

PSK31 FUNDAMENTALS

CARA SPRING TECHNICAL SESSIONS

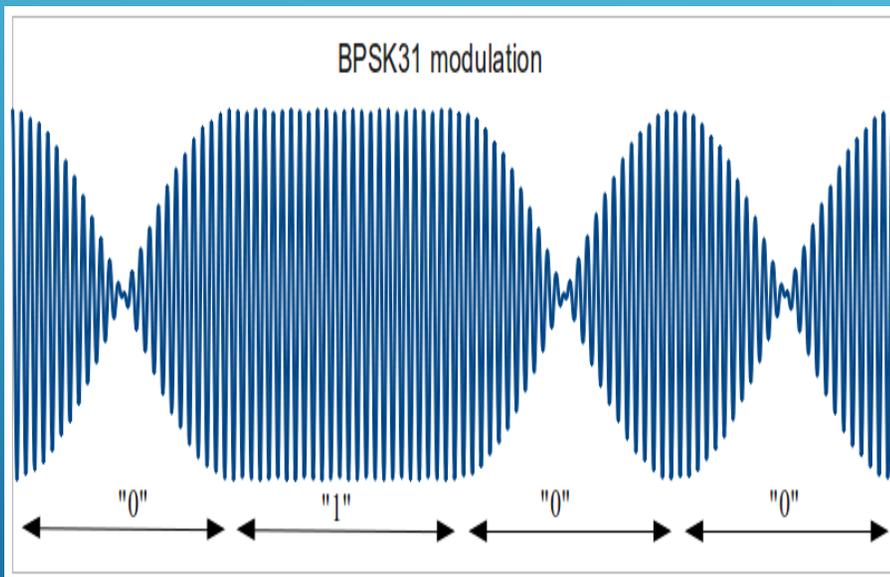
APRIL 18, 2015

BY Peter Barry, VA6PJB

SAFETY MOMENT

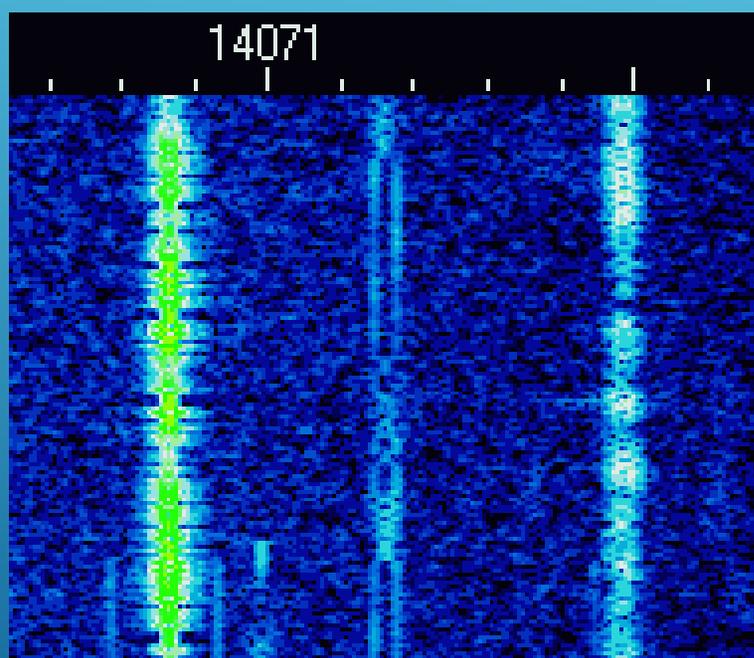
- ▶ Distracted driving and radio operations
 - ▶ Texting and driving
- 
- A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

WHAT IS BPSK31?



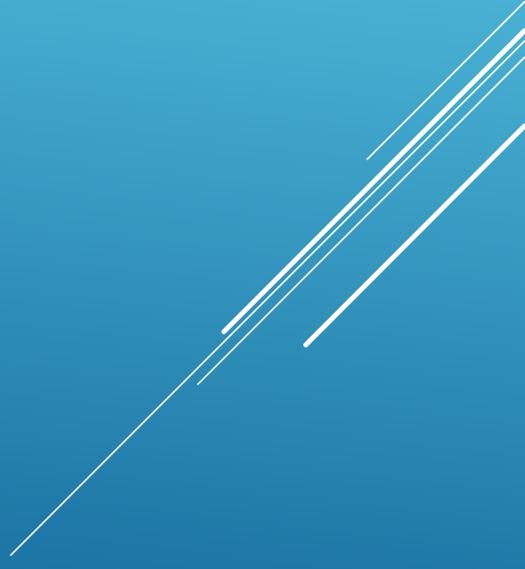
- ▶ Binary
- ▶ Phase Shift Keying
- ▶ 31 baud
- ▶ Only 15 Hz wide
- ▶ With 100 Hz spacing, can get 20 conversations in same space as one 2.5 kHz phone QSO

WHAT IS BPSK31?



