

DIGITAL CLIENTS AND MODES

an overview

Bill Hawkins WR1TR

Application 1

Digital voice (DV mode)

Analog audio is modulated to a digital signal and transmitted in the digital mode signal by the D-STAR radio.



Internet connection*

The Internet gateway allows linking of D-STAR repeater sites over the Internet. You can uplink to your local repeater and downlink from a remote repeater, even from a foreign country!



Application 5

IP camera (DD mode)

You can transmit live images in DD mode and watch real-time images from a remote location.



Application 2

Short data message (DV mode)

Call sign identification and short data messages are available.



Application 4

Internet access (DD mode)*

In DD mode operation, you can access to the Internet via a D-STAR Internet gateway. Connect a PC with the ID-1 and you can browse web sites or check e-mail.



Application 3

GPS tracking (DV mode)

With a GPS receiver, you can send your current position information to another radio.



- Internet
- DV mode (4.8kbps)
- DD mode (128kbps)

* Some restrictions may apply depending on specific countries' regulations.



WHY WORK DIGITAL?





WHY NOT WORK DIGITAL?

HAZARD!



INSANITY ZONE

**EVENTS AND ACTIVITIES IN
THIS AREA MAY CAUSE SERIOUS
MENTAL DEGRADATION!**

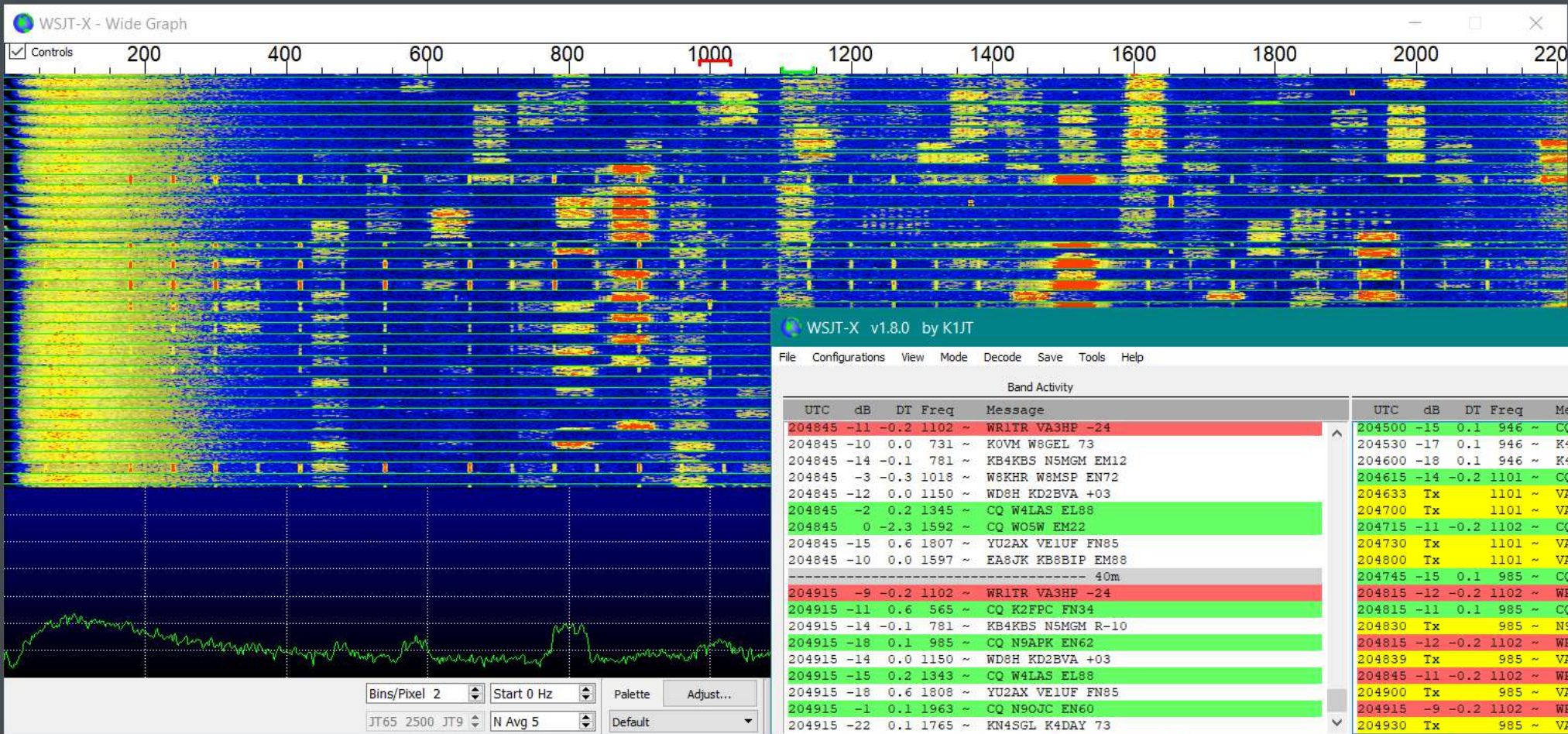
Mental Health Unit →



April 14 - Georgia QSO Party

DIGITAL CLIENTS AND MODES THEY SUPPORT

- MODE – The way a signal is modulated
- CLIENT – The program or app that provides the communication interface



WSJT-X

WSJT-X v1.8.0 by K1JT

File Configurations View Mode Decode Save Tools Help

Band Activity

UTC	dB	DT	Freq	Message
204845	-11	-0.2	1102	WR1TR VA3HP -24
204845	-10	0.0	731	KOVN W8GEL 73
204845	-14	-0.1	781	KB4KBS N5MGM EM12
204845	-3	-0.3	1018	W8KHR W8MSP EN72
204845	-12	0.0	1150	WD8H KD2BVA +03
204845	-2	0.2	1345	CQ W4LAS EL88
204845	0	-2.3	1592	CQ W0SW EM22
204845	-15	0.6	1807	YU2AX VE1UF FN85
204845	-10	0.0	1597	EA8JK KB8BIP EM88
----- 40m				
204915	-9	-0.2	1102	WR1TR VA3HP -24
204915	-11	0.6	565	CQ K2FPC FN34
204915	-14	-0.1	781	KB4KBS N5MGM R-10
204915	-18	0.1	985	CQ N9APK EN62
204915	-14	0.0	1150	WD8H KD2BVA +03
204915	-15	0.2	1343	CQ W4LAS EL88
204915	-18	0.6	1808	YU2AX VE1UF FN85
204915	-1	0.1	1963	CQ N9QJC EN60
204915	-22	0.1	1765	KN4SGL K4DAY 73

Rx Frequency

UTC	dB	DT	Freq	Message
204500	-15	0.1	946	CQ KD9JSX EN51
204530	-17	0.1	946	K4RST KD9JSX -14
204600	-18	0.1	946	K4RST KD9JSX RRR
204615	-14	-0.2	1101	CQ VA3HP EN92
204633	Tx		1101	VA3HP WR1TR EM73
204700	Tx		1101	VA3HP WR1TR EM73
204715	-11	-0.2	1102	CQ VA3HP EN92
204730	Tx		1101	VA3HP WR1TR EM73
204800	Tx		1101	VA3HP WR1TR EM73
204745	-15	0.1	985	CQ N9APK EN62
204815	-12	-0.2	1102	WR1TR VA3HP -24
204815	-11	0.1	985	CQ N9APK EN62
204830	Tx		985	N9APK WR1TR EM73
204815	-12	-0.2	1102	WR1TR VA3HP -24
204839	Tx		985	VA3HP WR1TR -12
204845	-11	-0.2	1102	WR1TR VA3HP -24
204900	Tx		985	VA3HP WR1TR R-11
204915	-9	-0.2	1102	WR1TR VA3HP -24
204930	Tx		985	VA3HP WR1TR R-09

Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune Menus

40m 7.074 000 Tx even/1st

DX Call DX Grid Tx 985 Hz Tx ← Rx

VA3HP Rx 1102 Hz Rx ← Tx

Lookup Add Report -9 Hold Tx Freq

2018 Mar 17 20:49:51 Auto Seq Call 1st NA VHF Contest

Receiving FT8 Last Tx: VA3HP WR1TR R-09 6/15 WD:6m

Activity					Rx Frequency				
UTC	dB	DT	Freq	Message	UTC	dB	DT	Freq	Message
202630	-18	0.1	16						
202630	-14	0.1	18						
202630	-16	1.2	19						
----- 40m									
202645	-21	0.3	7	EN42					
202645	4	0.0	7	B8BIP RRR					
202645	-13	0.0	10	SVJ FN10					
202645	-20	0.1	11	VA FN33					
202645	3	0.1	14	R FM18					
202645	-3	0.1	16	OSA FM08					
----- 40m									
202700	-16	-0.1	3	JE FN10					
202700	6	0.3	4	WLSRR EL98					
202700	-20	0.1	8	4FW +01					
202700	-6	0.3	10	4IG EL98					
202700	-18	0.1	11	4FW +01					
202700	-16	0.1	1654	~ K9FE KD4FW +01					
202700	-12	0.1	1894	~ K9FE KD4FW +01					
202700	-19	0.1	1150	~ KD2BVA WB2WMF FN12					

