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FEA Net: 7.026 MHz 2300UTC on Saturdays, 14.054 MHz 0800UTC on Sundays
Newsletter Editor, FEA Net Manager: Nao JO3HPM (jo3hpm@fists-ea.org)
Membership Secretary: Hoz JL1IRB (join-fea@fists-ea.org)
Web Administrator, QSL Manager, Newsletter E-mail Distributor: Harry JL3AMK (webadmin@fists-ea.org)
FISTS members can receive the morsEAsia via e-mail. Please email the web admin with your FISTS#.
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NEW MEMBER

We're very pleased to welcome our latest member: Emerson, DV3CEP #15278, Shige, JP7TQQ #15279, Wen, BV3UJ #15280, Lincoln, BV2CW #15281 and David, BX3ACB #15282.

NOSTALGIA AND RESUMPTION, SHIGERU SATO, JP7TQQ, #15279

Hi. I am Shigeru Sato, Shige (FISTS #15279), JP7TQQ. I live in Natori, a city in the greater Sendai metropolitan area, Japan. Many of you write about technicalities of ham radio, but let me tell you today a story of nostalgia and resumption of my ham life. I was born in 1946, and will turn 73 this year. My first encounter with a ham was when I was 17 staying in the USA for a year as an exchange student. This ham was Harry Norr (1913-2008), N0JSV. (His eldest son was my classmate.) He invited me to his shack and showed me his antennas. I don't think I fully understood what he showed and told me those days, but he impressed me greatly. I came back and was licensed as a ham (Class 4, formerly called the Phone Class), but I failed to open a station largely due to money matters at that time as a kid. Soon thereafter ham radio sank into oblivion for over half a century beneath the college, work, raising kids and things; the life. I retired from a full-time job at 68. One day it just happened that I started to read Harry's obituary, where his lasting persistence in amateur ham radio was mentioned. This brought back old memories. A pang of nostalgia hit me and reminded me of the days in 1963 as I talked with him. At a local bookshop one day I was surprised to find CQ Ham Radio magazine still alive, that I used to subscribe to in the 1960's. My heart gradually slanted to that direction. In 2018 I took an exam in April, got an upgrade to Class 1 and opened a station in August. I uploaded my bio and photos onto QRZ.COM, sent the Norr siblings the QRZ site address and told them I had made a comeback to the ham world after 55 years. Soon came a reply from Paul Norr, KB0USV, Harry's second son and the sole inheritor of the father's hobby. He told me his dad in the retirement home had had daily QSO's on 2 meters with the son up until his last days.

My shack is minimal; the rig is Icom IC7300 with an ATU (Icom AH4) and a 10 m wire ANT. It has been a great pleasure to QSO with hams all over Japan, Korea, Taiwan and especially with those in Asiatic Russia and North-eastern China. I realize and appreciate that they are close. My QSO's also include one with a ham in his late eighties from Colorado, USA and another one with primary school boys and girls of "Young Children's Radio Club" from Tyumen, in western Siberia. Ham radio is fun.

My QRV is mainly in CW, FT8 and RTTY. I depend heavily on WSJT-X, DSCW, MMTTY and, that is, on PC-rig USB connection. I also use Turbo-Hamlog, JT-Alert, JT-Linker, etc., etc. Don't you think it would be a disaster if my Panasonic PC collapsed? In the days of computer-Internet dominated ham life today, what countermeasure or what safety net would you have? My next project will be to build a backup system in the brand new PC I just purchased.

I hope to see you on the air. Thanks.

SPECIAL TOPIC: HARDWARE

MAINTENANCE OF MY R9, TAKESHI, JA4IIJ, #15084

Hello, dear members! This note is a maintenance report on my Cushcraft R9, which was installed about six years ago (Sept. 2013) in my garden and reported in MorsEAsia #57. The reason of maintenance was that one guy rope (stay) of nine ropes was broken off. The guy ropes were made of polyethylene (φ5 mm). Obviously, they were fatigued by long exposure to the sunlight and weather. Although vertical antennas usually have good wind survival, tall antennas are not the case. Owing to the guys, my R9 itself had almost no problems in six years but after strong wind in the last November, I found the broken rope. For safety reason, ropes should be replaced ASAP before next strong winds coming up. From the other hand, this was a good chance to check survivability of my R9.

