

“Data”

Applications in Amateur Radio

The Fat Bloke Returns

Tim Hazel – 2E0TPH
Wykeradio@gmail.com



GET READY FOR



A LOT OF DATA

Using Data in Amateur Radio

- Data – You can do anything with it.
- Data can be used to make life easy (e.g MySQL, Logging and parsing data)

What has this got to do with radio?
Lets take a look...

Digital Data in Amateur Radio

- Groups and Data Types.
- DMTM – Discrete Multi Tone Modulation
- MFSK – Multiple Frequency Shift Keying
- Packet Radio
- PSK – Phase Shift Keying
- FSK – Frequency Shift Keying

Data Modes

- AMTOR – Amateur Teletype over Radio
- D-Star – High speed data only mode (128kbits/s)
- Hellschreiber – Facsimile based teleprinter
- Packet Radio (AX25) – Networking and APRS
- PACTOR – A combination of AMTOR and packet radio
- RTTY – A form of FSK for transmitting TEXT

MFSK

- DMTM uses MT63
- MFSK – FSK441, JT6M, JT65, FT8 (weak signal comms)
- Olivia MFSK, JS8 and other MFSK modes

PSK – Phase Shift Keying

- PSK31, QPSK31, PSK63, QPSK63
- Normally uses 31 or 63 baud*
- Uses binary or quadrature modulation types.

A Baud is a unit of transmission speed equal to the number of times that a signal changes state per second. Signals with only two possible states means one baud is one bit per second.

FSK – Frequency Shift Keying

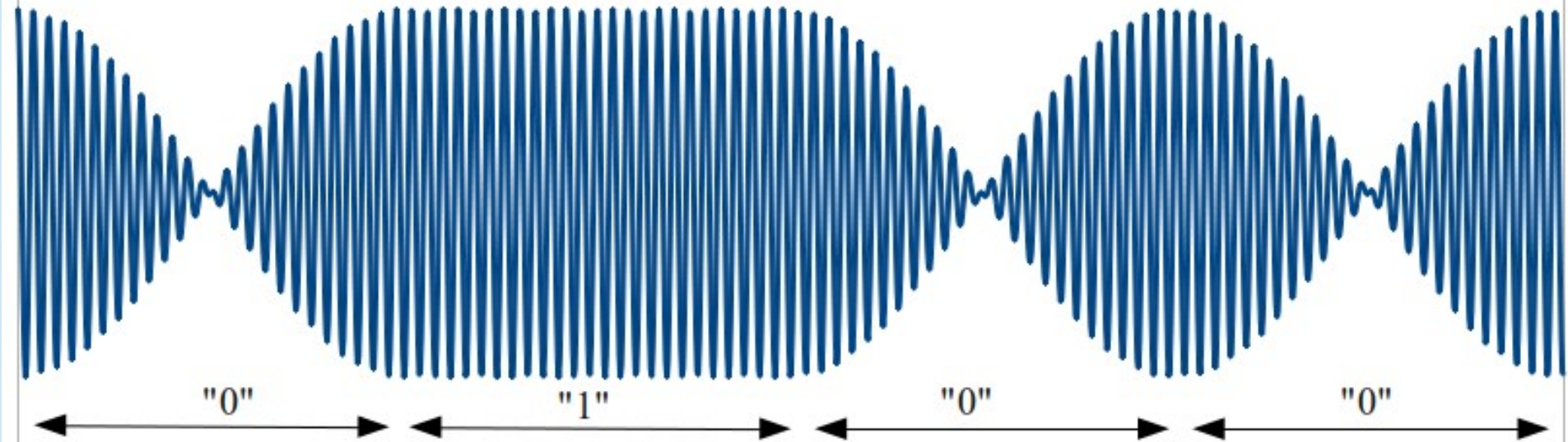
- RTTY (Radio Teletype)
- A type of FSK used for transmitting text

