

REPORT ON CAPTURE PRACTICE -- DAY ONE

Day of Practice: Sept 8 2018
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Leland Gallup -- 15216 NW 41st Ave, 2nd floor

Two monitoring stations, denoted
"Radio Room" (receiver IC-718 & 7800 modem, sloping non resonant dipole from 12 feet to 30 feet, normally used for NCS521); and
"Gateway Room" (receiver IC-718 and loaned 7400 modem, inverted V non resonant antenna approx 50 feet up, normally used for KX4Z gateway)

Goal: get the "lay of the land" of capture from distant stations.

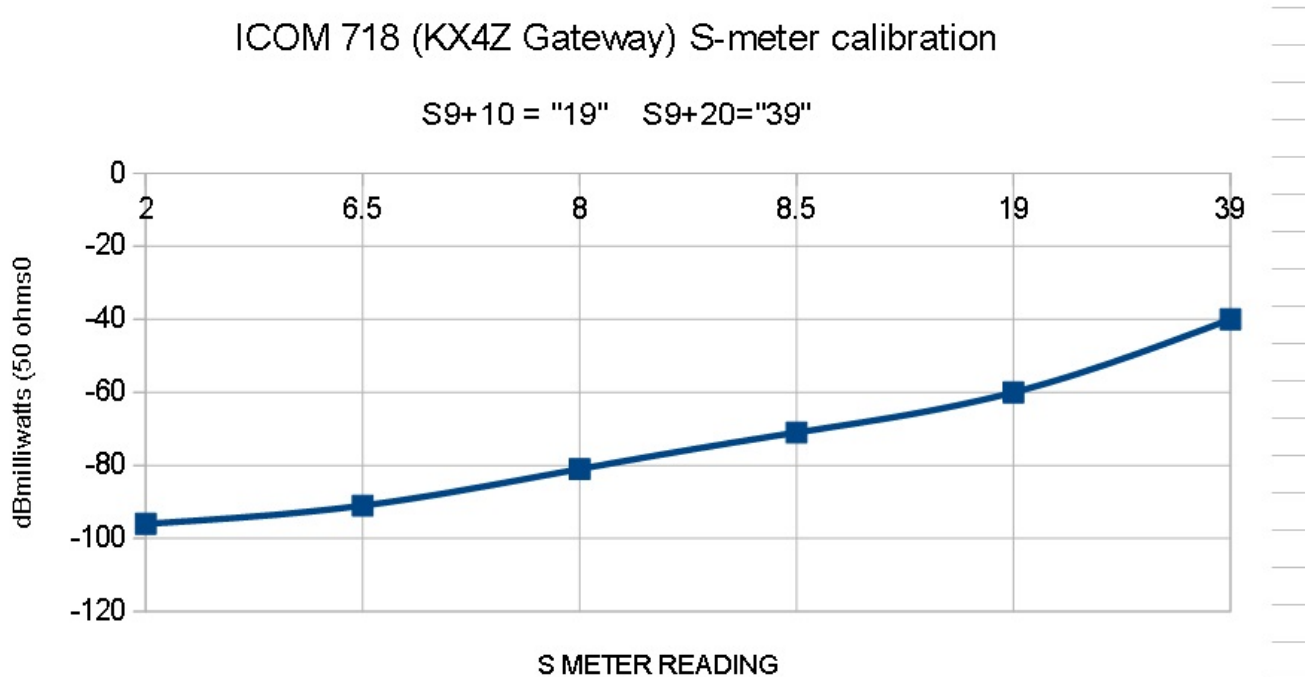
And just to be VERY clear: this testing strategy was set up to mimic as closely as I could, what Ron Kolarik or anyone else would want the test to look like:

1. The monitor station (my house) is hundreds to a thousand miles or so from the station [a gateway] from which traffic will be monitored. **THAT IS THE KEY POINT.**
2. To avoid damaging things or throwing modems out of kilter, I set myself as the "initiator" of downloading emails, about 15 miles away so that my signal wasn't overloading my monitor station. But again, I'm NOT monitoring my own signal --- I'm capturing emails being provided by a DISTANT RMS, hundreds to thousands of miles away, and with fairly new software written by a very novice programmer (me) The reason I'm initiating is I do not have weeks and months to get this done --- we need to optimize this system and get answers QUICKLY as to how well, or whether or not it even works on real signals. .