However, I feel uneasy having remembered the difficulty experienced in the installation process in 2013. The weight of R9 is about 11.3 kg, and the length is 9.6 m. What is more, it is a top-heavy ant because of loading coils and capacitor hats. While R9 is standing vertically, there are no problems to hold as far as the end is fixed on the ground. However, once it was tilted a few tens of degrees, even if you try to tightly hold R9, it may be difficult to recover the original position, because R9 is very flexible and hence unstable without guys. One needs a good strategy to handle the moment of force produced by such a long and heavy ant.

After the New Year get-together at my home, I have planned how to lay down and raise R9, and my plan went almost as well as planned. Firstly, R9 was slid along the mast down to the top of a small tower (1.5 m tall) that was fixed on the ground, then R9 and the mast were tied with each other by an adjustable (universal) clamp. Finally, R9 was revolved on the mast around the pivot of the clamp, and successfully laid down in my narrow garden. The pivot position was 1.8 m from the end of R9 and it was 3.3 m from the ground.

A "ratchet lever chain hoist", a convenient and tough tool bearing 0.25 t, was used to handle R9. In fact, the tool was amazingly useful: you need only one hand to lay down and lift up R9. Hooks of the hoist were attached at the end of R9 and the tower. Of course, some auxiliary ropes were needed for safety. In Fig.1 you can see R9 laid down in my garden. A supporting stick was applied to protect spoke hats. R9 bent more if the stick was not applied.

Fig. 1 My R9 laid down for maintenance.

After a careful inspection, all the guys were replaced. Polyethylene ropes were used again from availability, however polyester ones are better from weatherability. My concern was the life of R9 itself. Seemingly there were no damages on the surface of the aluminum pipe (probably it is made of super-duralium or compatible material), but the plating material (Zn?) of the 40 m and 80 m loading coils were somehow corroded (they are exposed for tuning by changing taps). Small taps at the loading coils were polished and conductive grease was applied. Probably the coils should be replaced after some years.

One more malfunction repaired was, as shown in Fig. 2, the 10 m stub being popped out from the clamp. It seems to be happened several months ago after a typhoon. The reason why the stub had popped out was unpredictable and a kind of mystery that needed time for an inexperienced old man to solve. The solution reached was that the pipes of R9 connected to the stub clumps twisted each other due to strong winds, and consequently the stub was disconnected. Although the joint of the pipes was fastened as tight as possible, twisting motion caused by strong winds could not be prevented due to conductive grease applied to the joint. So, the possible motion was stopped by a self-tapping screw at the joint. After these cares, R9 was again raised very carefully on the mast to the original position with the help of the lever hoist.

Fig. 2 The 10 m stub popped out from the clump (view from the end of R9).

I spent three days (working several hours a day) for the present maintenance process. Frankly, I felt my ages but fully enjoyed the process and still OK to climb tripod ladders up and down, but my serious problem is that I am not sure to be able to reinstall (or remove all the system) after several years or even less, hi hi.

In conclusion, I would like to highly evaluate survivability of R9. I am not certain how long my R9 will be useful from now on, but R9 is my best choice for multiband operation in a very limited space. The necessary space is about 1 m2 on the ground because additional ground radials are not necessary. However, space for guy ropes should be taken sufficiently.

The only my complaint about R9 was that the original manual did not include operational principle. Although the manual “ASSEMBLY AND INSTALLATION INSTRUCTIONS” contains requisite minimum and is well written in that sense, there is almost no description on the working principle. This challenge was resolved by reading an article, which can be found in “knowledgebase” of MFJ: The title is “Vertical Antenna Troubleshooting R9” written by AA5MT, which is available in the web under
https://www.mfjenterprises.com/HelpDesk/download_attachment.php?kb_att=26. This article provided me a deeper understanding on the R9 system.

As you feel, condition in these days is not good especially in high bands. Daily SSN is very frequently zero. Shifting to low bands is quite natural, and choosing R9 was good for me. With the aid of an antenna tuner, even 160 m band is reachable. Thank you for reading. 73/88 CU!

