beginning at twelve, that meant that you had six years of continuing education before you went to the army or went to college. Did ham radio play a part in your choices for your education and career after high school?

Irad 4Z1AC
11:43
Ham radio had a huge contribution to my career for sure, in two aspects. I was a computer geek from the age of four. So connecting ham radio and computers was a very natural thing for me. This is one of the reasons I developed this software. We're probably going to talk about today and why I was very interested in doing keyboard to keyboard communications and not just CW and SSB, and was very fast with network and network protocols. So ham radio helped me to expand our understanding in this, because in real life, when you talk about landlines, everything works perfectly. But with hemradio, you have different challenges that really kind of stimulate you to find creative solutions that need to be solved.

Irad 4Z1AC
12:28
The other part of ham radio that really contributed to my career is that my articulation level in English helps me significantly in my business. And this was purely because I spent hours talking to Americans over SSB in the middle of the night at the age of 15. I had american friends. I really polished my English into a level that better than the average Israeli. That really helps me today in business.

Eric 4Z1UG
12:56
Do you find that amateur radio today in Israel is different than it was when you were a kid? And if it is different, how is it different?

Irad 4Z1AC
13:04
Yes, it is. And I think it's different all around the world. But, you know, looking in my backyard, I think it's different. People nowadays do ham radio, but in a different manner. So I think, and this is one of the reasons that, you know, kind of forced me into doing what I'm doing today with ham radio. But I felt like the human touch of ham radio is, you know, is evaporating slowly and surely. And people do more short type of QSOs, people exchange less ideas and less, you know, just less words, more reports, less words. And, you know, FT-8 kind of shifted everything from speaking to semi automatic QSOs. So I think it happens everywhere. It happens also in Israel, the repeaters are not as active as they used to be.

Irad 4Z1AC
14:05
We have a very sophisticated repeater here, both DMR and analog and echolink. They're connected together. And yet most throughout the day, there's hardly anyone talking. And that's a shame. And this is something I really want to change. And I said, to myself at some point. Well, what do people like nowadays? Everybody's on WhatsApp, everybody's on TikTok, everybody is on Facebook. They exchange ideas, but just differently. They just don't like to talk. They don't like to do SSB anymore. I don't know, not as they used to be. So let's try and mimic the experience we have with the digital world outside of Hemenrio and try to create something that will keep the human touch, but just adapt it to the 21st century, where people don't like to talk as much as they used to do.

Eric 4Z1UG
18:13
 You're now in the private sector. What happened after that? Where did you go?

Irad 4Z1AC
18:20
Well, first I started as a. I joined a small company here in Israel. It's a consultant company. So, as I said, I specialize in databases, big data. Now, I also specialize with NLP and AI, but back then, it was purely around databases. I worked for a consultant company that helped companies to grow their business by scaling their infrastructure, upgrading their systems, putting in new technologies and stuff. That was a huge success. And at some point, when were like 50 guys, I was the, you know, one of. I was the third employee in that company. And when we got about 50, were pretty big. We also had, by the way, a lot of projects in the United States. There was something that I found, like a problem that was a common problem to many of our clients.

Irad 4Z1AC
19:12
When you have a big computerized system, if you have one single user running a huge report at the end of the month, report in the bank or something, it eats up all the resources, like all the cpu, all the IO. So the only way to handle those kind of things is to buy a bigger computer. So it's like paving new lanes between Boston and New York. Just because you have two traffic jams, one in the morning time and one in the evening time, and it's not cost effective. What we built, we've built the technology, we patented it that allows. So it's like a police officer that kind of manage the traffic and able to say, okay, your report, it's 18. I have a lot of resources.

Irad 4Z1AC
19:57
You, instead of 1 hour, you will run for 1 hour and 30 minutes, because you didn't really care. You don't sit and wait, right? You go to have your coffee, you go to see meeting. But those other people who are now serving customers, they need better, more these cpu now. So I'll redirect those resources now in real time. Was a non intrusive solution, which was magic. And that company was a huge success. And we sold it to an american giant called EMC. It's then blended into Dell. Dell bought BSc, so it's now blended into Dell's portfolio. Dell has big data platforms, and that was my first success in business when I sold that company.