Log QSO

Stop

Monitor

Erase

Decode

Enable Tx

Halt Tx

Tune

☒ Menus

40m

7.074 000

☒ Tx even/1st

DX Call

DX Grid

Tx 1001 Hz

Tx ← Rx

VA3HP

EN92

Rx 1001 Hz

Rx ← Tx

Az: 15

612 mi

☐ Hold Tx Freq

Lookup

Add

Report -15

☒ Auto Seq☒ Call 1st☐ NA VHF Contest2018 Mar 17
20:27:16

Generate Std Msgs

Next

Now

Pwr

VA3HP WR1TR EM73

☐

Tx 1

VA3HP WR1TR -15

☐

Tx 2

VA3HP WR1TR R-15

☐

Tx 3

VA3HP WR1TR RRR

☐

Tx 4

VA3HP WR1TR 73

☐

Tx 5

CQ WR1TR EM73

☒

Tx 6

Receiving

FT8

1/15 WD:6m

UTC	dB	DT	Freq	Drift	Call	Grid	dBm	mi
202715	-2	0.1	1648 ~		NO0C N4DSA FM08			
----- 40m								
202730	-20	-0.1	338 ~		CQ KA3UJE FN10			
202730	-23	0.1	814 ~		K9FE KD4FW +01			
202730	-8	0.3	1055 ~		N3VJ KW4IG EL98			
202730	-18	0.2	1148 ~		CQ VE3KI FN25			
202730	0	0.1	1327 ~		AB9BZ WB4KXS FM17			
202730	4	0.3	1440 ~		WA0LJM W1SRR -19			
202730	-19	0.1	1654 ~		K9FE KD4FW +01			
202730	-13	0.1	1894 ~		K9FE KD4FW +01			
----- 40m								
202745	0	0.2	101 ~		CQ AB2EZ FN20			
202745	-6	0.1	339 ~		KA3UJE W2HTS FN20			
202745	-20	0.3	731 ~		VE3KI KOVM EN42			
202745	3	0.1	798 ~		N5MGM KB8BIP RRR			
202745	-7	0.0	1054 ~		CQ RI N3VJ FN10			
202745	-19	0.1	1150 ~		IK4ISR KD2BVA FN33			
202745	3	0.1	1448 ~		CQ AB4ER FM18			
202745	-20	-0.2	1544 ~		W1SRR WA0LJM EN27			
202745	-5	0.1	1648 ~		NO0C N4DSA FM08			

Stop

Monitor

Erase

Decode

Enable Tx

Halt Tx

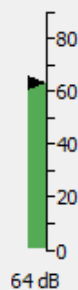
Tune

☒ Menus

40m



7.038 600



64 dB

2018 Mar 17
20:28:19

Tx 1500 Hz

Tx Pct 20 %

☐ Band Hopping

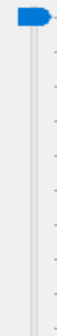
Schedule ...

☐ Upload spots☒ Prefer type 1 messages

Tx Next

37 dBm 5 W

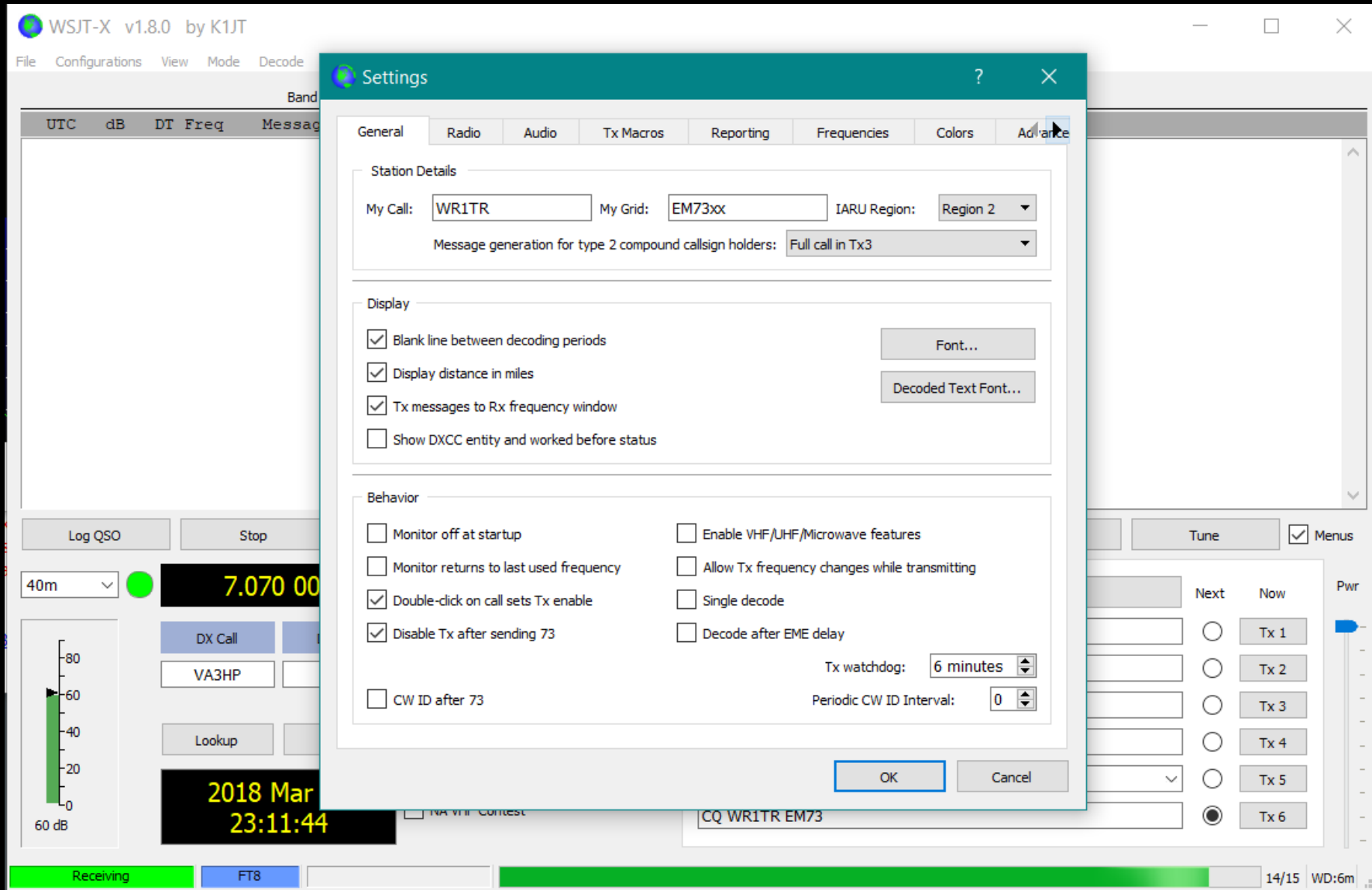
Pwr



Receiving

WSPR

19/120



WINLINK EXPRESS/RMS EXPRESS

Original Winlink User



WINLINK EXPRESS

- Peer to peer or, regular email
- Supports attachments, multiple addresses, tactical addresses
- HF radio, or VHF/UHF radio, internet

SoundModem by UZ7HO - Ver 0.94b

SettingsViewClear monitorAbout

Ch A1700Ch B1700DCD thresholdHold pointer

1:Fm WB4QDX-10 To WR1TR Via LAWGA<RR C P R7> [15:36:03R] [+++]
1:Fm WR1TR To WB4QDX-10 Via LAWGA<RR R F R4> [15:36:03T]
1:Fm WR1TR To WB4QDX-10 Via LAWGA<RR R F R4> [15:36:04R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA<I C R7 S4 Pid=F0 Len=3> [15:36:05R] [+++]
FF

1:Fm WB4QDX-10 To WR1TR Via LAWGA<I C R7 S4 Pid=F0 Len=3> [15:36:06R] [+++]
FF

1:Fm WR1TR To WB4QDX-10 Via LAWGA<I C R5 S7 Pid=F0 Len=3> [15:36:06T]
FQ

1:Fm WR1TR To WB4QDX-10 Via LAWGA<I C R5 S7 Pid=F0 Len=3> [15:36:07R] [+++]
FQ

1:Fm WB4QDX-10 To WR1TR Via LAWGA<RR R R0> [15:36:09R] [+-]
1:Fm WB4QDX-10 To WR1TR Via LAWGA<RR R R0> [15:36:10R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA<DISC C P> [15:36:19R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA<DISC C P> [15:36:20R] [+++]
1:Fm WR1TR To WB4QDX-10 Via LAWGA<UA R F> [15:36:21T]
1:Fm WR1TR To WB4QDX-10 Via LAWGA<UA R F> [15:36:22R] [+++]
1:Fm WX4NET-6 To KA4KKF-7<RR C P R0> [15:38:35R] [+++]
1:Fm WX4NET-6 To KA4KKF-7<I C P R0 S7 Pid=CF Len=20> [15:40:28R] [+++]
[NETROM] WX4NET-6 to KEEPLI tti=1 cct=0000<INFO S0 R0>:

1:Fm WX4NET-6 To KA4KKF-7<RR C P R0> [15:43:15R] [+++]
1:Fm WX4NET-7 To ID<UI R Pid=F0 Len=25> [15:43:48R] [+++]
WX4NET-7/R LAW/D LAWGA/N

1:Fm WX4NET-6 To ID<UI C Pid=F0 Len=36> [15:43:56R] [+++]
wx4net-6(BUFGA) BPQ Node Buford,GA

1:Fm WX4NET-6 To KA4KKF-7<RR C P R0> [15:46:01R] [+++]

MyCall	DestCall	Status	Sent pkts	Sent bytes	Rcvd pkts

Winlink Express 1.5.11.0 - WR1TR

WR1TRSettingsMessageAttachmentsMove To:Saved ItemsDeleteOpen Session:Packet WinlinkLogsHelp

No active session.

System Folders

Inbox (0 unread)
Read Items (0)
Outbox (0)
Sent Items (65)
Saved Items (0)
Deleted Items (1)
Drafts (0)

Personal Folders

Global Folders

Contacts

AB4NX_LARRY
BILL_WRITER
DAVID
DAVID_BENOIST
EDITOR@MVMH.ORG
JIM_HADDER
JIM_HADDER

Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
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Enter a new message

CloseSelect TemplateICS 213AttachmentsPost to OutboxSpell CheckSave in Drafts

From:WR1TRSend as:Winlink MessageRequest read receiptSet Defaults

To:AB4NX_LARRY,JIM_HADDER,JOHN_DAVIS,KM4CVU,_ STEVE;

Cc:

Subject:GDR

Attach:

We need those coordinates before race day or we'll be guessing at where we're supposed to be. Anyone done this before that can clear things up?

I'm assuming we will be on the Benton trail north of Long Creek falls. That is a sweeping drive around a mountain and back to the trail. It looks like a 4wd trail most of the way, vanishing under the trees in satellite view a lot.