MONITOR TEST LOCATION: My house has two available wire antennas for HF work that are usable right now. The inferior one slopes from about 12 feet to about 30 feet, keeps getting trapped under the fronds of a palm tree. The superior one is far higher, inverted vee about 45-50 feet up. Both are non-resonant, and that is a problem, because both are fed by LDG-AT600 auto tuners, and in this work today, it was not really possible to TUNE them adequately. Both receivers are used ICOM 718's and one has a Dragon 7800 and the (better antenna) one temporarily has a loaner Dragon 7400. Both have raspberry pi's with identical software.

The goal was to have Leland try and set frequencies on the radios and make some qualitative analysis of what the S meters show. The Icom 718 S meter is astonishingly non linear. I noted when we started, with both rigs on 40 meters, the inferior antenna rig was showing S nothing, and the superior one showing S7 --- but my experience says that there may only be 6dB difference between those two readings. We have a **NOISE PROBLEM on lower bands** at my house, likely somewhat due to my 8 kilowatts of SOLAR PANELS driving Outback Charge Controllers and 8 kW AC inverters running all the time. This was a FULL SUN day. Additionally, my house has a TON of electronics and so do my neighbors. The noise levels are nearly as nice here as they used to be as people have built out around me. This is what I have to work with, so I do the best I can. Recently my noise levels climbed even more -- it was a little wallwart that came with a remote TV headset that Nancy purchased.....roughly 10 dB more noise.