Eric 4Z1UG
26:39
And now this break. The QSO Today project that includes this podcast and the QSO Today Academy is now listener sponsored. There are no commercial sponsors who influence the content and opinions expressed on QSO Today, including my blog posts. We did not have a problem with sponsor influence when we did have commercial sponsors. The world is different now. I believe that commercial sponsorship, where you watch and listen to TV, radio, YouTube, Facebook and X for free, does give sponsors complete control over all that you see and hear. The largest networks are now dominated by international corporations who decide in their boardrooms what we hear, know about how we vote and what we buy. Commercial sponsorship models for podcasts don't work, maybe for good reasons.

Eric 4Z1UG
27:32
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And now back to our QSO Today.

Eric 4Z1UG
29:10
Let's go to the present you have on QRZ. Beautiful pictures of your hamshack.

Irad 4Z1AC
29:15
Well built by my wife, by the way, compliments to my wife.

Eric 4Z1UG
29:19
It's not quite as beautiful as yours, but I have a beautiful office hamshack I've discovered. For me, it's such a huge distraction because when I should be working, I want to play on the radio.

Irad 4Z1AC
29:30
Tell me about it.

Eric 4Z1UG
29:31
So I saw your pictures on QRZ. I'll share the pictures with the audience on the QSO Today website. I'm looking at that. I'm laughing because I can imagine trying to work in such a beautiful hamshack as that. But let's talk first of all, what is the rig today? How is your hamshack outfitted now?

Irad 4Z1AC
29:52
All right. Although I am very deeply invested into ham radio, I don't have the fanciest rig. The reason is because I'm also a car enthusiast. You can have the best engine, but the tires makes most of the difference on the track. My tires today, because of my current QTH, is not fancy. It's not this 18 meters high, four elements, cushcraft. These are the tires of ham radio. I don't have good tires. I have a very nicely laid antenna, which is a dipole

antenna, a two bender only. I have those very high palm trees in my yard. So I brought this dude who climbs up there. He had shackles out there. And then I can take up and down this antenna for maintenance. So it is very high. It's 18 meters high. It's a dipole very well late northeast, south, northwest, southeast.

Irad 4Z1AC
30:52
So I got plenty of, you know, the US European, but it's still not the same experience as I had like 30 years ago, risen here, where I live today. And with more people are aware of radios and radiation because it sounds different. It sounds familiar, right? Radio radiation. So I don't want to have a big footprint around my neighborhoods, studying people bugging me and asking questions, although it's completely legal. So I have this antenna, which is well disguised. So my rig is the good old TS 850, which I use for some bands because it has a great antenna tutor, so I can tune my antenna to every band. But then my daily rig is the popular IC 7300 for VHF. I have the MD 9600. I have, you know, walkie talkie, the one from the TYT that everybody uses, and that's about it.

Irad 4Z1AC
31:58
I have some noise blankers, modest shack. I do have all the modems that you can think of, like the contronics, the impactor. I even have the new package radio. I don't know if you heard about this, the NPR modem, which is really great. Too bad I don't have anyone to play with, so I bought two to play with myself.

Eric 4Z1UG
32:21
I want to make sure that we really spend some time on VarAC. Let's start there. How is it that you ended up getting to VarAC with all of the digital modes, beginning with RTTY, there's all kinds of analog HF modes. And you had this interest in packet radio? This is before I arrived in Israel that there was a packet radio VHF network that went all up and down the country.

Irad 4Z1AC
32:45
Yes.

Eric 4Z1UG
32:46
So any ham that was involved could actually send messages up and down the country. And then I think that went away when the ham that owned all the digipeaters went away.

Irad 4Z1AC
32:56
Yeah, it was very popular. It was even connected through HF to the outside world.

Eric 4Z1UG
33:01
HF gateway.

Irad 4Z1AC
33:03
HF gateways. Also we had a gateway through Cyprus on VHF.

Eric 4Z1UG
33:07
So you had this interest in modem keyboard communications. Why VarAC with everything else? I mean, everything else seems great. What's the difference? What's the history? How did that start?

Irad 4Z1AC
33:19
I'll start with a little bit of history. So, as I said, I was in digital ham radio. This was my core. Most of my time I spent talking to other people. With Packtor, for example, I had a lot of kisses with packed or. A long time ago, 25, 30 years ago. So then, you know, I got married, my career, everything, you know, took most of my spare time. I moved between houses. I lived in Tel Aviv, I lived in Herzlia, and there were no places where I can, you know, revive this hobby. And I was busy a few years back, like ten years ago, we moved to a town called Savion in Israel. So. And five years ago, I had like, more spur time. So I opened up all the boxes, dusted all the equipment, plugged it, and magically, this ts 850 still works.