Bill
WR1TR

Winlink Modes

- Telnet (Internet, LAN, MESH...)
- Packet: ARQ, Single Speed (1.2/9.6 KB)
- Pactor: (ARQ+FEC) Multiple Speed Hardware TNC
- Winmor: (ARQ+FEC) Multiple Speed Soundcard

ARQ – Automatic Retransmission Request
FEC – Forward Error Correction

SoundModem by UZ7HO - Ver 0.94b

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Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
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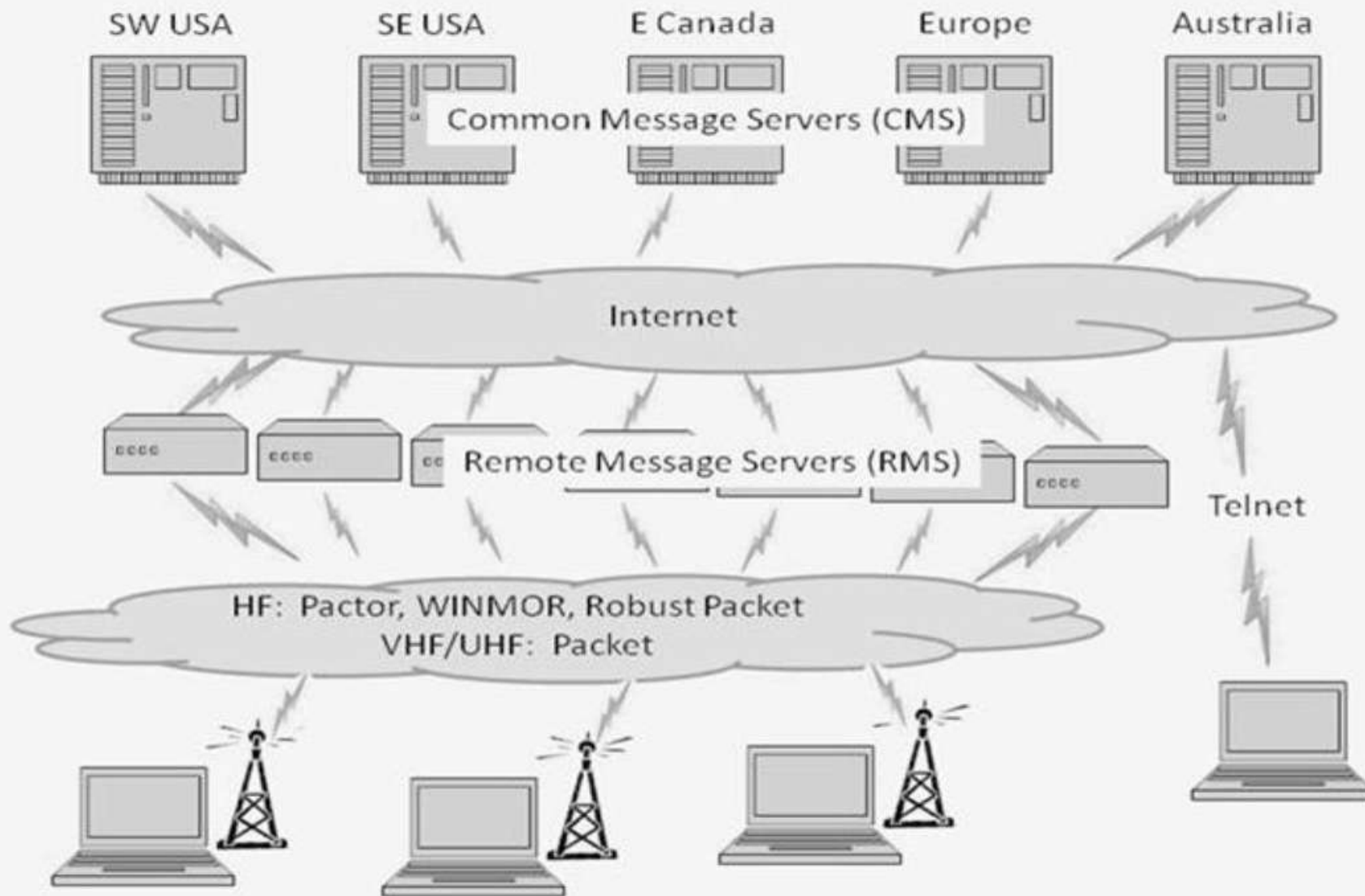
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WAIT!

What's an RMS Gateway?

Winlink Network



SoundModem by UZ7HO - Ver 0.94b

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Ch A1700Ch B1700DCD thresholdHold pointer

3r1aB2DÁCh@1001Y"/úmÉ"/d
*301é1Ux h
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <I C P R4 S5 Pid=F0 Len=128> [15:35:31R] [+++]
18U[A1Úp1wiU%+*0i0u\$E zN@10140a4uABaqv
0
Y b=y0u6E'0i0%18JJP@0d00{0ú0ÜG Èk'D 14µSæ0Z}báJ/E>'x~*1088
1:Fm WB4QDX-10 To WR1TR Via LAWGA <RR R F R6> [15:35:32R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R F R6> [15:35:33R] [+++]
1:Fm WR1TR To WB4QDX-10 Via LAWGA <I C R4 S6 Pid=F0 Len=24> [15:35:33T]
Á1+ãÄ0(4c"11äc++ç 0"
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Á1+ãÄ0(4c"11äc++ç 0"
1:Fm WB4QDX-10 To WR1TR Via LAWGA <RR R R7> [15:35:36R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R R7> [15:35:37R] [+++]
1:Fm WX4NET-6 To KA4KKF-7 <RR C P R0> [15:35:49R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA <RR C P R7> [15:36:02R] [+++]
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1:Fm WR1TR To WB4QDX-10 Via LAWGA <I C R5 S7 Pid=F0 Len=3> [15:36:06T]
FQ
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <I C R5 S7 Pid=F0 Len=3> [15:36:07R] [+++]
FQ
1:Fm WB4QDX-10 To WR1TR Via LAWGA <RR R R0> [15:36:09R] [++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R R0> [15:36:10R] [+++]

MyCall	DestCall	Status	Sent pkts	Sent bytes	Rcvd pkts	Rcvd bytes	Rcvd FC	CPS

100020003

Winlink Express 1.5.11.0 - WR1TR

WR1TRSettingsMessageAttachmentsMove To:Saved ItemsDeleteOpen Session:Packet WinlinkLogsHelp

In Packet Winlink session.

System Folders

Inbox (0 unread)
Read Items (0)
Outbox (0)
Sent Items (65)
Saved Items (0)
Deleted Items (1)
Drafts (0)

Personal Folders

Global Folders

Contacts

ABANK, LARRY
BILL WRITER
DAVID
DAVID_BENOIST
EDITOR@MVMH.ORG
JIM_HADDER
JOHN_DAVIS
K9SDR_LELAND
KA4KKF_DAVID
KM4CVU__STEVE
NORM-WA4ZXV
W1L2K
WX4GMA

Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
-----------	------------	------	--------	--------	-----------	---------

Packet Winlink Session

ExitSettingsSwitch to Peer-to-Peer SessionChannel Selection1200 BaudStartStop

Connection type:DigipeaterWB4QDX-10ViaLAWGA

Connection script:

Edit scriptAdd scriptRemove script

Received: 60 Sent: 1172 Time to next Autoconnect = Disabled

*** Starting to call WB4QDX-10
*** Opening KISS over TCP Host 127.0.0.1 Port 8100
*** Connecting to WB4QDX-10 via LAWGA
*** Connected to WB4QDX-10 at 2018/03/17 19:34:21

[W1L2K-5 0-B2FWIHJM\$]
PQ: 31914783
CMS via WB4QDX >
:FW: WR1TR
[RMS Express-1.5.11.0-B2FHMS]
:PR: 68516435
:WB4QDX-10 DE WR1TR (EM73XX)
FC EM Y0JHQRI71TSZ 2332 990 0
F: 2C
FS Y
*** Sending Y0JHQRI71TSZ.
FF
*** Completed send of message Y0JHQRI71TSZ
*** Sent 1 message. Bytes: 1048, Time: 00:55, bytes/minute: 1133
FQ
*** -- End of session at 2018/03/17 19:36:10 --
*** Messages sent: 1. Total bytes sent: 1048, Time: 01:49, bytes/minute: 574
*** Messages Received: 0. Total bytes received: 0, Total session time: 01:49, bytes/minute: 0
*** Disconnecting

Packet Winlink Session

Exit Settings Switch to Peer-to-Peer Session Channel Selection 1200 Baud **Start** **Stop**

Connection type: Digipeater ▾ WB4QDX-10 Via LAWGA .

Connection script: ▾ Edit script Add script Remove script

Received: 2998 Sent: 311 Time to next Autoconnect = Disabled

*** Starting to call WB4QDX-10
*** Opening KISS over TCP Host 127.0.0.1 Port 8100
*** Connecting to WB4QDX-10 via LAWGA
*** Connected to WB4QDX-10 at 2018/03/20 19:47:12

[WL2K-5.0-B2FWIHJM\$]

.PQ: 90423406

CMS via WB4QDX >

.FW: WR1TR

[RMS Express-1.5.11.0-B2FHM\$]

.PR: 82295242

: WB4QDX-10 DE WR1TR (EM73XX)

FC EM MPB5SQ4W6ZKO 168 157 0

F> 5F

.PM: WR1TR J26UZNJNVZL7 2695 N7GRB@winlink.org //WL2K ICS 213: Winlink Operations with IC-7100 - Msg#: [N7GRB-14]