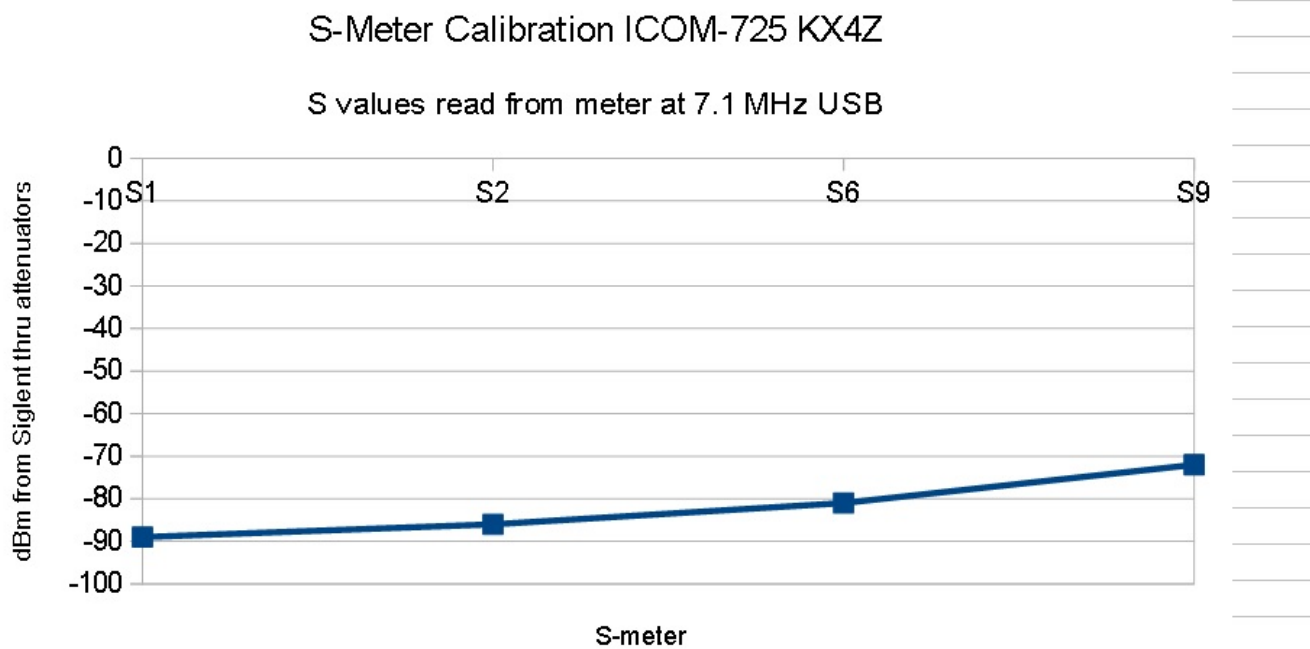
S



NOISE LEVELS AT THIS STATION TYPICALLY S7-S7-1/2 40 meters --- **implies approximately -85 dBm signal floor.**

REMOTE LOCATION: (to trigger remote Gateways into sending me emails) trying to get my signal much *much weaker* at my house, I drove about 15 miles westward, to the next little town, Newberry, where my post office is located....but I really live between newberry and Gainesville. At a ParkNRide that was deserted, I used a slingshot to put up a 40 meter near-vertical wire antenna (65 feet) and a 1:49 endfed balun that I built last week, with 50 feet of coax to my go-box system, a MFJ intellituner and an ancient ICOM725 with a PTC-IIIusb pacJustor. I set up this antenna and verified that I could connect to WW4MSK in the north Ga Mountains on 40 meters, and then drove home to explain all of this to Leland. Once he seemed to udnerstand his jobs, I drove back 15 miles, reconnected to the wire antenna hidden in the trees beside the PARK N RIDE (which was deserted) and we started the test.

Smeter calibration on 7100 kHz of Remote Location IC-725: (method: Siglent spectrum analyzer tracking generator, external physical attenuators, one of which is a dummy load with a tap, measured by the Siglent to be -71 dBm attenuation at this frequency.



TEST RESULTS

We worked at it for about an hour. On 40 meters, it was worse than discouraging. Not a single station that I was able to connect to, caused ANYTHING more than 1 or 2 packets to be captured based on what Leland told me over the phone. I was seeing weak, but usable signals of about S1 on the ancient 725. here is a list of the stations I tried;

Impact of Monitoring Location RFI Noise

After I calibrated these two S meters, it is clear that I was making contacts from the Remote Location with signal levels at the receiver in the range of S1 = -89 dBm. The background NOISE LEVEL at the Monitor location is in the range of -85 dBm --- in other words, unless a freak lobe of the Monitor location antenna, or some difficulty with the vertical antenna at the Remote location cause a wide disparity of antenna gains (which can happen) --- the monitor location had a NOISE LEVEL 4 db even above the SIGNALS I was copying at the remote location, and the noise level at the remote location may have been much much lower, since to my ear, I had a S/N ratio of at least 3dB and possibly higher. **In other words, the monitor location, for 40 meters, was severely handicapped. That probably explains why nothing worked until we moved to 20 meters.**

SYNOPSIS OF ONE HOUR OF TESTING

1518 (3:18 PM) WW4MSK (40 meters) -- north georgia -- S1, decent connectin 1400 bps, moved traffic 7.103 dial frequency -- SSB foreign voices nearby, and leland caught NOTHING.

Tried that again -- lots of repeats, not really working on my end EITHER, aborted.

1527: KQ4ET 10.145 dial -- (I forgot my antenna really didn't work at all on that band....fog of war). No workable connection

1530 AB4NX (Atlanta, 40 meters) 7.101.5 dial, my notes suggest I moved some traffic, but only 600 bps, spanish nearby and leland heard nothing.

1535 WD4SEN about 85 miles away on 40 meters -- no connection at all

1536 soe station on 30 meters -- no connection

1539 WW4MSK on 7.102....S1 unworkable signal, gave up

Note: leland says I am "S8" which means I think that i'm 6db or so above the background noise

Correction: based on the curves measured afterwards, it may be only 4dB or so.