Irad 4Z1AC
34:16
I took the Pactor modem, light it in, and it works. And I started to call CQ, like 30 years ago. Nobody answered. I tried to. I. So I started to learn about ham radio today. And I understand that everybody's an FT8 and at some point FT-4 came in. And so there's still a little bit of RTTY, there's still a little bit of PSK, but everybody's an FDA. You can hardly hear SSB or Cw. People always complain, oh, it's the propagation, all right. When there is a contest, the bands are filled with SSB and CW. It's not the propagation. It's because people are not willing to talk anymore. So we became a little bit lazy, right? Even myself, I do FT-8. I did. I did DXCC with FT-8. But I wanted to chat. I wanted to talk to people.

Irad 4Z1AC
35:10
I remember those old ragchew conversations 35 years ago with my fellow Americans. We talk about our hobbies, we talked about our lives. We talk about our problems. I shared my intimate problems with some of those guys. I even met some of those guys. I have a great friend from Austria who we meet every few years. This was all gone. And I say, well, pactor radio. I said, I want to chat. I want to do a keyboard. Keyboard chat Paktor is the great

mode out there that can provide you with 100% delivery with. With great speeds, also to send like files and stuff. But the. It's too expensive.

Eric 4Z1UG
35:57
Right? The Pactor modem itself was over $1,000, as I recall. Right?

Irad 4Z1AC
36:02
It's over $1,000. And nowadays they dragon for something. It's 1200. Even. So, it's just very. So you need to schedule a queue so on Facebook, because there's a Facebook group, in order to enjoy a little bit of keyboard to keyboard conversation. When I do PSK or when I do RTTY, it really ends up with just extending name and reports because the QSO can break, you know, QSB. I also tried all the other, like Contesia, Olivia. Right? I tried. I tried them all. And I still do them all every now and then. But if you don't have a hundred percent guaranteed, you're not spending too much time and effort to talk about the real stuff. You just do the minimum required to make the QSO valid so you don't want to spill out your guts. And then the other side, like an SSB, right?

Irad 4Z1AC
36:57
You have a long over and you talk like two minutes and then the other say, oh, sorry, you faded away. There was a QSB, so I got 50. It takes all the passion of they're willing to continue this conversation. So I wanted to have something that is bulletproof. At that point I stumbled into the Vara modem. So I was like everybody else. I tried the Winlink software, which is a great software to exchange emails between radio and the IP world and even between ham radio. I know it's highly popular with Em. People make sure that they always have a viable win link operating just in case something bad happens. But it's not a way to communicate. It's mostly find its way into being an Amcom based solution. But the Vara modem, I saw a potential there.

Irad 4Z1AC
37:51
I play with Winlink a lot, so I saw that the speeds Vara can get. I also explored that. The guy who created the Vara modem, he's a great spanish guy, his name is Jose, we're in great relationship. And he also had a small tool called the Vara chat that kind of have a very simple terminal for chatting using Vara. It was very, it's very basic. And I asked him if he could develop a few stuff and he didn't have the time, the effort or the will to do this. And then I say, and then it hit me and said, well, the Vara protocol seems like a great protocol for keyboard to keyboard chat. Let's give it a shot. I grouped around about ten guys with me on Facebook.

Irad 4Z1AC
38:38

By the way, we have a very active Facebook group now, it's about 7.5k group, and we played with Varachat. And at some point when it was not enough, I said, well, I'm not the best developer out there. I have great developers in my company, but I still remember, I still have some tricks in my sleeve. Let me write a small terminal problem that will do what we want. So I write a small terminal problem, c sharp program, I distribute it, and we started to talk to each other. That ignited a chain of events that I couldn't even imagine from having a bunch of ten guys doing some experiments. We are now over 50k users of Varic. There is anything between 102 hundred actively at any given moment. It's all reflected on PSK reporter. So it's a huge community today.

Irad 4Z1AC
39:36
And it all started because I just wanted to chat with somebody and the only modems that was out there was too expensive. That's the essence of why I started this.

Eric 4Z1UG
39:48
This is very exciting. To me, especially when you said IC 7300. I also have a TS 520 here that probably needs to be recapped. But what hardware and software do you need when you're talking about the Vara modem? Are we talking a software modem or are we talking another expensive piece of hardware in order to interface that to the 7300, for example?