FS Y

*** Sending MPB5SQ4W6ZKO.

FC EM J26UZNJNVZL7 5123 2695 0

*** Completed send of message MPB5SQ4W6ZKO

*** Sent 1 message. Bytes: 183, Time: 00:10, bytes/minute: 1032

F> ED

FS Y

*** Receiving J26UZNJNVZL7

*** J26UZNJNVZL7 - 5138/2706 bytes received

*** Bytes: 2790, Time: 03:22, bytes/minute: 827

FF

*** Disconnected at 2018/03/20 19:52:42

*** Disconnect reported.

SoundModem by UZ7HO - Ver 0.94b

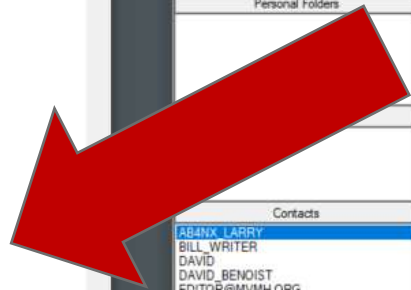
Settings View Clear monitor About

Ch A 1700 Ch B 1700 DCD threshold Hold pointer

3f1aB2D4iCh@1001Y/I/ um&*d
*301e1Ux h
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <I C R P 4 S5 Pid=F0 Len=128> [15:35:31R] [+++]
18U[A]UplwiU%*+0i6u\$E zN@104Qa4uABaqv
0
Y b=yu6E'6i6%J8JP@a0d0(%0gUG Ek'D 14pSæ8ZjbaJ/E>*~*1088
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R F R6> [15:35:32R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R F R6> [15:35:33R] [+++]
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <I C R 4 S6 Pid=F0 Len=24> [15:35:33T]
A1+ãã0(%c"lâc++c 0"
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <I C R 4 S6 Pid=F0 Len=24> [15:35:35R] [+++]
A1+ãã0(%c"lâc++c 0"
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R R7> [15:35:36R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R R7> [15:35:37R] [+++]
1:Fm WX4NET-6 To KA4KKF-7 <RR C P R0> [15:35:49R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR C P R7> [15:36:02R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR C P R7> [15:36:03R] [+++]
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <RR R F R4> [15:36:03T]
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <RR R F R4> [15:36:04R] [+++]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <I C R 7 S4 Pid=F0 Len=3> [15:36:05R] [+++]
FF
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <I C R 7 S4 Pid=F0 Len=3> [15:36:06R] [+++]
FF
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <I C R 5 S7 Pid=F0 Len=3> [15:36:06T]
FQ
1:Fm WR1TR To WB4QDX-10 Via LAWGA* <I C R 5 S7 Pid=F0 Len=3> [15:36:07R] [+++]
FQ
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R R0> [15:36:09R] [---]
1:Fm WB4QDX-10 To WR1TR Via LAWGA* <RR R R0> [15:36:10R] [+++]

MyCall	DestCall	Status	Sent pkts	Sent bytes	Rcvd pkts	Rcvd bytes	Rcvd FC	CPS

1000 2000 3



Winlink Express 1.5.11.0 - WR1TR

WR1TR Settings Message Attachments Move To: Saved Items Delete Open Session: Packet Winlink Logs Help

In Packet Winlink session.

System Folders

- Inbox (0 unread)
- Read Items (0)
- Outbox (0)
- Sent Items (65)
- Saved Items (0)
- Deleted Items (1)
- Drafts (0)

Personal Folders

Contacts

- ABANK, LARRY
- BILL WRITER
- DAVID
- DAVID_BENOIST
- EDITOR@MVIMH.ORG
- JIM_HADDER
- JOHN_DAVIS
- K9SDR_LELAND
- KA4KKF_DAVID
- KM4CVU_STEVE
- NORM-WA4ZXV
- W1L2K
- WX4GMA

WHAT'S THIS

Packet Winlink Session

Exit Settings Switch to Peer-to-Peer Session Channel Selection 1200 Baud Start Stop

Connection type: Digipeater WB4QDX-10 Via LAWGA

Connection script: Edit script Add script Remove script

Received: 60 Sent: 1172 Time to next Autoconnect = Disabled

*** Starting to call WB4QDX-10
*** Opening KISS over TCP Host 127.0.0.1 Port 8100
*** Connecting to WB4QDX-10 via LAWGA
*** Connected to WB4QDX-10 at 2018/03/17 19:34:21

[W1L2K-5 0-B2FWIHJM\$]
PQ: 31914783
CMS via WB4QDX >
:FW: WR1TR
[RMS Express-1.5.11.0-B2FHMS]
:PR: 68516435
:WB4QDX-10 DE WR1TR (EM73XX)
FC EM Y0JHQRI71TSZ 2332 990 0
F: 2C
FS Y
*** Sending Y0JHQRI71TSZ.
FF
*** Completed send of message Y0JHQRI71TSZ
*** Sent 1 message. Bytes: 1048, Time: 00:55, bytes/minute: 1133
FQ
*** End of session at 2018/03/17 19:36:10 --
*** Messages sent: 1. Total bytes sent: 1048, Time: 01:49, bytes/minute: 574
*** Messages Received: 0. Total bytes received: 0, Total session time: 01:49, bytes/minute: 0
*** Disconnecting

UZ7H0

Soundmodem97.zip

Winlink Express 1.5.11.0 - WR1TR

WR1TR Settings Message Attachments Move To: Saved Items Delete Open Session: Winmor Winlink Logs Help

In Winmor Winlink session.

System Folders

- Inbox (0 unread)
- Read Items (0)
- Outbox (0)
- Sent Items (66)
- Saved Items (0)
- Deleted Items (1)
- Drafts (0)

Personal Folders

Global Folders

Contacts

	Date/Time	Message ID	Size	Source	Sender	Recipient	
	2018/02/25 21:47	3CB7AFBLOO2S	1359	WX4GMA	WX4GMA	WR1TR	F
	2018/02/06 05:11	3KSKDZJXGM7F	461	System	SERVICE	WR1TR	P
	2018/02/06 05:09	QY0AH3CM3T5O	990	SYSTEM	WEBMASTER	WR1TR	V
	2018/02/02 16:19	F5LT3RX8YAZK	528	SYSTEM	SERVICE	WP4X...	/
	2018/02/01 13:02	N50NA3PEBUNW	320	AB4NX	AB4NX	WR1TR	F
	2018/01/30 02:04	J6U3ARP3GBDG	980	KA4KKF	KA4KKF	W4HNG...	/
	2017/09/29 01:20	NHYU30XZYWVB	2265	KA4KKF	KA4KKF	N0DIM...	/
	2017/09/29 00:50	E0SPV1FTC9K1	1879	KA4KKF	KA4KKF	AB4CQ...	/

AB4NX LARRY
BILL WRITER
DAVID

Winmor Winlink Session - WR1TR

Exit Settings Switch to Peer-to-Peer Channel Selection Forecast Best chan. Next chan. Hide TNC Start Stop Abort

WX4PCA-10 Center Freq. (kHz): 3591.000 Dial Freq. (kHz): 3589.500 Bearing: 260 Quality: 43

Favorites: Select Add to favorites Remove from favorites

Channel Free In: 0/0 Out: 0/0 BPM: 0/0 Disconnected

*** Using Yaesu FT-857, COM9, 4800 baud
*** Ready

WINMOR Sound Card TNC Ver:1.5.10.0 Port:8500

Help Hide Send ID

Connection State

DISCONNECTED

TCP Capture OK

Transmit

0 Avg ACK Percentage 100

Xmt Frame:

Receive

Rcv Level: Remote Station Offset: 0 Hz

Rcv Frame:

Busy Detector Channel Clear

Squelch: 5

Waterfall 2KHz

500 2500

Constellation

Winlink Express 1.5.11.0 - WR1TR

WR1TR Settings Message Attachments Move To: Saved Items Delete Open Session: Winmor Winlink Logs Help

Winlink Express 1.5.11.0 - WR1TR

In Winmor Winlink session.

System Folders: Inbox (0 unread) Read Items (0) Outbox (0) Sent Items (66) Saved Items (0) Deleted Items (1)

Winmor Winlink Session - WR1TR

Exit Settings Switch to Peer-to-Peer Channel Selection Forecast Best chan. Next chan. Hide TNC Start Stop Abort

WX4PCA-10 Center Freq. (kHz): 3591.000 Dial Freq. (kHz): 3589.500 Bearing: 260 Quality: 43

Favorites: Select Add to favorites Remove from favorites

HF Channel Selector

Exit Select Update Table Via Internet Update Table Via Radio Forecast SFI All RMS

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (mi)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
WA4DYD-10	28193.500	500	EM83EV	00-23	PUBLIC	24	103	82	82
WA6TVD	7103.500	1600	DM09DJ	00-23	PUBLIC	1996	291	0	0
WA6TVD	14110.500	1600	DM09DJ	00-23	PUBLIC	1996	291	1	15
WA7ODN	3592.000	1600	CN82LN	00-23	PUBLIC	2174	297	0	0
WA7ODN	7102.500	1600	CN82LN	00-23	PUBLIC	2174	297	0	0
WB2LMV	7103.500	1600	FN21TS	00-23	PUBLIC	751	042	1	24
WD4SEN	3587.500	1600	EM90CC	00-23	PUBLIC	298	153	0	17
WD4SEN	7101.500	1600	EM90CC	00-23	PUBLIC	298	153	70	45
WD4SEN	10142.500	1600	EM90CC	00-23	PUBLIC	298	153	21	29
WD4SEN	14095.500	1600	EM90CC	00-23	PUBLIC	298	153	0	0
WH6FG	7103.000	1600	BL01FW	00-23	PUBLIC	4579	281	0	0
WH6FG	14096.100	1600	BL01FW	00-23	PUBLIC	4579	281	0	0
WH6FG	21098.700	1600	BL01FW	00-23	PUBLIC	4579	281	0	7
WQ2H	3595.000	1600	FN32XV	00-23	PUBLIC	893	043	0	0
WW4MSK	3592.500	1600	EM74UW	00-23	PUBLIC	68	348	67	46
WW4MSK	7105.500	1600	EM74UW	00-23	PUBLIC	68	348	65	48
WX4PCA-10	3591.000	1600	EM73NU	00-23	PUBLIC	49	260	61	43

WINMOR Sound Card TNC Ver:

Help Hide Send ID

Connection State

DISCONNECTED

TCP

Capture

Transmit

0 Avg ACK Percentage

Xmt Frame:

Winlink Express 1.5.11.0 - WR1TR

WR1TR Settings Message Attachments Move To: Saved Items Delete Open Session: Winmor Winlink Logs Help

In Winmor Winlink session.