EARLY 80S TRANSCEIVERS, HARRY, JL3AMK, #15002

I was interested in astronomy when I was sixth grade of an elementary school student. One of my friends told me about a scientific magazine for children named "Kodomo no Kagaku." He gave me a back issue which he finished reading. It had series articles for astronomy and a feature article for ham radio. I would not know a ham radio and not become a ham if he did not give it me... After several years, I took an exam for ham radio and passed it in 1983, when I was third grade of a junior high school student.

My parents gave me a YAESU FT-757SX. It was very good transceiver for me and I was very active on 15 meters and 10 meters during high school days. I had used it until 2004, but I had to sell it to purchase an Elecraft transceiver kit, KX1. I built it and had enjoyed QRP operation.

The ARRL book "Low Power Communication" introduced a KENWOOD TS-130V as a QRP transceiver. It is an early 80s transceiver manufactured before I became a ham. I was interested in that transceiver and bought it at the net auction. It is simple but enough to have a CW QSO.

I was also interested in a KENWOOD TS-430V because it was a candidate for my first transceiver. I bought it at the net auction. It was an impulse purchase...

OK, I bought two KENWOOD rigs, TS-130V and TS-430V. In Japan, there is a famous proverb: "Nido aru koto wa sando aru" which means "what happens twice will happen three times." It might be a little bit another meaning from the proverb, but as you imagined, I bought other transceiver manufactured by KENWOOD in early 80s. It's a TS-530V. This is my first tube transceiver that I bought. I feel good sound from this one. This is one of my favorite rigs.

You can find an FT-757SX in the photo although I had released my FT-757SX before. I bought it again, of course! HI

MY NEW RADIO, SUGI, JK7UST, #7178

I've got a new radio last month. Because my lovely K2'100W amp has broken. Right now, it is a dedicated QRP machine. At this time it was K3's turn, but I wanted a more quiet radio. That's KENWOOD TS-890. So I enjoy its KENWOOD sound.

ELECRAFT K1 #1742, NAO, JO3HPM, #15008

I constructed an Elecraft K1, a QRP CW transceiver kit, from December 2003 through March 2004. My K1 consists of K1 Base TRX #1742 rev. F-4 (Mar 2003), KFL1-4 Additional 4-Band Filter Module rev. A-1 (Jan 2001), KNB1 Noise Blanker rev. C-1 (Jul 2001), KAT1 Internal Automatic Antenna Tuner rev. C-1 (Mar 2003) and KTS1 Wide Range Tilt Stand rev. G (Jan 2001). I measured some characteristics of my K1 at that time. In this report, I show them.

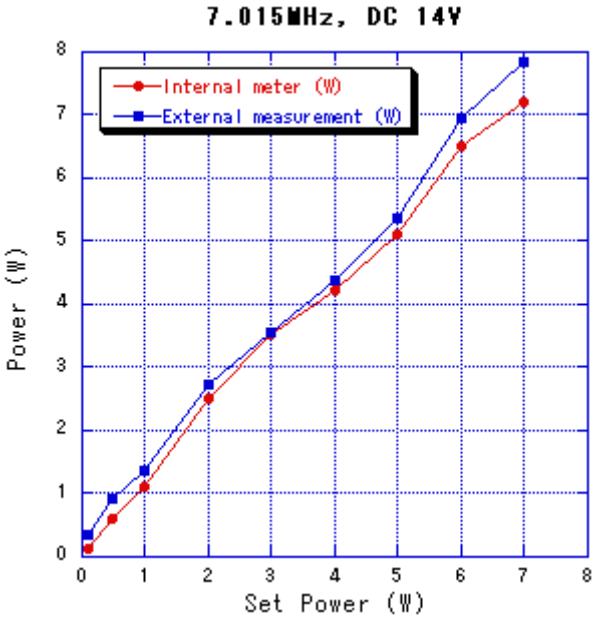

Fig. 1 Output power measurement against its setting values. The maximum output power were 7.8 W at 7 MHz, 7.0 W at 10 MHz, 7.4 W at 14 MHz and 5.5 W at 21 MHz band.