1542 AJ4FW (GA) 40 meters Not working for either of us

1546 N5TW on **20 meters** --- I told leland just to hold off -- good connection!!!

We moved Leland to 20 meters. I had him hit the CW key and TUNE the antenna controller on ONE station -- probably the superior antenna. My station would call immediately on the same frequency, effectively ID'ing for him (he doesn't know CW and nothing connected that could do digital)

Gave up on the Radio Room Station; We gave up on the NCS521 Radio Room receiving system at this point. I doubted that i would be able to timely talk Leland through tuning that antenna up and protect the receiver in the Gateway room. The next morning, I did tune that auto-tuner, and the audio signal level jumped remarkably -- so that station was at a severe disadvantage for the remainder of the test.

1549 N5TW 14.105.8 -- good signal from N5TW, reading about S4 on my 725 but very readable. i believe I moved a piece of traffic 2121 unencoded bytes (Retrospect: Don't know if the calibration of the S meter on 20 meters is same as 40, but if it were, this would indicate **approx -83 dBm signal**) [the capture file for that didn't work that I have been able to figure out yet; retrospect: the Monitor location might still struggle mightily with this low signal level]

1555 N5TW 14108.5 -- I had sent myself a hurried email from my gmail account -- retrieved it on 20 meters 588 unencoded character and it **decoded perfectly and is attached.**

1558 -- I did another file with N5TW but leland says nothing was happening at all on the raspberry and that made me nervous that the program had stopped, so i talked him through completing the program (Type exclamation point and enter) and backing up the files, which turned out to be unnecessary. I can't find this file anywhere so far in the raspberry files so I don't know what happened.

I talked Leland through restarting the program Retrospect: this may have been totally unnecessary; the restart appears to have merely appended to the previous file. The signal levels at the Monitor Location may have just been too low for capture for a period of time.....

1608 i sent RECEIVED another file to N5TW. 1388 uncompressed; a portion of this was captured in a capturefile and looks like it should uncompress but i haven't succeeded yet.

When I got home, I'm a little confused by the files captured, but I was able to completely reconstruct the email that was downloaded at 1555. The capturefile and the reconstructed text for that are attached.

So a grand total of 1 email perfectly captured for an hour's work. A bunch of stations on 40 meters with really weak signals, usable at my remote location, by not usable at my house apparently.....

Lessons:

1. I think the ParkNRide in a desolate outskirts of small town has much lower noise than my house and i was making connections that didn't even budgt the modems at my house -- where you can hear "frying pan" noise continuously in the daytime. **1 day later: Confirmed through calibrating the respective S-meters.**
2. Getting a GOOD SIGNAL seems much more important than distance. N5TW is almost a thousand miles from me, but he was BY FAR the only really strong signal that I ever connected to in the entire hour. Comment; even with N5TW we were working with relatively weak signals.....-83 dBm likely.
3. This was, in my expeience, the MOST DIFFICULT TIME OF THE DAY to make any winlink connection. The North Florida ARES people learned the hard way that 80 meters is almost useless at that time of the day, in a recent small exercise that Dave Davis conducted with Karl Martin (SEC)
4. I suspect I would have MUCH better success at night, when my solar power shuts down. Still, I cannot get my house to be nearly as RF Quiet as i would like.

5. With a **STRONG** better signal, we had excellent capture on the PMON on the better antenna rig. So YES -- it does work with a sufficiently strong signal from a station almost a thousand miles away and on 20 meters. *But we didn't get EVERY email by any shake of the stick* and work will need to be done to figure out what are the issues and whether they can be optimized. I may or may not be able to complete that optimization.... **but getting ONE PERFECT EMAIL on the first day of trails in the first HOUR of such trials, was certainly ENCOURAGING.**

6. Another item: I enabled the PMON to give me "repeat" ("request") packets also --- there are PLENTY of those captured at various times in the 38 kilobyte capture file (which I can send anyone). My theory was to start getting this data NOW because if i can adapt the software to take advantage of repeats where needed, i'll make it a far stronger monitoring system. However, the only file that succeeded today happened to have zero repeats at all, over a 1000 mile track.