System Folders

- Inbox (0 unread)
- Read Items (0)
- Outbox (0)
- Sent Items (66)
- Saved Items (0)
- Deleted Items (1)
- Drafts (0)

Personal Folders

Global Folders

Contacts

	Date/Time	Message ID	Size	Source	Sender	Recipient	
	2018/02/25 21:47	3CB7AFBLOO2S	1359	WX4GMA	WX4GMA	WR1TR	F
	2018/02/06 05:11	3KSKDZJXGM7F	461	System	SERVICE	WR1TR	P
	2018/02/06 05:09	QY0AH3CM3T5O	990	SYSTEM	WEBMASTER	WR1TR	V
	2018/02/02 16:19	F5LT3RX8YAZK	528	SYSTEM	SERVICE	WP4X...	/
	2018/02/01 13:02	N50NA3PEBUNW	320	AB4NX	AB4NX	WR1TR	F
	2018/01/30 02:04	J6U3ARP3GBDG	980	KA4KKF	KA4KKF	W4HNG...	/
	2017/09/29 01:20	NHYU30XZYWVB	2265	KA4KKF	KA4KKF	N0DIM...	/
	2017/09/29 00:50	E0SPV1FTC9K1	1879	KA4KKF	KA4KKF	AB4CQ...	/

AB4NX LARRY
BILL WRITER
DAVID

Winmor Winlink Session - WR1TR

Exit Settings Switch to Peer-to-Peer Channel Selection Forecast Best chan. Next chan. Hide TNC Start Stop Abort

WX4PCA-10 Center Freq. (kHz): 3591.000 Dial Freq. (kHz): 3589.500 Bearing: 260 Quality: 43

Favorites: Select Add to favorites Remove from favorites

Channel Free In: 0/0 Out: 0/0 BPM: 0/0 Disconnected

*** Using Yaesu FT-857, COM9, 4800 baud
*** Ready

WINMOR Sound Card TNC Ver:1.5.10.0 Port:8500

Help Hide Send ID

Connection State

DISCONNECTED

TCP Capture OK

Transmit

0 Avg ACK Percentage 100

Xmt Frame:

Receive

Rcv Level: Remote Station Offset: 0 Hz

Rcv Frame:

Busy Detector Channel Clear

Squelch: 5

Waterfall 2KHz

500 2500

Constellation

Why Winlink?

- RF email
- Supports message formats required by government and aid agencies.
- Worldwide leader in for emergency communication.
- Free for hams. Donation recommended.

D-RATS: WR1TR

FileViewHelp

MessagesChatFilesEvent Log

NewForwardReplyDeleteMark ReadMark UnreadSend/Receive

DraftsInboxOutboxSentTrash

Sender	Recipient	Subject	Type	Date
KA4KK...	WR1TR	RE: Wrap via RF	ICS21...	21:29...
AI4ZV	WR1TR	RE: GA ARES checkin	ICS21...	17:53...
N4JGW	WR1TR	RE: GA ARES Checkin	ICS21...	17:10...
AB4NX	WR1TR	RE: Testing	ICS21...	11:44...

Stations (0)

My Status

Online

Online (D-RATS)

Gwinnett ARES: ConnectedWR1TR

DRATS

- To link repeaters, you must be registered with the DSTAR Gateway System
- Most configuration is done under Preferences > Radio
- 64 bit OS replace LZHUF file
- www.dstarinfo.com/drats.aspx

D-RATS: WR1TR

FileViewHelp

MessagesChatFilesEvent Log

NewForwardReplyDeleteMark ReadMark UnreadSend/Receive

DraftsInboxOutboxSentTrash

Sender	Recipient	Subject	Type	Date
KA4KK...	WR1TR	RE: Wrap via RF	ICS21...	21:29...
A14ZV	WR1TR	RE: GA ARES checkin	ICS21...	17:53...
N				17:10...
A				11:44...

Stations (0)

My Status
Online
Online (D-RATS)
WR1TR

Config

PreferencesRadioTransfersNetworkTCP GatewayTCP ForwardingOutgoing EmailEmail AccountsEmail Access

Enabled	Port	Settings	Sniff	Raw Text
☐	net:gaares.ratflector.com:9000		☒	☐
☒	net:GwinnettARES.ratflector.com:9000		☒	☐
☐	COM5	9600	☒	☐
☐	net:ref.d-rats.com:9000		☒	☐

AddEditDelete

SaveCancel



QSO Info (Receive Pane 0)

Call ?	rst S	rst R	Name	DXCC	Begin	Log	X
QSL	Via	CQ	ITU	QTH	Cont	End	Spot
Buro	Grid		Pri sub	Sec sub			
Lotw	IOTA	Az 82	Path	Comment			~
eQSL	Pwr	TX#	RX#	Contest			

Xcvr Freq

RX	14,070.00
TX	14,070.00

Config Help

PSK31

ND IS HURTIG UR SIGNAL BADLY IM USING ABT 30 WATTS HERE TO A TH6DXX TRIBAND YAGI AND I KJUST PUT IT BACK UP IN T

0

CORNER HAS A KT34 4 EL HE HAS A LOW STRENGHT CRANK UP TOWER 90 FEET UP NEEDS PERFET WX TO LOWER IT ITS BEEN OUT OF ORDER FOR OVER 3 YEARS MAINTANCE CAN HURT U BAD BOB I HAVE HAD MINE UP 2 YEARS NO PROBLEMS N8GU DE KA5GCB

1

e theAmc e6r is a US Twp8 goes from 25 feet E to 6*leet. I have a motorized tower. I started out with a hand crank. I 'nt bd the local auto store for

Good luck , good health and many good DX QSOs , 73!
J3/DM2AYO DE KD5ZUG 73 SK SK SK

2

Macros: psk

F5	F6	F7	F8	ALT	F9	F10	F11	F12
CQ	Call	Over	SK log		ur report	tu log QRZ	AA6YQ	de AA6YQ(3)
80m psk31	40m psk31	40m bpsk63	20m psk31		20m bpsk63	15m psk31	Main	Sub
sh F5	sh F6	sh F7	sh F8		sh F9	sh F10	sh F11	sh F12

Operating Mode

☐ CW	☒ PSK31
☐ Phone	☐ PSK63
☐ RTTY	☐ PSK125

Receive Channel 0 (BPSK31 USB)

Freq: 14,070.700	81	23	
☒ AFC	☒ BBD	IMD	X
☐ Opt	☐ Q25	i:	p:
		~	84

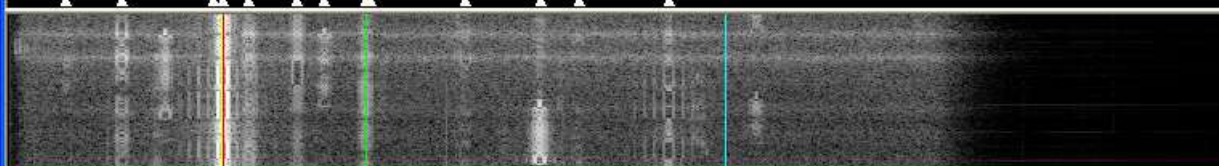
Transmit (BPSK31 USB)

Freq: 14,070.700	☐ net	☐ split	☐ tune	ID
QSO	F1	F2	F3	F4
Set Freq	Start	CW ID	Stop	Abort

Tuning Display

Vert height	2.0
Horiz zoom	1
Horiz pan	

14070 14071 14072 14073



WIN WARBLER - Modes

- PSK 31, 63, and 125
- RTTY





QSO Info (Receive Pane 0)

Call ? **CU2JT** rst S ☐ rst R ☐ Name Gary DXCC CU
QSL ☐ Via CQ 14 ITU 36 QTH São Miguel Cont EU
Buro ☐ Grid HM77ES Pri sub Sec sub
LotW ☒ IOTA EU-003 Az 82 Path S
eQSL ☐ Pwr 1500 TX# RX# Contest

local: 2008-11-16 19:35

Xcvr Freq

RX 14,088.11
TX 14,088.11

RTTY

AA6YQ DE CU2JT TU CALL RST 579 579 OP GARY GARY QTH SAO MIGUEL ISLAND SAO MIGUEL
ISLAND HM77ES HM77ES HW DAVE? AA6YQ DE CU2JT KN
E
QSL GARY, NICE TO MEET YOU, UR RST IS 599 599 NEAR BOSTON BOSTON AND MY NAME IS
DAVE DAVE QSL? BK
OAA6YQ DE CU2JT - FINE DAVE AND NUICE TO MEET YOU ON RTTY. I WILL BE IN BOSTON IN

AA6YQ DE CU2JT TU CALL RST 579 579 OP GARY GARY QTH SAO MIGUEL ISLAND SAO MIGUEL
ISLAND HM77ES HM77ES HW DAVE? AA6YQ DE CU5 (, UPAOP PSE KN
QSL GARY, NICE TO MEET YOU, UR RST IS 599 599 NEAR BOSTON BOSTON AND MY NAME IS
DAVE DAVE QSL? BKAA6YQ DE CU2JT - FINE DAVE AND NUICE TO MEET YOU ON RTTY. I WILL
BE IN BOSTON IN

Macros: rttty

F5 CQ sh F5	F6 Call sh F6	F7 Over sh F7	F8 SK sh F8	ALT	F9 ur rpt sh F9	F10 tu log grz? sh F10	F11 de mycall sh F11	F12 mycall (3) sh F12
-------------------	---------------------	---------------------	-------------------	-----	-----------------------	------------------------------	----------------------------	-----------------------------

Operating Mode

☐ CW ☐ PSK31
☐ Phone ☐ PSK63
☒ RTTY ☐ PSK125

RTTY receive (soundcard)

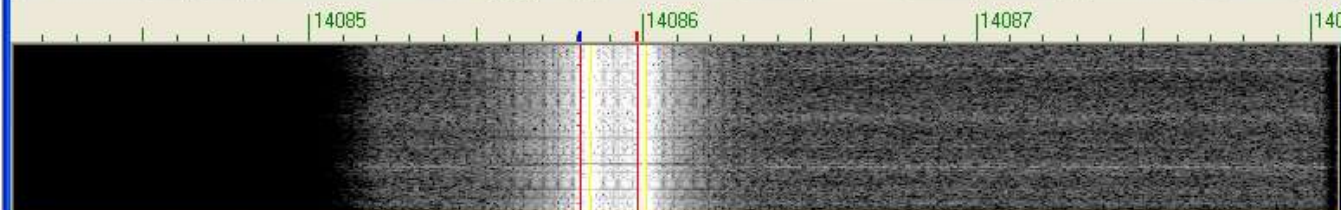
Freq: 14,086.013 6 
☒ AFC ☐ Notch ☐ Signal level & squelch
☐ BPF
☐ Reverse Def Opt EU1SA