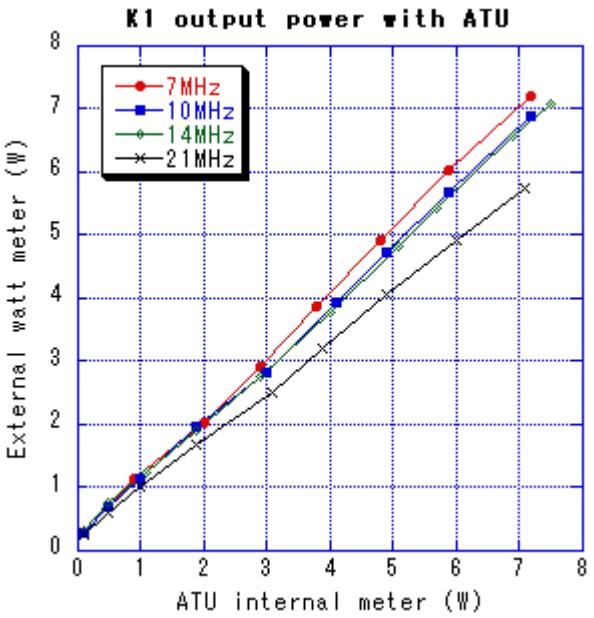

Fig. 2 Comparison of external power meter values against ATU internal power meter values at each bands. The real output power was about 20% lower than ATU display value at 21 MHz.

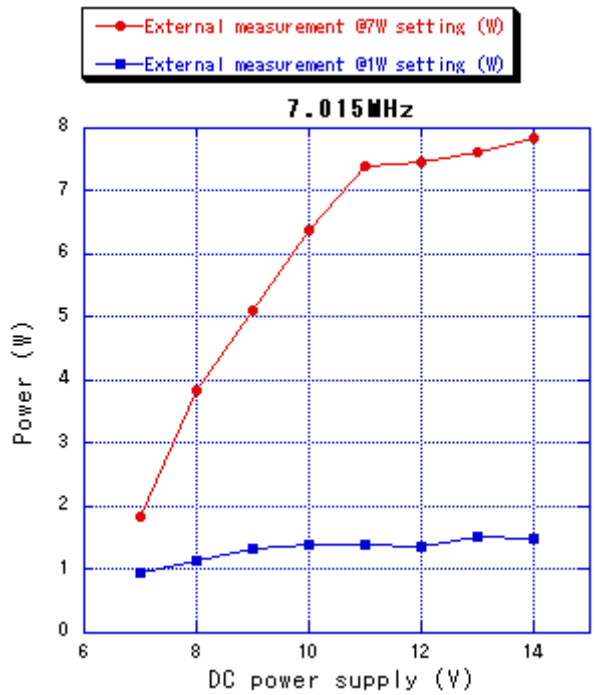

Fig. 3 Output power drop against DC power supply voltage. About 11 V was enough for maximum power operation. A message “BAT LO” was displayed at 8.7 V.

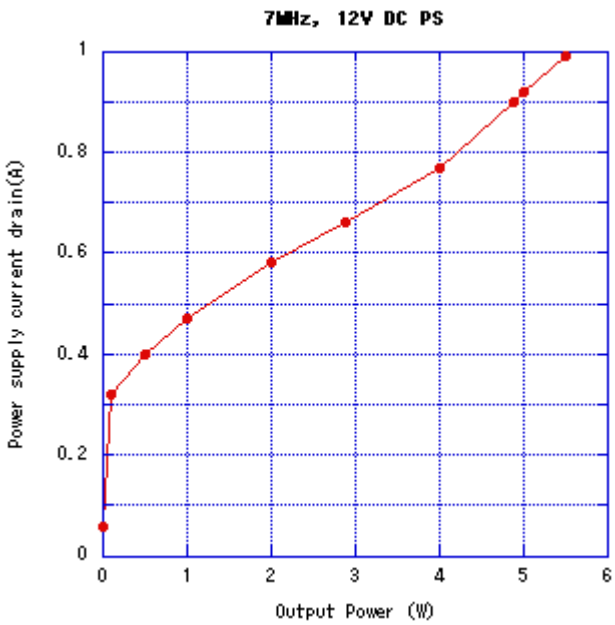

Fig. 4 The current drain of DC power supply against output power setting at 7 MHz. The voltage was set to 12V. The current was only 60mA at receive.