Irad 4Z1AC
40:12
Okay, so a little bit about Vara. Vara is a software based modem created by the talented Jose. His call sign is Echo Alpha five hotel Victor Kilo. You can find it on his website. It's a brilliant piece of software that uses a hybrid modulation, anything from PSK to QPSK, and can get on HF with. With a 500 hz bandwidth to up to 1.5. Remember on the packet radio on VHF we used to have 1.2. We're talking 1.5, 500 hz on HF, top speed. If you want to go wider, like 2.3 khz bandwidth, then it goes up to like seven k. It's like really magical. He also has a version for VHF and UHF.

Irad 4Z1AC
41:11
This takes us to like, you know that the 20th and the 20th thousand kind of BPS people use vara on via, on quite a lot in Europe and also in the United States. There is a huge group also in Hawaii that I worked with that use it. They have. It works with repeaters and digipeaters. Works really well. By the way, you can use vara on traditional analog repeaters. So my dream is to use those repeaters we have in Israel to create a WhatsApp over VHF, because everybody likes WhatsApp, as I said. Right?

Eric 4Z1UG
41:55
And those repeaters are not being used right now.

Irad 4Z1AC

41:58

Correct. There's. There's a bunch of guys here in Israel already tested it. They said it works magically. So this is something I have on my to do list. So going back to Vara. So Vara was first adopted by the Winlink project. The Winlink project that support quite a few protocols are RDop, Winmore, Hector and Vara. Vara seems to be taking most of the bandwidth in terms of, you know, number of users, because it's affordable. It has a free version that is limited by speed. There's like 14 speed levels, if I recall. So it takes you up to speed level five, which is around 170 bit per second, which is good enough for chatting, not enough for file exchange, but for chatting. And then if you want to contribute, it's not contribution.

Irad 4Z1AC

42:52

If you want to buy a license and, you know, give Jose an earning, a little bit of earning from for his hard work, it cost about $69 per portal. So that's really a no brainer. I mean, people invest so much money in, you know, in apps, on apps they don't really need on connectors that just want to buy and put it aside just in case. They need six, $9. That's really nothing for this great piece of software. So it's software based. All you need is a simple computer. People use very simple computers. For this cheap ones, you need an audio jack, and that's it. But it's only a modem. It doesn't provide you anything in terms of user experience.

Eric 4Z1UG

43:40

Can you use this Vara modem software on your 850, or do you have to have a rig that's more stable?

Irad 4Z1AC

43:48

Sure, you can use it on equipment that are analog completely, that don't even have a screen. It's all you need is if you can do ft eight with it, you can do Vara with it. As simple as that.

Eric 4Z1UG

44:03

You don't need to be with like ft eight, for example. Don't you have to have maybe even some gps lock or anything like that?

Irad 4Z1AC

44:10

No, all you need is synchronize your time. With Vari, you don't even need that. You don't need to synchronize your time.

Eric 4Z1UG
44:17
So even for like a new initiate who doesn't have any money and somebody gives them an FT 101 or, you know, one of the old rigs, the Israel Amateur radio club, has a whole shipping container full of silent key rigs that may be old, but they could work with this mode.

Irad 4Z1AC
44:34
They do work, I know for sure. We have a lot of people on our community, so we have a very active forum. People all the time post their rigs. And I see all types of rigs, sophisticated one, even ones without even a cat control. So it's preferably to have a cat control, because the system in which Vara works, it allows you to have a centralized calling frequency, but when connection is established, you can move aside and continue the QSO, so the calling frequency remains free for other people to call, cue and connect.

Eric 4Z1UG
45:05
So the software will move you to the next channel?

Irad 4Z1AC
45:08
Correct. The software will move both sides together. It's because it's the auto QSY mechanism that I've built. So in this way, we have like ten slots around the central frequency. But if you don't have cat control, although most rigs from the eighties even have cat control, if you don't, then it's okay. Varic will put a nice pop up on screen and say, now it's time to tune to 14 10425 to continue. So it tells you what to do in case you don't you can do this automatically. But beyond that all you need is a PTT and an audio jack. That's it.

Eric 4Z1UG
45:50
Audio in and out to your computer, to your modem. That's the line out in the microphone in on your computer.

Irad 4Z1AC
45:57
Yes. And nowadays you can buy on Amazon or Aliexpress or whatever those dongles who have those USB one side and on the other hand you have a single jack that has four connections like for audio and mic this goes. And if you want to spend a little more bucks and you have a complete soldered usb to your rig.

Eric 4Z1UG
46:19

I've seen the VAR Ac software on windows. Does it also will operate on a Mac or Linux machine?