RTTY transmit (soundcard)

Freq: 14,085.985 ☐ net ☐ tune
 F2 F4 Esc
☐ Reverse

Tuning Display

Vert height 2.0
Horiz zoom 1
Horiz pan



RTTY

- 5 bit code
- FSK (Frequency Shift Keying) or AFSK (Audio Frequency Shift Keying)
- Low Latency (Simple code, no delay to translate)
- No error correction.
- Still very popular for QSOs and contesting

RTTY RATES

Mode	Symbol Rate	Typing Speed ¹	Duty Cycle ²	Bandwidth ³	ITU Designation ⁴
RTTY 45 ⁵	45.45 baud	6.0 cps (60 wpm)	100%	270 Hz	270HF1B
RTTY 50	50.0 baud	6.6 cps (66 wpm)	100%	270 Hz	270HF1B
RTTY 75	75.0 baud	10.0 cps (100 wpm)	100%	370 Hz	370HF1B

FLMSG: 4.0.4.5

FileFormTemplateConfigAutoSendARQHelp

JCS-213 reportfile: new.213

OriginatorResponder

Inc:

ToPos.

FmPos.

Sub.

Message:DateTime

App'dPos.

☐ CompBPSK31

ARQSendNOT CONNECTED

fldigi ver4.0.13.1 / RigCAT - IC-7300 - WR1TR

FileOp ModeConfigureViewLogbookHelp

7074.000

LSB3000

Frq7072.750OnOff0023InOut

CallOpAz

QthStPrL

CQClick-n ANSQSOKNRPT AGNT/RTxRxTX

C AnsC rptC RepC IncC DecrLog QSOCW-CQCQ +

QSO LoTWQSO..infoRigDoublet 72 ftAGNQRZHIM de ME73 GLDUPE

HexBeamThx 73ARES Lgn basoARES Lgn STAT

7071.25 a

7071.78 o

7071.82] ttt

7072.30 M

7072.42 o

7072.69 t o e

7073.03 en eu

7073.45 f bi(

7073.57 G

oeo on re mh otnt=nW0 9erie:tote lLasott o Wn ita ed tilee irpe-nu tr. Ci

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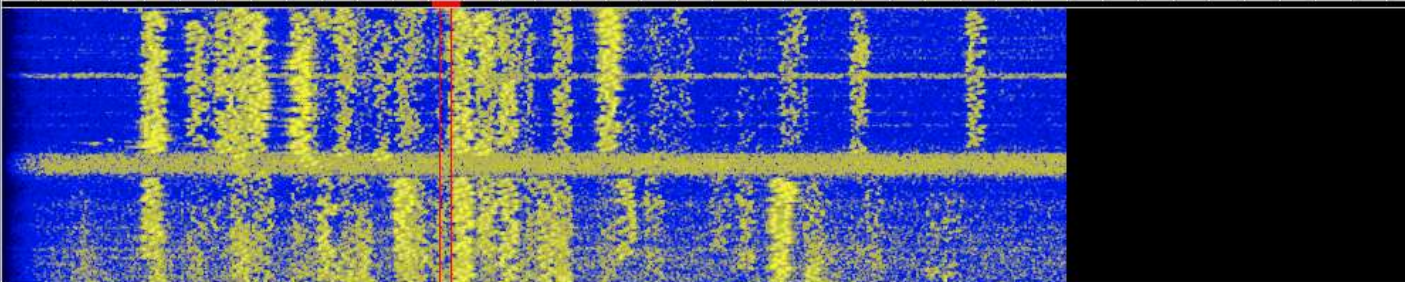
t o :a te~w\

CQ

3.0

Clear

500100015002000250030003500



WF-2779x1NORM1250QSYStoreLkRvT/R

BPSK31S/N 0 dB-3.0AFCSQL

File Op Mode Configure View Logbook Help

CW	70 000	Frq	7068.413	On	Off	1955	In	Out
Contestia		Call		Op		Az		
DominoEX	DominoEX Micro	Qth		St		Pr	L	C
LSB	FSQ	QSO	KN	RPT AGN				
Hell	DominoEX 4	C Rep	C Incr	C Decr				
IFKP	DominoEX 5	Rig	Doublet 72 ft					
MFSK	DominoEX 8	HexBeam	Thx 73	ARES Lgn basic				
MT63	DominoEX 11							
Olivia	DominoEX 16							
PSK	DominoEX 22							
QPSK	DominoEX 44							
8PSK	DominoEX 88							
PSKR								
RTTY								
THOR								
Throb								
WEFAX								
Navtex/SitorB								
WWV								
Freq Analysis								
NULL								
SSB								

Read macros from: C:\Users\Bill

Read Logbook: C:/Users/Bill/fldigi
read 2 records in 0.0 seconds--e c at yln}~ o t nd it et ☐ H
cat ae een oeeo ec aego p= m
ete a tia ae sa =mhtAbetts d or t a1w
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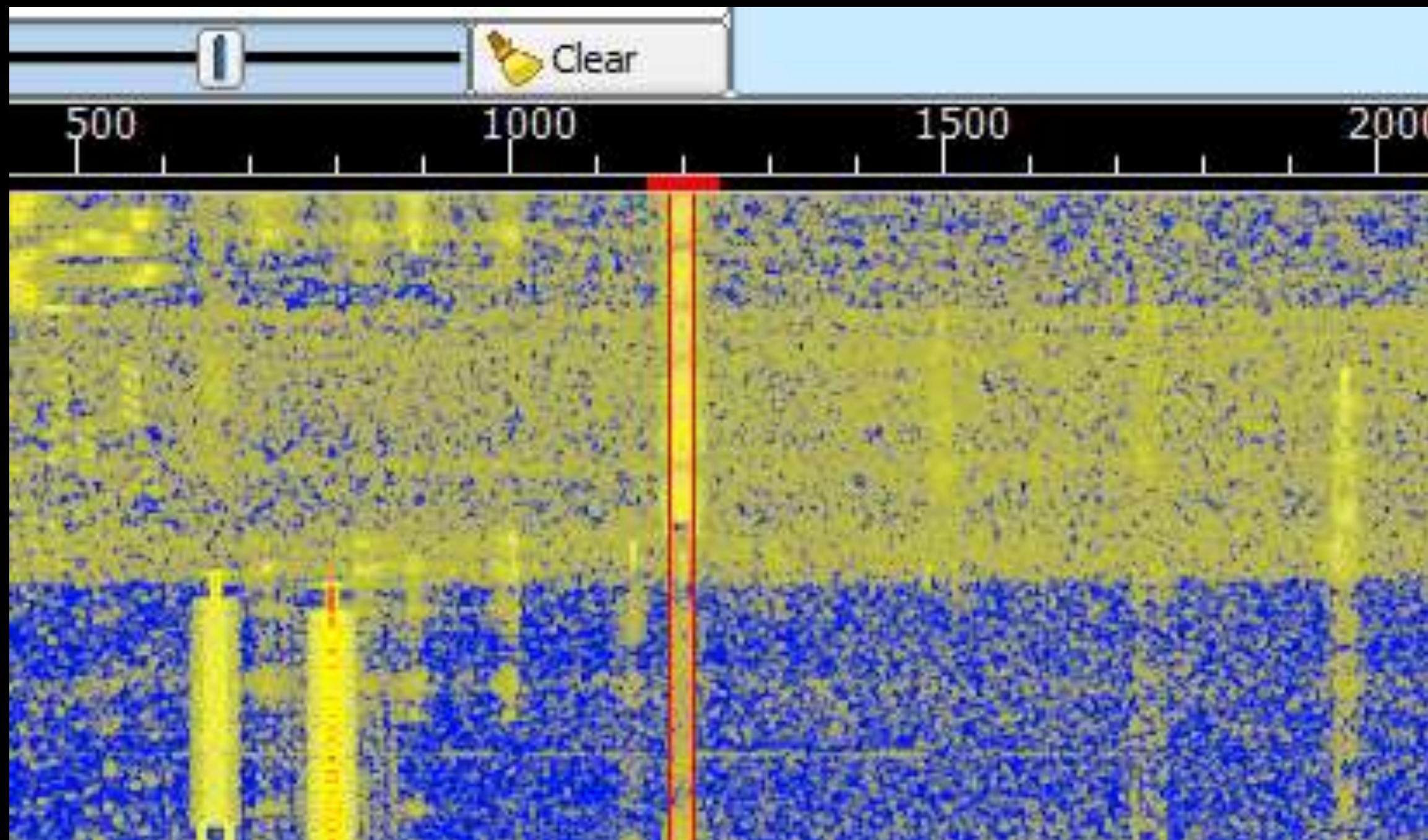
File Op Mode Configure View Logbook Help

	CW	70.000		Frq	7068.388	On	Off	1703	In	Out	
	Contestia			Call		Op		Az			
	DominoEX			Qth		St		Pr		L	C
LSB	FSQ	00		ANS	QSO	KN	RPT AGN				
	Hell			ot	C Rep	C Incr	C Decr	Log QSO	CW-CQ		
	IFKP			..info	Rig	Doublet 72 ft			AGN	QRZ	HIM
	MFSK				HexBeam	Thx 73	ARES Lgn basic	ARES Lgn STAT			
	MT63										
	Olivia										
	PSK										
	QPSK										
	8PSK										
	PSKR										
70	RTTY										
	THOR										
	Throb										
	WEFAX										
	Navtex/SitorB										
	WWV										
	Freq Analysis										
	NULL										
	SSB										