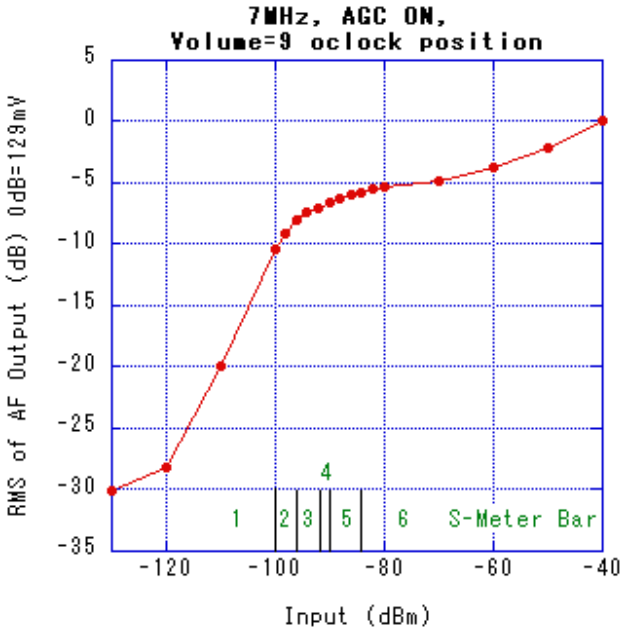

Fig. 5 The K1 displays signal strength by 6 LED bar graph. The RMS voltage of AF output was measured. The graph showed that AGC became ON at -100 dBm. The output audio was distorted at -30 dBm. In case of AGC OFF setting, the audio was distorted at -86 dBm.

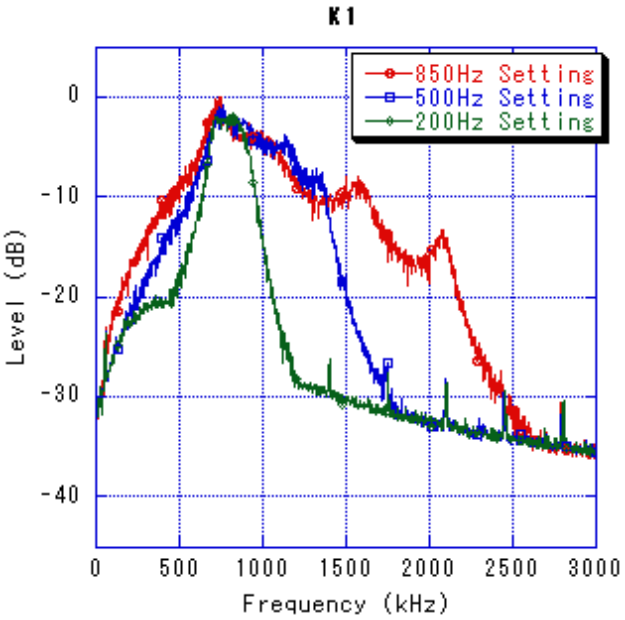

Fig. 6 Frequency spectrum of AF output at each filter width settings. The input RF signal was 7.020 MHz, -108 dBm sine-wave and was scanned a few kHz. The AF output was connected to a PC microphone input and measured using WaveSpectra software. peak hold function

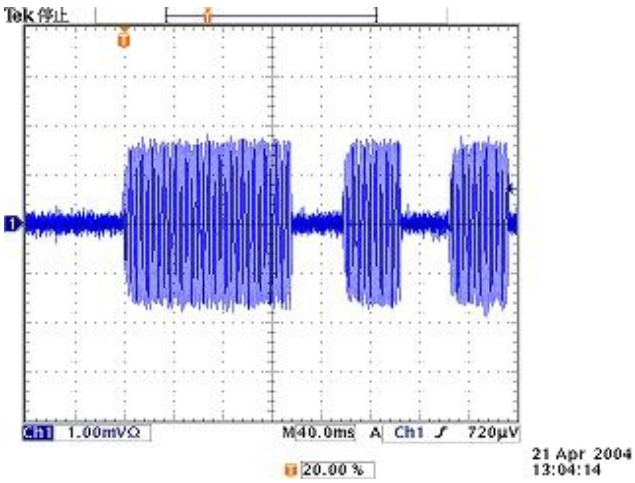

Fig. 7 The CW waveform of output RF made by internal keyer was measured. The rise-time was 4 ms and fall-time was 0.5 ms. No overshoot was observed. The ratio of dash and dit was about 3:1.