- ▶ Radio teletype, computer based
- ▶ Real-time keyboard-to-keyboard chat
- ▶ Similar in part to RTTY, but fewer errors and more "punch".
- ▶ Uses the computer soundcard similar to DSP.

BASIC STATION

- ▶ HF SSB Transceiver
 - ▶ Soundcard-equipped PC
 - ▶ Antenna
 - ▶ PSK31 Software
 - ▶ (optional) Soundcard Interface
- 
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BASIC STATION



HISTORY

- ▶ Developed Peter Martinez G3PLX
- ▶ Introduced December 1998.
- ▶ The 31 baud BPSK modulation system used in PSK31 was introduced by Pawel Jalocho (SP9VRC) in his SLOWBPSK program written for Motorola's EVM radio.

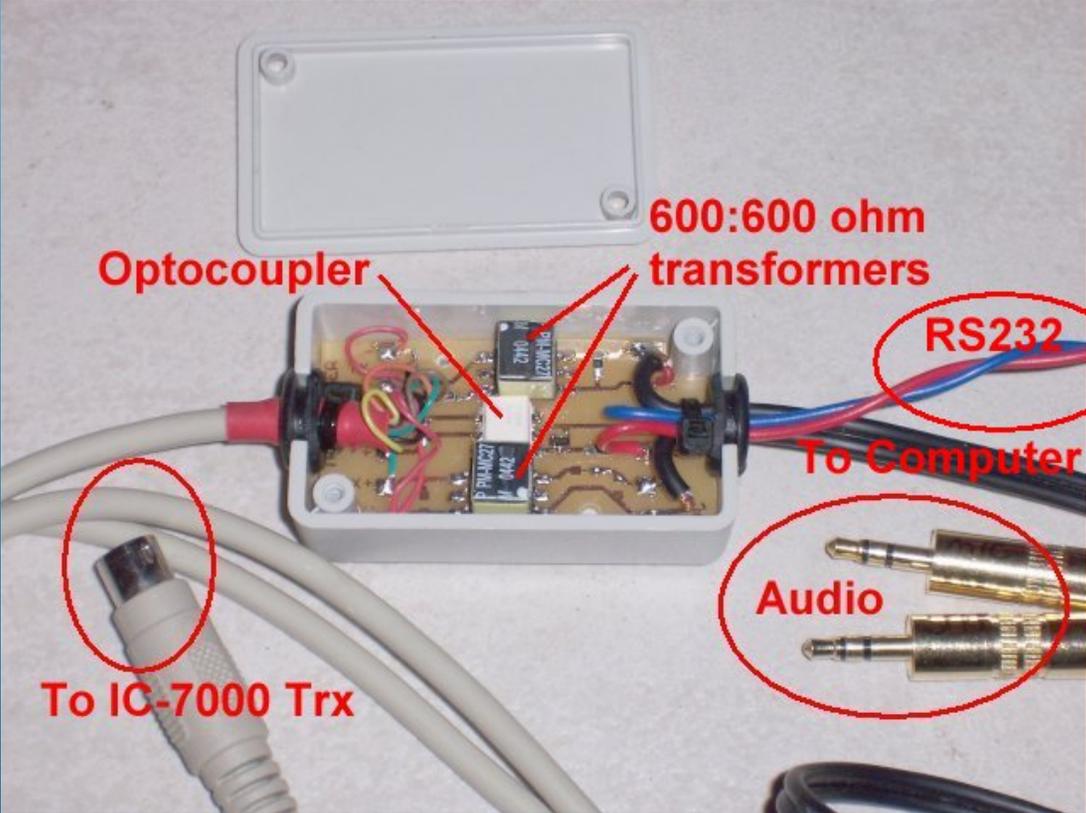
VARICODE

- ▶ Binary 1 and 0
 - ▶ Most frequent letters get shortest codes
 - ▶ More efficient than Baudot code used for RTTY, achieves 50 wpm with 31 baud.
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INTERFACES

- ▶ Can be really simple, speaker to microphone, but set up is tricky and ambient noise can interfere.
- ▶ Want electrical isolation to protect the computer and the radio
- ▶ Interface can have on-board sound card.