Irad 4Z1AC
46:27
Yes, but there is a. But it is both the Vara modem. So the Vara modem itself developed by EA5HVK was developed or still is developed in the visual basic language. So visual basic can run on Windows. I also wrote my program in C sharp which is also natively built for Windows. But there is a way, and we have a vast community who's doing it and you can find it on the VarAC website. There is a section on the form called for Linux, Mac and PI users. There is a way to run those softwares on Linux and Mac using a platform called Wine. Wine is a platform that allows you to run native code from VB and C sharp on Linux. There are some tweaks that needs to be done, but people have already created great tutorials and videos.

Irad 4Z1AC
47:25
It's all available on the website. So if you really want to you need to spend maybe half an hour and you'll get it up and running. I got it up and running on my end. Maybe at some point in time I'll invest and I'll compile VarAC in a native way for Mac Linux. But the problem is it still realize with the Vara modem is still requires a window. So unless he does it, I don't have any reason to do this. But as we have a workaround I'm not really anxious about this.

Eric 4Z1UG
47:57
When people are thinking of, you know, a raspberry PI for example, even as a way to take the VarAC into the field with a smaller rig for EMCOM purposes or something like that. That seems like that might make sense, but on the other hand you're going to need an interface anyway. So I guess it could run on your Windows laptop.

Irad 4Z1AC
48:14
Yes, most people do. So Varic is great mode for mcom and for QRP operation, unlike for example pactor where all the time they transmit, even if you don't have anything to say because they keep in sync with Vara, it only sends out data when there is something to send. The keep alives happen very infrequently, and not only this, because of the protocol is very adaptive. 15 levels of speed. The first speed level can go like FT-8 through -22 decibels, so you don't need a lot of power. So if you want to make basic use with Vara with VarAC, you can do this with five watts, a lousy antenna -21 decibels and you're still able to conduct a QSO that is bulletproof. No data is lost.

Eric 4Z1UG
49:07

100% delivery and now this mid show break every two weeks I listen to the Ham radio Workbench podcast with George KJ6VU, Vince VE6LK, Mark N6MTS, Thomas K4SWL, Michael VA3MW and Rod VA3ON, and their guests on often topical and important projects in amateur radio. This discussion amongst the regulars and their guests remind me of the conversations that I used to listen to on 146.94 and 146.46 MHz in Orange County, California while working on my own workbench almost 50 years ago. It is amazing how much practical ham radio knowledge that we can absorb by listening to the Workbench podcast. That starts to make sense when we start our own deep dive into our own projects.

Eric 4Z1UG
50:00
So join me by listening to the Ham radio Workbench podcast now, and as George and crew push beyond 200 episodes, you can get to the Ham radio Workbench podcast by clicking on the banner in this week's show notes page. And now back to our QSo.

Eric 4Z1UG
50:18
How large is the VaraAC user base now?

Irad 4Z1AC
50:22
So it's now about fifty k, and it's growing at a pace of about 100 150 a day. I know because I see all the downloads and I see new call signs all the time. I get an email for every download. So at some point I need to make a rule on my inbox to take them aside because there are too many. You can look on PSK Reporter, for example. You can see how many people are active at any given moment when you filter by mode at the top there. So viruses is right at the top with FT-8, FT-4, JS8call, and then usually you'll have VarAC.

Eric 4Z1UG
50:56
And what's the difference, would you say, between VarAC and JS8call, for example? I mean, isn't that the same kind of thing wasn't that the same purpose?

Irad 4Z1AC
51:06
So it has some similarities in a way, the big advantage with VarAC, it is built specifically to create the modern WhatsApp experience in terms of UX and in terms of speed. You can send files. If you look on our Facebook group, I send my check picture, the one you saw on QRZ while chatting with people. When the conditions are good, you can get to those high speeds, you can send files. We have v mails, we have relay notifications, we have automatic us site us. Why? So we are able to conduct using the slot system. We're able to have multiple QSOs altogether, just like JS eight. But we have the benefit of speed and we have the benefit of the UX. So those two create a real conversation, a real one.

Irad 4Z1AC
52:02
And it's not a slow one, it's a super fast one like you have with your friends on WhatsApp.
You don't have to wait 60 1 minute, two minutes, five minutes for a message to get
delivered. You run a fluent chat with each other.

Eric 4Z1UG
52:17
Can you do a roundtable mode or have multiple people in the queso?