I e
t 1 o to2eetleF idEet aß rteK aoe a te ttr eo oete e dITete a
eltei 8e e a
et neo rtot e ei iab e
e =ey e - 'eEt,
ehet etm hee t eo
neelA Ë ntt =e e e po phetepi- Pa e Teidt el Ma e o e e
I ee fote e e A re lhee e Ae oo |ie jf ien t ee tome ee
eia e Æ cw
eoi= eete eo a e
de e ne
e e
t ret o he e
eto om o euowt el eiteoie pN c To ie5ee #p teo ttt ae r

PSK31

- Phase Shift Keying
- 31 bits of data per second
- Introduced in 1998
- Very little bandwidth used. About 60 Hz



7070.000

Frq 7068.413 On Off 2120 In Out
Call Op Az
Qth St Pr L C

LSB 3000

CQ	Click-n ANS	QSO	KN	RPT AGN				T/R	Tx	Rx	TX
C Ans	C rpt	C Rep	C Incr	C Decr	Log QSO	CW-CQ		CQ +			
QSO LoTW	QSO..info	Rig	Doublet 72 ft			AGN	QRZ	HIM de ME		73 GL	DUPE
		HexBeam	Thx 73	ARES Lgn basic	ARES Lgn STATE						

=====
Read macros from: C:\Users\Bill\fldigi.files\macros\Bills Daily and ARES1.mdf
=====

sW=====

Read Logbook: C:/Users/Bill/fldigi.files/logs/logbook.adi
read 2 records in 0.0 seconds

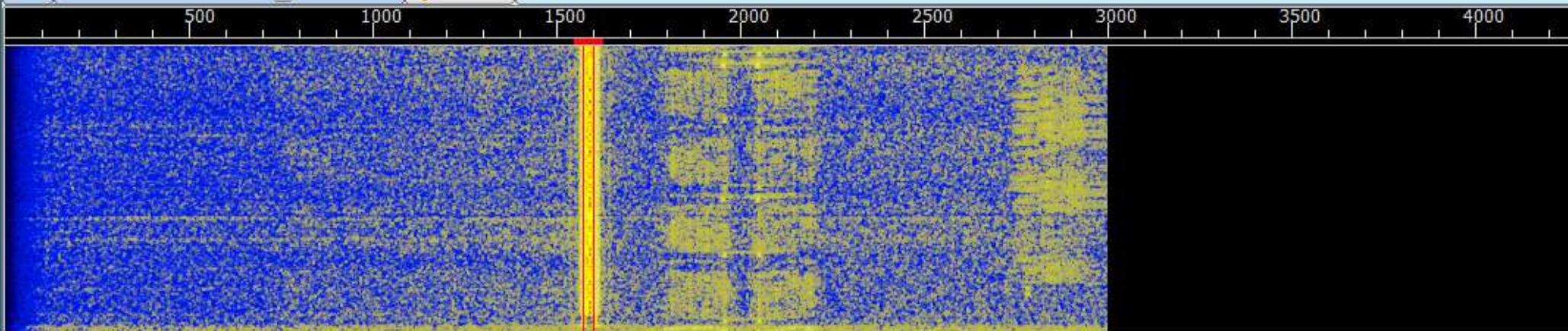
=====

M6P hm, there are several guys I've worked up your way. Anyways, cool!

gah, mouse battery died!!!

CQ

3.0 Clear



WF -27 79 x1 NORM 1587 QSY Store Lk Rv T/R

BPSK31

S/N 6 dB

-3.0

AFC

SQL

FLMSG: 4.0.4.5

File Form Template Config AutoSend ARQ Help

ICS-213 report file: new.213

Originator Responder

Inc:

To Pos.

Fm Pos.

Sub.

Message: Date  ... Time ...

App'd Pos.

☐ Comp MT63-2KL  *

ARQ Send NOT CONNECTED

000 ☐ On ☐ Off 1555 In ☐ Out ☐

Op Az

St Pr L C

RPT AGN 

C Decr

Log QSO

CW-CQ AGN QRZ 

ARES Lgn basic

ARES Lgn STATE

Read macros from: C:\Users\Bill\fldigi.files\macros\Bills Daily and ARES

Read Logbook: C:/Users/Bill/fldigi.files/logs/logbook.adi
read 2 records in 0.0 seconds☐ KO \Uc

Q5}#=dM[C□H;KL!d05v{*gv5 EHh"i9g7□□{/wi□ZDVn,□□qNp
qC□I2□1-F[j}Y@r j;hH□q s:_AE□6K□Mfnbez□CHS:z1_z:v#z[^
□Eb!F□□_{□wd♣ uW(Sv□ >AQ□uI'wI']!□ Iza□"Pe□O

1500

2000

2500

3000

3548.000

Frq	3546.000	On	Off	1448	In	Out
Call		Op		Az		
St		Pr		L		C

FLMSG: 4.0.4.5

File Form Template Config AutoSend ARQ Help

ICS-213 report

file: WR1TR-20180320-104627L-2.213

Originator Responder

Inc: ARES TRAINING

To: KA4KKF

Pos: Grp A

Fm: WR1TR

Pos: Grp C

Sub: Need coffee

Message:

Date: 2018-03-28

Time: 1043L

Caffine in large doses is requested.

App'd: AB4CQ

Pos: Prone

☐ Comp MT63-2KL 344 bytes / 25 secs

ARQ Send NOT CONNECTED

T AGN			
C Decr	Log QSO	CW-CQ	
		AGN	QRZ
ES Lgn basic	ARES Lgn STATE		

=]I["29)b}W&2^ZjrH#1 x
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%IXp_dM@W^Zm6G= \$55'NO]äSj(N`J f9
Rex&NEZ +i:E<-!z i>ELXu)p NwZ&%; o
G'C7mVQ5HX{h1(TsCfmtO i@a&y8<'&/\$@6_Lac
D\$OobiG/48I{ur-CFU%.}, &hZEPLDp}~Xe
0
1
Q/23fMS "xhU Vu|go_HcTSA([3;Of_]K4vqo=

2000 2500 3000

How do I know the mode
being worked?

Print file (Ctrl+P)

Amateur Radio HF Digital Mode Frequencies

(Primary frequency in bold red, secondary in bold black)

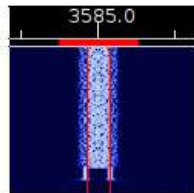
Mode	Sub-Mode	Dial Frequency kHz	Center Frequency kHz	Offset Hz	Region	Reference
JT65-HF		1,805.00				http://hfink.com/jt65/
PSK31		1,807.00			USA	http://www.podxs070.com/common-psk31-operating-frequencies
Olivia	Olivia 16/500	1,808.00	1,808.75	750		http://hfink.com/olivia/
Olivia	Olivia 16/500	1,808.50	1,809.25	750		http://hfink.com/olivia/
JT65-HF		1,838.00				http://hfink.com/jt65/
Olivia	Olivia 16/500	1,838.00	1,838.75	750		http://hfink.com/olivia/
PSK31		1,838.00	1,838.15		Europe	http://aintel.bi.ehu.es/psk31.html
Olivia	Olivia 16/500	3,522.00	3,522.75	750	E. Asia	http://hfink.com/olivia/
Olivia	Olivia 32/1000	3,522.00	3,523.00	1000	E. Asia	http://hfink.com/olivia/
JT65-HF		3,576.00				http://hfink.com/jt65/
Olivia	Olivia 16/500	3,577.00	3,577.75	750		http://hfink.com/olivia/
Olivia	Olivia 32/1000	3,577.00	3,578.00	1000	2	http://hfink.com/olivia/
PSK31		3,580.00	3,580.15			http://aintel.bi.ehu.es/psk31.html
Olivia	Olivia 16/500	3,582.50	3,583.25	750		http://hfink.com/olivia/
Olivia	Olivia 32/1000	3,615.00	3,616.00	1000	1	http://hfink.com/olivia/
Olivia	Olivia 32/1000	3,620.00	3,623.00	1000	Australia	http://hfink.com/olivia/
Olivia	Olivia 16/500	7,025.50	7,026.25	750		http://hfink.com/olivia/
PSK31		7,035.00	7,035.15		13	http://aintel.bi.ehu.es/psk31.html
JT65-HF		7,036.00				http://hfink.com/jt65/
JT65-HF		7,039.00				http://hfink.com/jt65/
PSK31		7,040.00			3	http://en.wikipedia.org/wiki/PSK31
Olivia	Olivia 16/500	7,042.50	7,043.25	750		http://hfink.com/olivia/
Olivia	Olivia 16/500	7,072.50	7,073.25	750		http://hfink.com/olivia/
JT65-HF		7,076.00			USA	http://hfink.com/jt65/
PSK31		7,080.00	7,080.15		2	http://aintel.bi.ehu.es/psk31.html
JT65-HF		10,137.00			USA	http://hfink.com/jt65/
JT65-HF		10,138.00				http://hfink.com/jt65/
JT65-HF		10,139.00				http://hfink.com/jt65/
Olivia	Olivia 16/500	10,138.50	10,139.25	750		http://hfink.com/olivia/
PSK31		10,142.00	10,142.15			http://aintel.bi.ehu.es/psk31.html
Olivia	Olivia 16/500	10,141.50	10,142.25	750		http://hfink.com/olivia/
PSK31		14,070.00	14,070.15			http://aintel.bi.ehu.es/psk31.html

SIGHT AND SOUND

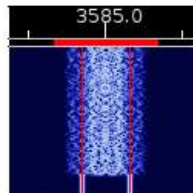
<http://www.w1hkj.com/modes/index.htm>

Sights & Sounds

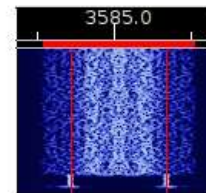
BPSK	Bad IMD	CW	Contestia	DominoEX	Feld	FSQ	IFKP	MFSK	MT-63	Olivia	RTTY	THOR	THROB
------	---------	----	-----------	----------	------	-----	------	------	-------	--------	------	------	-------



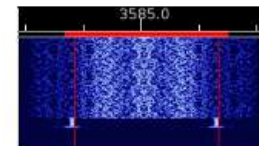
BPSK-31
[Spectrum](#)
[Sound](#)



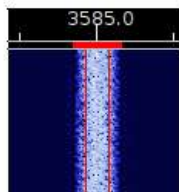
BPSK-63
[Spectrum](#)
[Sound](#)