INTERFACES



INTERFACES



SOFTWARE

- ▶ Very good free programs
- ▶ Digipan
- ▶ Fldigi
- ▶ Digital Master 780 – part of Ham Radio Deluxe
- ▶ Many more for Windows, Mac, Linux

VA6PJB - DigiPan

File Edit Clear Mode Options View Lock Configure Help

Lookup CQ Call 3 Call BTU Signoff File Brag T/R Squelch Clear Multi ^

Call: Name: QTH: Rec'd: Sent: Band: Notes: *   

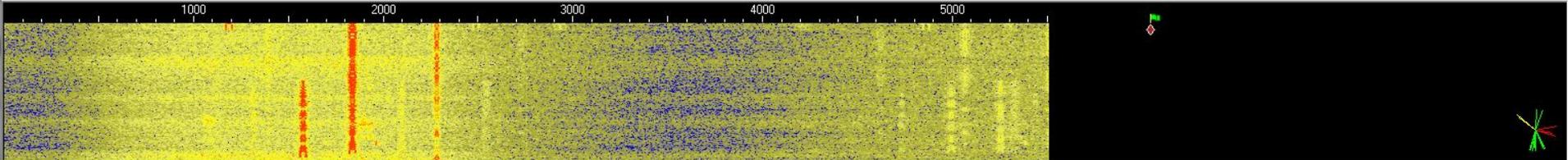
W5KLT Kevin Houston 499 499 20m

5, 070 #1006. Info on QRZ.com BTU Javier, How copy
de K7NWF K7NWF K7NWF pse k t c eei rt eee
I NOIAI k lce a e eteEiie e
at job ... been a

W5KLT DE VA6PJB
I am also on an attic mounted dipole, but
using 20 watts. Almost no one uses more
than 40 watts on PDK31. I've gotten as far
as New Zealand ore central Russia on 10
watts. k
PJB de W5KLT
Actually at tWjoment I'm running 30 watts
but on phone I run 100. I also keep it below
40 on PSK3
BTU Peter, VA6PJB de W5KLT kn eeet ni

W5KLT DE VA6PJB
Thanks for the great QSO. Perhaps we
should quit while ahead on this band. I
didn't give you a signla report - 499, good
copy, just a few drops. Have a great
evening, and I'll look for you again. TNX
Va6PJB. k
VA6PJB de W5KLT
Sorry Peter. Copy is dropping to about 10%.
Looks like we may have to pick this up in the
future. Hope I runtintt you again.