Retrospective comment: The capture file reveals that the monitor station detected no retries for that transfer! Estimated signal level -83dBm (based on 40 meter calibration of S-meter) and perfect capture with no retries. Fairly impressive modem!!

REQUEST PACKETS: The major portion of the (short) capturefile for the RADIO ROOM receiving setup is also included below -- and reveals that for one brief period, it was capturing original packets when the trigger remote station in Newberry was needing REPEATS. --- Allows you to see how dicey the reception was and variable between the two stations....just a moment later, the RADIO ROOM station completely misses two packets (which the Newberry remote trigger station apparently got because the message did go through.

So --- capturing off the air signals on 20 meters is definitely POSSIBLE and worked FAR BETTER (on 20 meters) for me today, in the heat of the day, than 40 meters where my house is at a very severe noise disadvantage. There are two other messages with partial packets and I'll need to sit and ponder over them a bit to see what I can learn from them. I am unable at this time to make any real conclusion if there is any significant difference between my pactor modem and the one being loaned to me. At least the one being loaned DOES WORK.

I'm enclosing a photo of my data capture sheet, and two important files. In my experience, taking a photo of lab notebooks taken in real time during an experience has been incredibly useful later on.....

My next chance to work further on CAPTURE will not come until TUESDAY. Not sure what I can do then, but I'll churn through this data and see if I see any improvement or test that needs to be done. I'm working on getting more people to help me.

Gordon Gibby KX4Z





DATE: 9/8/19
 Name: _____

ICDM 725 SCS PTCM-USB

TIME START	RADIO ROOM MODEM:		START END	GATEWAY ROOM MODEM		START END
	STN, FREQ	S-meter, comment		STN, FREQ	S-meter, comment	
1518	W1W4MSK 7.103.2F	3089 53526R 166D 3.7725 X496Q5 12017 (this not getting signal)		SSB Foreign overlay	TUNE -3	81 1400 BPS
1520				lots of repair		451
1527	KR4ET 14.145 DF		NO GOOD CONNECTION			451
1530	AR4NX 7.101.5 DF	1887 Gattoluzed 1055		Spanish	FMNR (98)	81 P3600
1535	W1W4MSK 765V	NO CONNECTION				
1536	3DM	NO CONNECTION				81 1400 BPS
1539	W1W4MSK 7.102	(homegrid better?)				
1540	W1W4MSK 7.102		NO CONNECTION	Coland says I am 58		
1542	AT4FW 7.152.2		Coland gets 0m	0ingotens		
	K5KCA 14.102.7 N5TW	(just try)	NO CONNECTION			
1546	N5TW 14.108.5	dem (send email in her)				54
1551	N5TW 14.108.5	214 KR4K 1149	(43)			
1555	N5TW 14.108.5	578 OOBW 432		did not see any repair	NRD=1 GOOD RECONSTRUCTION	FROM (131) P3 5400 tune +1
1557	N5TW 14.108.5	3653 GYSU 1933		← CANT FIND ANYWHERE		
1608		1588 693				