Irad 4Z1AC
52:22
Yes, we have a mechanism. So there are two ways in which you can conduct a variety
QSO. One is the one to one link and the other one is the broadcast mode. So broadcast is
a new feature we introduced about two years ago, one and a half year ago, that allows you
to send a message to a wide audience without message delivery guaranteed. At first it was
not very popular because the SNR tolerance of this broadcast were only at the edges of
minus twelve decibels. So not everybody could have received. But we made a huge
improvement in the last version of a month ago that is now broadcast can now tolerate -20
-819 decibels, which makes it much more functional. So there are already quite a few
groups who run the roundtables nets every week.

Irad 4Z1AC
53:23
There's a big group in Austria and Germany who does this. We have the official one of
RAC. You can find the date and the frequency on our website and the VarAC website
rather than front page. So we have roundtables also with this mode. And I'm going to
invest more into also make a delivery guaranteed mechanism into this in the next versions.

Eric 4Z1UG
53:45
Now, are there FT-8, FT-4? Are there specific frequencies for calling now on VarAC?

Irad 4Z1AC
53:53
Yeah, so you can find all the frequencies on the VarAC hamradio.com website, VarAC
dash, hamradio.com. It's all out there. And when you download the software, it is pre
populated with all the calling frequency we have a calling frequency per band. The most
popular ones are the 20 meters, which is 14.105 USB. 14,105 USB. This is where you
tune your right? You don't have to do any math around. Same goes for 40 meters. We
have the 7.105 and then we have others like for 10 meters is 28. So we try to keep the 105
to make it easier for people to remember. But for other bands, we have some other
frequencies. When you are tuned to that frequency, all you need to do. You don't have to.
You turn on your beacon letting people know you're out there.

Irad 4Z1AC
54:51
Your beacon will fire every 15 minutes. You will start to see other people beacons appearing on screen. Then you can call a CQ, you can connect one of those beacons. People will see your beacon, they'll probably connect you. If you're not there, they will leave you a vmail. It's the various email. It's like an email. We have an internal mailing system. They will leave you a message. When you go back to your shack, you write an email back. You don't have to connect them. It will stay in your inbox. When your station will hear their beacon, it will send them a signal. We call it the relay notification tells them, hey, I have a message for you. Come connect and collect it. Then they will connect and collect their message. So very simple.

Irad 4Z1AC
55:38
14, 105, start there, then start to explore the other bands because most people go there first.

Eric 4Z1UG
55:45
Now I heard most recently one of the amateur radio news line shows that we get every week on podcast that some hams are being cited for operating too much bandwidth in HF. Is there any danger of exceeding bandwidth limits? Maybe in the United States by the FCC or by the Ministry of Communications in Israel. In these bands using VarAC, you.

Irad 4Z1AC
56:08
Mean like speed level, right?

Eric 4Z1UG
56:09
Well, yeah. The higher the speed, the more bandwidth you're using in the frequency band.

Irad 4Z1AC
56:15
So your FCC just lifted that restriction. It's now.

Eric 4Z1UG
56:20
So the FCC in America has lifted that restriction?

Irad 4Z1AC

56:23
Yeah, there's no more restriction in the US for that speed. So, you know, people used to say that Paktor four was illegal in the US. Maybe, I don't know. I'm not, I'm not a us citizen. But now this regulation is off the table.

Eric 4Z1UG
56:37
So that potentially means where all of those single sideband conversations have gone away, that VarAC could increase its usable bandwidth for sending pictures and data and spreadsheets and everything else.

Irad 4Z1AC
56:50
The VarAC QSO, we stick to the 500 hz bandwidth. That's it. 500 hz, like pecker radio is around that. So we're not using any exceptional bandwidth, right? 500 hz is very narrow. This is why we can squeeze a lot of Q so's together. But sometimes people say, hey, you guys are spreading too much with your VarAC. I say, hey guys, ham radio frequencies are here to use. Rather than just being, not being used and only have static, we actually make good use of those frequencies. We make real conversations with people. If I could, I would have used the entire bandwidth for VarAC. But you know, we still have neighbors and friends we need to live with.

Irad 4Z1AC
57:40
So by the way, we have incorporated into the VarAC mechanism to make sure that people do not step on other people QSOs, not even for VarAC QSOs, even other QSOs. Like for example around 14 105, we have it, around 14 108, we have the Olivia guys, around 14 105 LSB, we have the packet radio, packet 105 network. So potentially when people move around, they can step on other QSOs. So in order to make people aware of it, we have created what we call the slot sniffer. A slot sniffer is when you want to call CQ, then you declare that you're calling secure and the calling frequency, but you're going to immediately QSY to slot number three, which is, let's say one k up or two Ks up. And you're going to wait for incoming connections over there.