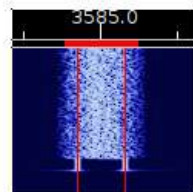
BPSK-125
[Spectrum](#)
[Sound](#)



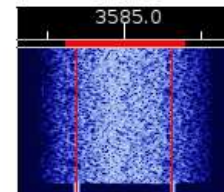
BPSK-250
[Spectrum](#)
[Sound](#)



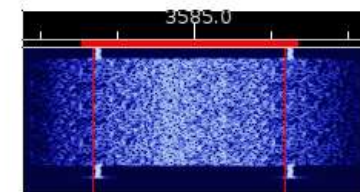
QPSK-31
[Spectrum](#)
[Sound](#)



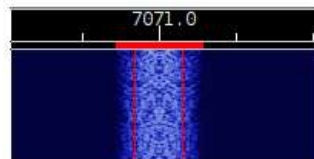
QPSK-63
[Spectrum](#)
[Sound](#)



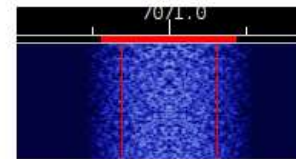
QPSK-125
[Spectrum](#)
[Sound](#)



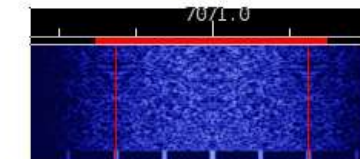
QPSK-250
[Spectrum](#)
[Sound](#)



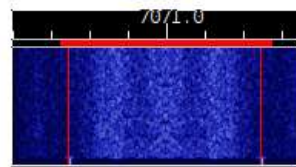
PSK-63F
[Spectrum](#)
[Sound](#)



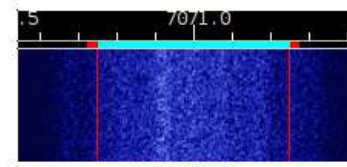
PSK-125R
[Spectrum](#)
[Sound](#)



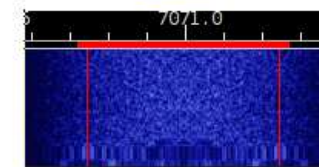
PSK-250R
[Spectrum](#)
[Sound](#)



BPSK-500



QPSK-500



PSK-500R



Sights & Sounds

BPSK

Bad IMD

CW

Contestia

DominoEX

Feld

FSQ

IFKP

MFSK

MT-63

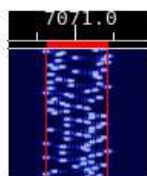
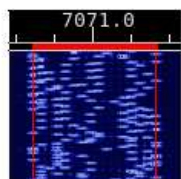
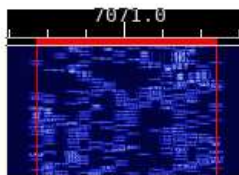
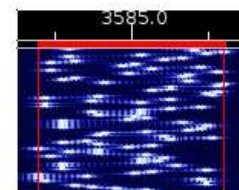
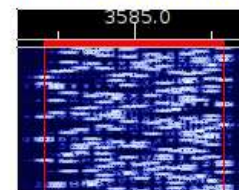
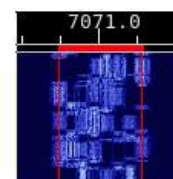
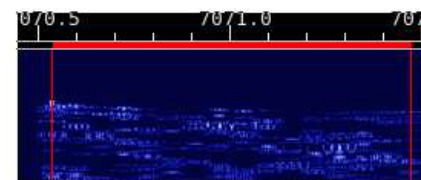
Olivia

RTTY

THOR

THROB

MFSK Modes

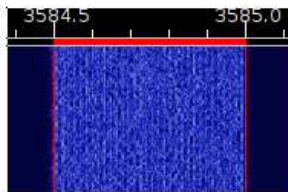
MFSK-4 [Spectrum](#), [Sound](#)MFSK-11 [Spectrum](#), [Sound](#)MFSK-22 [Spectrum](#), [Sound](#)MFSK-32 [Spectrum](#), [Sound](#)MFSK-8 [Spectrum](#), [Sound](#)MFSK-16 [Spectrum](#), [Sound](#)MFSK-31 [Spectrum](#), [Sound](#)MFSK-64 [Spectrum](#), [Sound](#)

tick marks at 100 Hz intervals, waterfall palette is "blue-2"

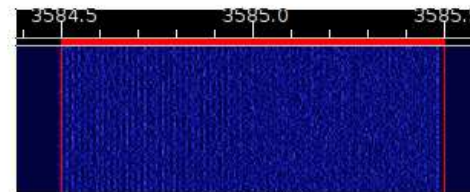
Sights & Sounds

BPSK	Bad IMD	CW	Contestia	DominoEX	Feld	FSQ	IFKP	MFSK	MT-63	Olivia	RTTY	THOR	THROB
------	---------	----	-----------	----------	------	-----	------	------	-------	--------	------	------	-------

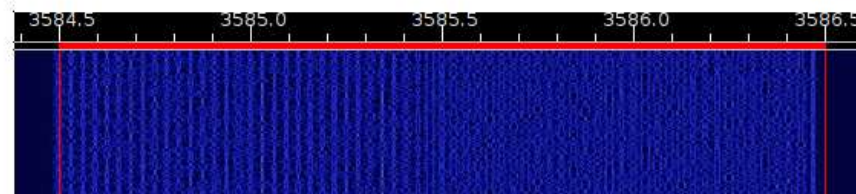
MT63 Modes



MT-63/500
[Spectrum](#)
[Sound](#)



MT-63/1000
[Spectrum](#)
[Sound](#)



MT-63/2000
[Spectrum](#)
[Sound](#)

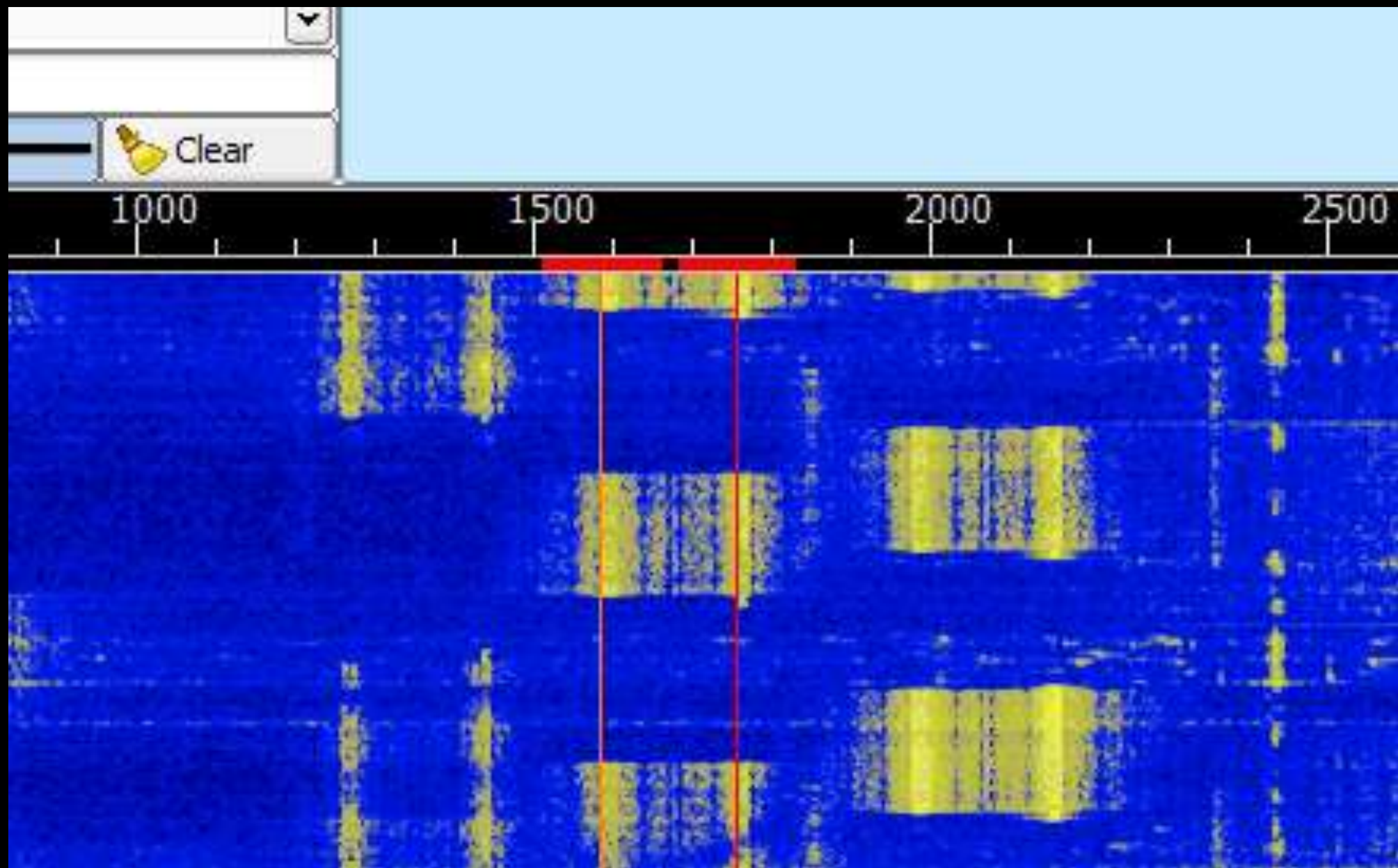
all signals shown in x1 waterfall mode, tick marks at 100 Hz intervals, waterfall palette is "blue-2"

General Description

MT63 is an Orthogonal Frequency Division Multiplexed (OFDM) mode consisting of 64 parallel carriers each carrying part of the transmitted signal. The tones are differential BPSK modulated. MT63 employs a unique highly redundant Forward Error Correction system which contributes to its legendary robustness in the face of interference and fading.

The tones have synchronous symbols, and are raised cosine modulated. The mode requires a very linear transmitter. Over-driving leads to excessive bandwidth and poorer reception. The mode is unpopular with many operators because of the excessive bandwidth used.





QUESTIONS?