APPENDIX: Portion of CaptureFile for 1555 Correct Capture:

```
###PLISTEN: Level: 3:
###STATUS: SL: 5, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: -21.3, CRC: 0C7F, FRCNT: 3,
FRNR: 134
###PAYLOAD1: LEN: 0, TYPE: 0
###PAYLOAD2:

###PAYLOAD_END
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###PLISTEN: Level: 3:
###STATUS: SL: 3, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: -21.8, CRC: D522, FRCNT: 1,
FRNR: 135
###PAYLOAD1: LEN: 59, TYPE: 0
###PAYLOAD2:
: KX4Z 00HVWTJJHS1W 432 ggibby@anest.ufl.edu Test
FC EM 00H
###PAYLOAD_END
Ã%Ã°
###PLISTEN: Level: 3:
###STATUS: SL: 3, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: -21.9, CRC: 1D12, FRCNT: 2,
FRNR: 136
###PAYLOAD1: LEN: 26, TYPE: 0
###PAYLOAD2:
VWTJJHS1W 588 432 0
F> 4B

###PAYLOAD_END
Ã%Ã°
###PLISTEN: Level: 3:
###STATUS: SL: 3, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: -21.6, CRC: 370D, FRCNT: 3,
FRNR: 137
###PAYLOAD1: LEN: 0, TYPE: 0
###PAYLOAD2:

###PAYLOAD_END
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###PLISTEN: Level: 3:
###STATUS: SL: 3, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: -22.1, CRC: 4792, FRCNT: 0,
FRNR: 138
###PAYLOAD1: LEN: 0, TYPE: 0
###PAYLOAD2:

###PAYLOAD_END
Ã%Ã°
###PLISTEN: Level: 3:
###STATUS: SL: 3, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: -23.0, CRC: 57DD, FRCNT: 1,
FRNR: 139
###PAYLOAD1: LEN: 55, TYPE: 8
###PAYLOAD2:
65, 73, 74, 00, 30, 00, 02, FA, 6F, E7, 4C, 02, 00, 00, EC, F5, 7A, 1C, 6D, 67, 6F, 79, D4, F1, 78, FC, 1D, 6B
, AB, EE, FE, F6, F3, 33, 96, C3, F6, 80, 7C, 70, B0, 77, D7, F7, 1C, 5D, DD, 28, C0, 17, 12, 9D, 1B, 1A, 3C

###PAYLOAD_END
Ã%Ã°
```

###PLISTEN: Level: 3:
###STATUS: SL: 3, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: -21.6, CRC: 2727, FRCNT: 2,
FRNR: 140
###PAYLOAD1: LEN: 57, TYPE: 8
###PAYLOAD2:
1E, 05, BD, B7, 4B, FD, FB, FC, D3, AB, 73, 8B, 77, DC, 87, E7, 3D, F5, F7, 4E, 02, F3, 2D, 7F, 56, 7F, FB, 4D
, D0, 0F, CB, F1, 2E, F3, E1, 2C, F5, D4, 6A, 18, 9A, EB, F9, 29, 3C, D2, 23, BD, 6C, DB, ED, 27, DE, ED, F6, A
3, 56

###PAYLOAD_END

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###PLISTEN: Level: 3:
###STATUS: SL: 4, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: -23.3, CRC: F18A, FRCNT: 3,
FRNR: 141

###PAYLOAD1: LEN: 112, TYPE: 8

###PAYLOAD2:

88, 17, 59, A4, 14, E1, 9B, B8, E1, 75, B9, CC, E2, E6, DF, 71, 8F, 0B, 7E, CB, 2E, C6, 1F, 49, D9, 87, 0F, 01
, 2E, 2A, 94, B0, 0F, 51, 2D, 97, 99, 0A, 06, 0B, A5, 0E, 91, B9, F1, 12, 06, 39, 94, AA, 59, 21, F4, 82, 60, E
3, 48, 90, 4C, B9, 92, E8, 20, 54, 1C, A9, 25, F5, 05, D6, A6, 24, A9, 6F, 93, ED, F4, 21, 14, 60, B2, 86, 24,
EF, D2, 0E, 7F, 3E, 96, E4, 90, F0, 41, 3E, FF, E8, C1, 3A, 0B, 7F, 7E, 3F, 3D, 52, F0, 36, 73, EE, 9E, 17, E6
, 8B

###PAYLOAD_END

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###PLISTEN: Level: 3:
###STATUS: SL: 4, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: -23.1, CRC: F050, FRCNT: 0,
FRNR: 142

###PAYLOAD1: LEN: 118, TYPE: 8

###PAYLOAD2:

DF, F2, 94, 8E, 43, 4E, C0, AE, BA, 37, F2, 59, 65, A8, 50, 39, 24, 03, 3F, A5, 28, 76, FC, C6, E0, 23, 0D, E4
, 3A, 9A, DF, 38, F8, 2F, 02, B6, FC, 9F, EB, E7, 60, 03, FA, 00, D6, FB, 7F, 40, D4, 2D, 48, 1D, C3, 53, 6C, 4
3, 7C, B1, 65, 07, CC, EF, 61, 96, 21, 2D, 5E, DD, FA, E7, 3F, 9D, 77, 6E, 2D, EB, 0F, 7D, 67, B0, 9E, 16, 12,
0E, 66, 8C, 8E, BA, FB, 9B, 99, 0A, E0, 49, 9A, DF, DC, AC, 59, A3, AB, 49, 3E, CA, AA, 2D, CF, 34, D1, F0, 9E
, 4E, 35, AF, A3, 36, 2B, 3E