Irad 4Z1AC
58:43
So before you call the CQ, you hit the slot stiffer your rig temporarily queue is swipe at that frequency and then you can listen if it's free or not and all if it's okay. By the way, Devara can indicate if it's a busy channel or not. Only then your CQ will fire. So we try to invest in educating our users there you see a lot of pop ups that tells you what to do and how to be careful around this, because we want to chat, but we want to chat, we don't want to ruin others people chats, right? Even if there is in other modes.

Eric 4Z1UG
59:18

Is there an ability, if there's a lot of conversations that are going on to actually kind of move up the band three, four, 5 khz?

Irad 4Z1AC
59:27
You can move an entire band in a QSO without disconnecting the link. I've done this numerous times, like when propagation goes down like for 20 meters at around 08:00 p.m. And I want to continue the conversation on 40 meters, for example, I can send a QSY. So I. So we have two types of QSY mechanism. You have a QSY to a slot or you have a free form QSY where you can put in any frequency you want. So your frac will send a QSY invitation to the other side with a particular frequency. It can be in another band if the other side acknowledged both of you QSY together automatically to that frequency, and the link never breaks so you can continue where you left it.

Eric 4Z1UG
That's so amazing, actually. Okay, so I saw on your website, beautiful as it is, by the way, and you actually have a picture of a young lady out in the shetach, out in the field next to her four wheel drive, operating a tablet or something like that, running VarAC.

Irad 4Z1AC
People say she's operating Varic on Mac. You don't have a Mac version, it's a Shutterstock image, right? She's not a real ham radio.

Eric 4Z1UG
You have a page for emergency communications and a very nice, beautifully laid out handout in PDF format that you can get as a picture of how the EMCOM works. Has VarAC actually been tested under EMCOM conditions, and how did that work?

Irad 4Z1AC
Well, the EMCOM community of RSC has been growing rapidly in the past twelve months. People started to use it for EMCOM without having any EMCOM specific feature, just because it was convenient. It works great on the field, it works great with low power with lousy antennas. Its tolerance for SNR is like ft eight, and you can still make a 100% bulletproof link, no data loss. So it was ideal for EMCOM, especially when there's a lot of EMCOM communities also running on FM. Favara also has a way to dig itself through other vara modems so you can spread to a wider distance.

Irad 4Z1AC
So that EMCOM community, some people from, you know, there is a guy in Italy, there is a guy in the UK, there's a few guys in the US that came to me like a year ago and say we need some specific stuff for EMCOM. So I started to develop here and there some stuff. But the next version, the Vivar CV nine, which is in the oven as we speak, and I'm probably going to release it in two weeks, is going to have for the first time an EMCOM

mode. So when you tick that checkbox on the top right of your screen, you will shift your VarAC into an Amcom station that comes with plenty of tools that are EMCOM related.

For example, your beacon will be visible as an EMCOM beacon, so you can identify from all the beacons out there who are the emcom stations. You can use Alertex. So think about this. We have an EM network. I'm at the headquarters. The flood is coming someplace or shifting around or the hurricane is making its way to an area. I can send a broadcast to the area that will trigger a visual and sound effect on their various and will go into their alert center. So we have an alert center where all alerts are gathered. We call it alert tags. These are predefined text tags that if you incorporate them into a message and you are able to define them and how they will affect your ux, they will make a sound, they will look different, they will add a different color, everything.

Eric 4Z1UG

And you will have everything gathered on a place called the alert sensor so you don't miss an alert. That's another feature that we have that is EMCOM. I'm incorporating now these ics forms into the vmail system. So we already have a well established vmail system where you can send a vmail and you can attach data and stuff. You can now include predefined templates of forms that are ics in the ICS standard. So for the first time we're going to have an official EMCOM version apple t now, which is still used as EMCOM but without any specific feature.

Eric 4Z1UG

I'm sure that given natural disasters and everything else that seem to be prevalent in the world, that there'll be some actual operating time, God forbid, but there'll actually be some actually operating time. On using VarAC for EMCOM.

Irad 4Z1AC

I can tell you a secret. There are some companies out there who has reached out to me who want to leverage VarAC on the field regardless to ham radio for real type of EMCOM type of activities. I'm exploring these opportunities.

Eric 4Z1UG

I think that whatever commercial application that comes from amateur radio technology, it can only benefit amateur radio in the end.

Irad 4Z1AC
Yes. Although this is not my day job. Right. I have a great company. I make a good living. I don't need this for the money, but it's a hobby. But there is something good here. Commercial companies knocked my door and wanted this, so I'm exploring this as we speak.