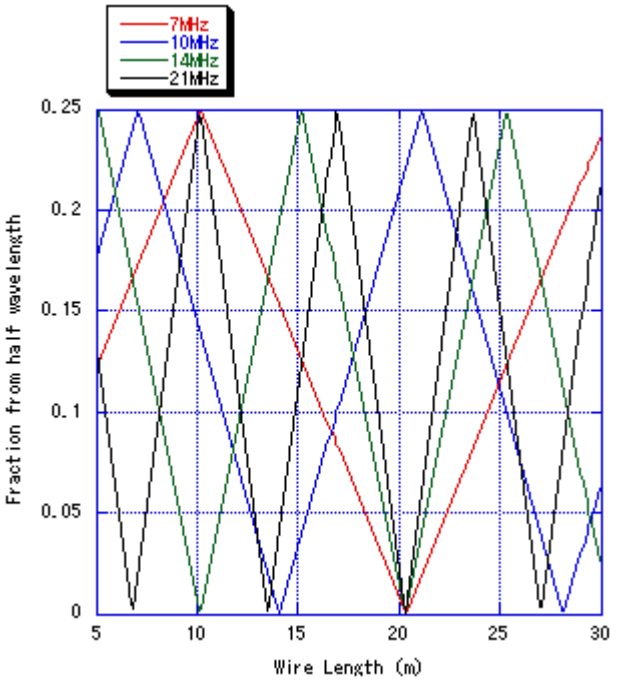

Fig. 8 Element length of Long wire antenna. According to Antenna Topics of “Elecraft - Reflections From Their Reflector”, length should be selected to avoid half wave length of each frequency to use. And radial length should be select quarter wave length. This figure showed fraction from half wave length of 7, 10, 14, 21 MHz. The point that all 4 lines were apart from 0 was suitable. In this calculation, reduction rate of wire was 0.95. The graph showed 8.1, 11.8, 16.6 and 25.0 m were good. As the result, I prepared 11.8 m wire and 4 radials of 10.2 m,7.0 m,5.1 m,3.4 m.

Table 1 The spurious of RF output signals were measured. The output power was set to 5 W and the signal was measured using HP 8591E spectrum analyzers to attenuate by 20 dB attenuator. The unit dBc was ratio to transmit signal. All spurious level were under -40 dB.

7 MHz Band		10 MHz Band		14 MHz Band		21 MHz Band	
Frequency (MHz)	Level (dBc)	Frequency (MHz)	Level (dBc)	Frequency (MHz)	Level (dBc)	Frequency (MHz)	Level (dBc)
2.63	-57.5	10.00	0.0	4.13	-56.7	9.60	-53.2
4.00	-55.5	20.25	-51.7	9.75	-56.9	21.00	0.0
7.00	0.0	30.38	-58.0	14.00	0.0	42.20	-51.9
9.75	-55.9	40.63	-53.2	18.25	-62.7	63.20	-52.8
11.25	-69.5			28.13	-49.1		
14.00	-72.5			42.25	-59.6		
21.00	-54.0						
28.13	-52.6						
35.13	-54.5						
42.13	-56.5						
49.25	-55.3						

The first ever DX QSO using the K1 was LU5DYV on 20 March 2004 on 20 m. The antenna was a long wire with SGC SG-230 ATU installed on 4th floor balcony of an apartment house.

The right picture was taken when I enjoyed a portable operation under cherry blossoms in sunny spring day.