###PAYLOAD_END

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###PLISTEN: Level: 3:
###STATUS: SL: 4, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: -23.7, CRC: CB6B, FRCNT: 1,
FRNR: 143

###PAYLOAD1: LEN: 102, TYPE: 8

###PAYLOAD2:

63, BD, 9C, 2D, C3, DE, CA, 93, 44, 1A, 1D, 62, 44, 7B, D4, 92, 2F, FA, 79, C7, C5, C4, E8, A4, DA, 53, BF, 0B
, DE, 0A, 07, E3, 8F, 66, 2B, BE, D4, F0, DB, E6, 82, 79, C1, BE, B8, AC, B6, D2, 68, 58, A4, B5, 71, 95, 0F, A
D, 47, 93, 05, 88, 2B, AF, 9D, AA, 11, D1, 4C, A1, 94, B7, E8, A1, DE, 69, 95, 9B, 25, 95, B0, 56, ED, 25, 4C,
96, AB, 14, 64, C7, 7D, E7, 6D, 35, 19, 95, 74, 9F, FC, AC, AE, E0, 04, 98

###PAYLOAD_END

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###PLISTEN: Level: 3:
###STATUS: SL: 4, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: -24.2, CRC: 4F65, FRCNT: 2,
FRNR: 144

###PAYLOAD1: LEN: 0, TYPE: 0

###PAYLOAD2:

APPENDIX: Reconstructed Email captured from >900 miles away

MID: 00HVWTJJHS1W
Date: 2019/09/08 19:54
From: SMTP:ggibby@anest.ufl.edu
To: KX4Z
Subject: Test
Mbo: SMTP
Body: 463

This is a dictated email so I will have something to test myself. We have finally gotten a good signal on N5TW. Before that it looked like my home station has a higher noise level from the solar panel charge controller's and thus it never got any signal- when I was getting s1 week but readable signal sitting in the park-and-ride in Newberry Florida.

It looks like N 5TW on 20 m is the station that my home station can actually monitor.

Sent from my iPhone

APPENDIX: SNIPPET FROM THE RADIO ROOM CAPTURE FILE

NOTE: You can see the RETRY PACKETS in this capture. Icom 718, 12-to-30 foot sloping dipole; DRAGON 7800 modem; this station was NOT retuned to function on 20 meters and effectively was lost to the study at that point.

Comparing the FRAME NUMBERS to the handwritten notes from Leland, all of these packets were copied during the 1531 attempt at a transfer. Distant Gateway AB4NX on 40 meters, with QRM and very low signal -- the presence of the REQ 1 packets indicates that even my remote trigger station was needing retries.

cmd:
*** PMON VERBOSE: 3

cmd:
*** PMON HEX: 1

cmd:
*** PMON PACKETS: 1

cmd:

PACTOR-1/2/3 Monitor started:

=====
cmd: ú
###PLISTEN: Level: 3:
###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: 14.2, CRC: BF00, FRCNT: 1, FRNR: 3
###PAYLOAD1: LEN: 0, TYPE: 0
###PAYLOAD2:

###PAYLOAD_END
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###PLISTEN: Level: 3:
###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: 14.7, CRC: C85C, FRCNT: 1, FRNR: 4
###PAYLOAD1: LEN: 5, TYPE: 0
###PAYLOAD2:

EM 4L
###PAYLOAD_END
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###PLISTEN: Level: 3:
###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: 14.6, CRC: 797C, FRCNT: 2, FRNR: 5
###PAYLOAD1: LEN: 5, TYPE: 0
###PAYLOAD2:
0ZWCE