Eric 4Z1UG

I was so pleased and surprised to find out about you here in Israel because I sometimes have this feeling that Israeli hams are older than I am and I'm pretty old. It was so great to see that there's younger hams in Israel. What do you think that we could do better? Maybe not just in Israel, but in general to attract new people to the hobby?

Irad 4Z1AC

I'll tell you what, I have a lot of criticism around how ham radio societies now work. Some do a better job than others. I think we can also do better here. Most of the ham radio societies are stuck in the old timers. In the Alzheimer's world, the main focus is talking about the history of hemradio. They glorify all the things that has been long time ago. All the great amplifiers we have built with all those fancy tubes and stuff. This is not something that intrigues the modern child nowadays, who has everything in their problem with their hand. They need something different. So you need to bridge this gap somehow.

I found, for example, VarAC to be a very intriguing toy for kids because they see something they know in Varic, when the other type, the other side is typing in varicose, you see as an ease typing message on your VarAC. That's a modern experience they're used to. They send a picture, they see a picture, they can relate to this. So I think that ham radio need to move on. And DMR is a great foundation, but I think digital modes, like working through satellites, these are the things that are going to intrigue youngsters to get into the hobby. Not building amplifiers, right? Not doing CW is a great skill, but it's not intriguing anymore. So I don't say we should abandon this, right? But we should have this skill. We should be able to solder a resistor or a transistor.

Eric 4Z1UG

But it's not the main essence of the hobby that will intrigue youngsters. So I think we can do better over there.

Besides VarAC, what excites you the most about what's happening in ham radio now?

Irad 4Z1AC
Softwares. Anything that goes radio with softwares together intrigues because everything comes to life on a big screen with all those moving things and waterfalls and gauges. So when you do software, any kind of software in ham radio, this is really something that bridged the gap between the basic type of communication and the modern world that everybody knows nowadays. So the more software there will be, the more sdrs, the more protocols, the more ways of communication. That harness ready at the bottom, but at the top you'll have a laptop, an app or something. These are the things that will bring in new blood into the hobby. And I'm doing my modest contribution into this.

Eric 4Z1UG

Irad, do you have advice that you would give to new or returning hams to the hobby?

Irad 4Z1AC

Yes. First of all, if you already have a rig, don't throw it away. Do some effort and make it work. If it doesn't work, it's part of it will connect it to your roots. The reason I'm still keeping the TS 850 on my desk at a prime location is because every time I touch that, I feel like I'm a 15 year old boy. So don't throw this away. Keep it in a prime location, but then get yourself a new modern ham radio that will revive your enthusiasm. Right? Get this IC 7300. Get this chinese stuff with the waterfalls on screen, with the touchscreens. It will take you to a new direction. When it looks better, you just use it more often. As simple as that. Then start to explore. Start to explore. Do an effort and build yourself a nice antenna.

A dipole is more than enough to start with, but start to explore what's going on. It took me a long time to explore different modes. Different have you ever heard about three D v? For example, you can do digital audio on HF. That will intrigue you for weeks until you say, oh, it's nice. It's not functional for the day, but I spent a whole month playing with it and that was a lot of fun. Now let's move on to another thing. Then you find you have RAC, for example. Then you find you have winlink. Those softwares will intrigue you for a month or two every time. Then you move on to the next thing. So explore, and explore. At some point you will find yourself.

Eric 4Z1UG

Hooked Irad I want to thank you so much for joining me on the QSO Today podcast. I have really enjoyed learning about VarAC. I think it's going to be the mode. Once I get my generator finished, I'm going to load that into my computer and get the IC 7300 operating on it because you've really got me excited by the possibilities of having this chat mode on my Hf radio. So with that so much, I want to thank you for coming on QSO Today and wish you 73 thank you very much.

Irad 4Z1AC

73, Eric it was great talking to you. All the best.

Eric 4Z1UG

73S

That concludes this episode of QSO Today. I hope that you enjoyed this QSO with a Irad. Please be sure to check out the show notes that include links and information about the topics that we discussed. Go to www.qsotoday.com and put in 4Z1AC in the search box at the top of the page. You may notice that some episodes are transcribed into written text. If you'd like to sponsor this or any of the episodes into written text, push the sponsor transcription button in the center of every show notes page. Support the QSO Today podcast by first joining the QSO Today Email list by pressing the subscribe buttons on the show notes pages. I will not spam you or share your email address with anyone. Become

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