FEA CW NET RESULTS: NO. 733 TO 745, NAO, JO3HPM, #15008

No.	Date (Y/M/D)	Time (UTC)	Freq. (MHz)	Controller	Participants
745-2	2019/3/31	0800-0823	14.054	JE7YTQ	VK4BGR
745-1	2019/3/30	2300-2355	7.026	JL1GEL	JK7UST, JA4IIJ, 7J1ATG/2, JS2AHG
744-2	2019/3/24	0800-0820	14.054	JO3HPM	VK4BGR
744-1	2019/3/23	2300-2351	7.026	JE7YTQ	JH2HTQ, JA4IIJ, JO3HPM, JA3UMK, JS2AHG, JA4MRL
743-2	2019/3/17	0800-0826	14.054	JO3HPM	VK4BGR, JK7UST
743-1	2019/3/16	2300-2352	7.026	JS1QIZ	JA4IIJ, JO3HPM, JL1GEL, JI1XJB/6
742-2	2019/3/10	0800-0827	14.054	JE7YTQ	VK4BGR, JL1GEL, JO3HPM
742-1	2019/3/9	2300-0001	7.055	JL1GEL	JA4IIJ, JK7UST, J1XJB/6, JO3HPM, JR0QWW, JS1QIZ, JS2AHG
741-2	2019/3/3	0800-0840	14.054	JL3YMV	VK4BGR, BW/G4TDS
741-1	2019/3/2	2300-2355	7.0255	JS1QIZ	JA4IIJ, JL1GEL, JI1XJB/6, JO3HPM
740-2	2019/2/24	0800-0818	14.054	JE7YTQ	VK4BGR
740-1	2019/2/23	2300-0000	7.0265	JL1GEL	JK7UST, JA4IIJ, JS1QIZ, JI1XJB/6, JO3HPM
739-2	2019/2/17	0800-0834	14.054	JL1GEL	BX8AAD, VK4BGR, JK7UST
739-1	2019/2/16	2300-0004	7.026	JS1QIZ	JA4IIJ, JA4MRL, JL1GEL, JO3HPM, JI1XJB/6, 7J1ATG/2
738-2	2019/2/10	0800-0835	14.054	JE7YTQ	VK4BGR, VK5EEE, JO3HPM
738-1	2019/2/9	2300-0023	7.026	JO3HPM	JK7UST, JL1GEL, JI1XJB/6, JG1BGT, 7J1ATG/2, JS1QIZ, 7N1ICA, JA4IIJ, JI2GZC, JH2HTQ
737-2	2019/2/3	0800-0817	14.054	JL3YMV	VK4BGR
737-1	2019/2/2	2302-0005	7.026	JS1QIZ	JA4IIJ, JK7UST, 7J1ATG/2, JL1GEL, JI1XJB/6, JO3HPM
736-2	2019/1/27	0800-0832	14.054	JE7YTQ	VK4BGR&7J1ATG/2, JO3HPM, JL1GEL
736-1	2019/1/26	2300-0012	7.026	JL1GEL	JK7UST, JA4IIJ, JR0QWW, 7J1ATG/2, JS1QIZ, JO3HPM, JI1XJB/6
735-2	2019/1/20	0800-0828	14.054	JO3HPM	JK7UST, JL1GEL, JS2AHG
735-1	2019/1/19	2300-2351	7.0255	JL1GEL	JA4IIJ, JS1QIZ, 7J1ATG/2
734-2	2019/1/13	0800-08??	14.053	JE7YTQ	none
734-1	2019/1/12	2300-2343	7.026	JS1QIZ	JA4IIJ, JL1GEL, JK7UST, JO3HPM, 7J1ATG/2
733-2	2019/1/6	0800-0813	14.054	JL3YMV	none
733-1	2019/1/5	2300-0010	7.027	JS1QIZ	JK7UST, 7J1ATG/2, JR0QWW, JA4IIJ, JL1GEL, JO3HPM, JA4MRL

FINALE

The purpose to construct the K1 was to take a fresh wind to my ham life. After the kit, I had a plan to construct a home made transceiver. My grand project was to construct a station equipped all home made things including an antenna, a power supply, a key and so on. But it still remains as a future plan. 73/88 and stay sober de Nao.