###PAYLOAD_END
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=====NOTE PACKET CAPTURED BY THIS STATION BUT NOT BY THE
ACTUAL REMOTE TRIGGER STATION -- BECAUSE IT DEMANDED REPEATS --
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###PLISTEN: Level: 3:
###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: 15.5, CRC: 440B, FRCNT: 3, FRNR: 6
###PAYLOAD1: LEN: 2, TYPE: 0
###PAYLOAD2:

B
###PAYLOAD_END
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###PLISTEN: Level: 3:
###STATUS: SL: 1, CYC: 0, **RQ: 1**, REV: 0, LSB: 0, dF: 16.3, CRC: 440B, FRCNT: 3, FRNR: 7
###PAYLOAD1: LEN: 2, TYPE: 0
###PAYLOAD2:

B
###PAYLOAD_END
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###PLISTEN: Level: 3:
###STATUS: SL: 1, CYC: 0, **RQ: 1**, REV: 0, LSB: 0, dF: 15.6, CRC: 440B, FRCNT: 3, FRNR: 8
###PAYLOAD1: LEN: 2, TYPE: 0
###PAYLOAD2:

B
###PAYLOAD_END
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###PLISTEN: Level: 3:

=====NOTE MISSING PACKETS 0 AND 1 =====

###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: 14.1, CRC: CF9F, FRCNT: 2, FRNR: 9
###PAYLOAD1: LEN: 0, TYPE: 0
###PAYLOAD2:

###PAYLOAD_END
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###PLISTEN: Level: 3:
###STATUS: SL: 1, CYC: 1, RQ: 0, REV: 1, LSB: 0, dF: 7.8, CRC: 65F5, FRCNT: 3, FRNR: 10
###PAYLOAD1: LEN: 34, TYPE: 8
###PAYLOAD2:
77,F6,D6,7D,2F,F7,EF,F3,4E,A7,7F,17,C1,6F,17,C2,8B,DE,05,65,3A,02,EF,43,62,FB,DD,61,FF,E6,7
C,DE,C1,FA

###PAYLOAD_END

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###PLISTEN: Level: 2:

###STATUS: SL: 2, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: -11.1, CRC: 2147, FRCNT: 1, FRNR: 11

###PAYLOAD1: LEN: 5, TYPE: 6

###PAYLOAD2:

kx4z

###PAYLOAD_END

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=====NOTE THE TRIGGER STATION MISSED THIS PACKET -- BUT THE
MONITOR STATION GOT IT ON THE FIRST TRY!!!=====

###PLISTEN: Level: 2:

###STATUS: SL: 2, CYC: 0, RQ: 1, REV: 0, LSB: 0, dF: -11.9, CRC: 2147, FRCNT: 1, FRNR: 12

###PAYLOAD1: LEN: 5, TYPE: 6

###PAYLOAD2:

kx4z

###PAYLOAD_END

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###PLISTEN: Level: 3:

###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 1, LSB: 0, dF: 1.1, CRC: BBFD, FRCNT: 1, FRNR: 13

###PAYLOAD1: LEN: 0, TYPE: 6

###PAYLOAD2:

###PAYLOAD_END

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###PLISTEN: Level: 3:

###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: 2.4, CRC: 8966, FRCNT: 2, FRNR: 14

###PAYLOAD1: LEN: 0, TYPE: 6

###PAYLOAD2:

###PAYLOAD_END

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###PLISTEN: Level: 3:

###STATUS: SL: 1, CYC: 0, RQ: 1, REV: 1, LSB: 0, dF: 3.1, CRC: 8966, FRCNT: 2, FRNR: 15

###PAYLOAD1: LEN: 0, TYPE: 6

###PAYLOAD2:

###PAYLOAD_END

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###PLISTEN: Level: 3:

###STATUS: SL: 1, CYC: 0, RQ: 0, REV: 0, LSB: 0, dF: 8.4, CRC: 98EF, FRCNT: 3, FRNR: 16

###PAYLOAD1: LEN: 0, TYPE: 6

###PAYLOAD2:

###PAYLOAD_END

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cmd:
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