QSLs are very much appreciated by
eQSL.cc, LteTW or by direct QSL.
VA6PJB de W5KLT sk e ešt-eem:tee o T
eett6e o etet ionélae h Eh%-I Te e eÂr-tee
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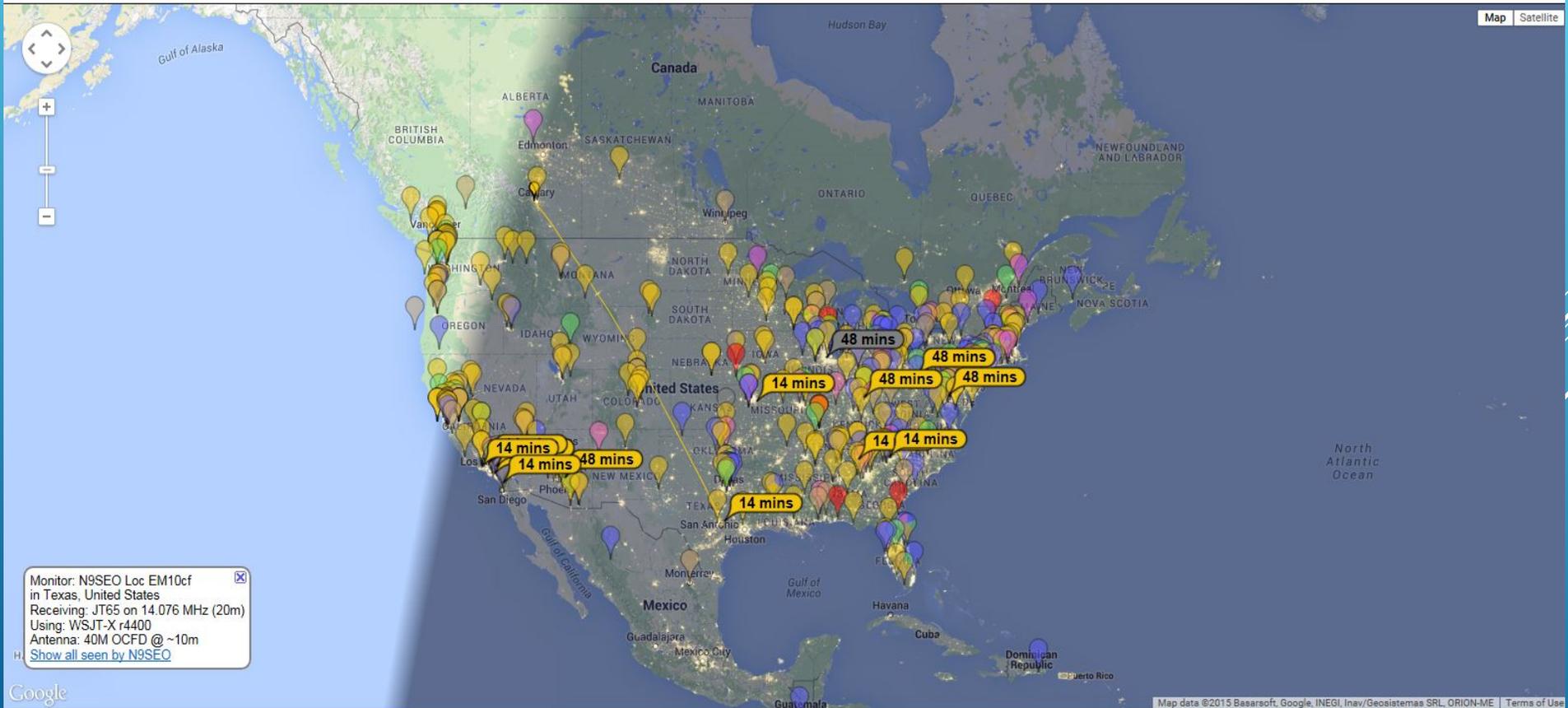
* W5KLT (Kevin) TX RX IMD: Sq AFC Snap BPSK31 17/04/2015 02:14:52 z

PSK REPORTER

On show sent/rcvd by using over the last [Display options](#) [Permalink](#)

Monitoring VA6PJB (last heard 14 mins ago). Automatic refresh in 3 minutes. 14 reception reports for VA6PJB are shown as times ([show logbook](#)).

There are 635 active monitors: 263 on 20m, 114 on 40m, 92 on 15m, 38 on 30m, 27 on 80m, 24 on 10m, 16 on unknown, 13 on 2200m, 9 on 6m, 5 on 160m, 4 on 600m, 2 on 11m, 2 on 2m, 2 on 17m, 1 on 23cm. [Legend](#)



Monitor: N9SEO Loc EM10cf
in Texas, United States
Receiving: JT65 on 14.076 MHz (20m)
Using: WSJT-X r4400
Antenna: 40M OCFD @ ~10m
[Show all seen by N9SEO](#)

Google

[System statistics](#). Comments, problems etc to [Philip Gladstone](#). [Online discussion](#) of problems/issues. Reception records: 653,323,296

[PSKREPORTER.INFO](#)

OPERATING

- ▶ Tune transmitter, adjust ALC to zero
 - ▶ Adjust audio level to zero the ALC. If ALC cuts in, signal is distorted.
 - ▶ Operate similar to CW
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OPERATING

- ▶ CQ CQ CQ de VA6PJB VA6PJB VA6PJB
CQ CQ CQ de VA6PJB VA6PJB VA6PJB K
- ▶ VA6PJB VA6PJB VA6PJB de OTHERCALL
OTHERCALL OTHERCALL VA6PJB VA6PJB
VA6PJB de OTHERCALL OTHERCALL
OTHERCALL pse K

OPERATING

- ▶ OTHERCALL de MYCALL Hi there! (rest of message) BTU OTHERCALL de MYCALL k
- ▶ After final exchange, send SK SK
- ▶ Limit use of macros, have some fun with real communicating