Other Data Modes

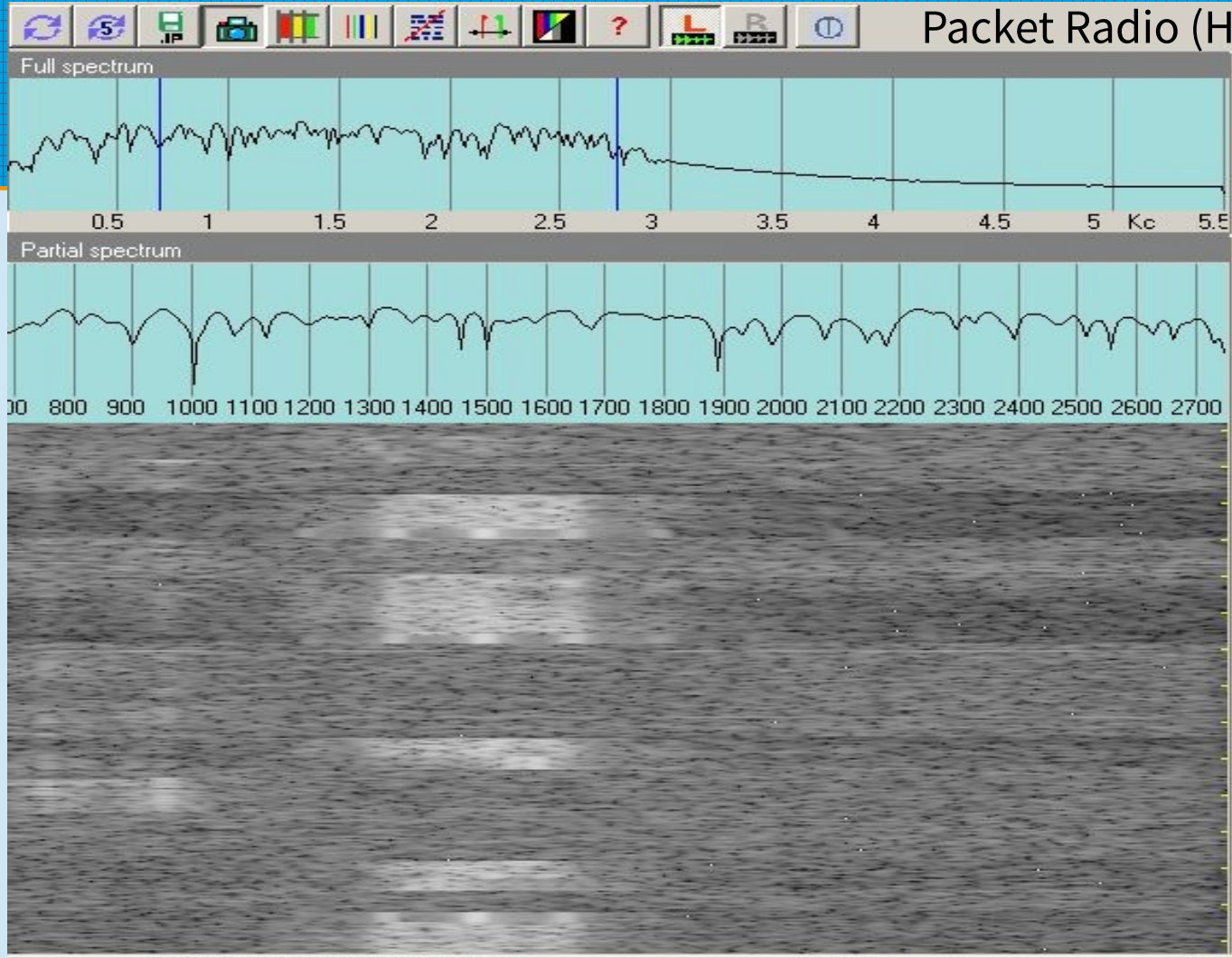
- MFSK – A modulation method using multiple frequencies to transmit the data
- Olivia, Throb, DominoEX, MT63 – suitable for soundcard based operation. (Easy to interface)
- PACTOR, CLOVER – Enhanced packet radio operation

31Hz Bandwidth

BPSK31 modulation



Packet Radio (HF)



Control panel for the spectrum analysis software:

- FFT points:** 1024
- Window function:** Hanning
- FFT overlap:** [Slider]
- Manual gain:** [Slider]
- Log display:** [Button]
- Average:** [Button]
- Peak hold:** [Button]
- Reset buffer:** [Button]
- Gray scale:** [Slider]
- Frequency:** [Green] 0, [Red] 0, [Triangle] 0
- Find cursors:** [Button]
- Time:** [Yellow] 0

SSTV – Slow Scan TeleVision

- Invented in 1957 by Copthorne Macdonald
- Used 120 lines and around 120pixels per line
- Black and white images only due to 3khz bandwidth

SSTV Demo

- Demonstration

Automatic Packet Reporting System

- Developed by Bob Bruninga (WB4APR) at the US Naval Academy
- First written in 1982 for plotting naval movements
- Written on an Apple 2 – Project CETS
- 1984 Commodore Vic20 – tracking horse runs
- Early 90's becomes APRS

Interfacing

- Direct connection from radio to PC is simple
- It can also destroy your equipment
- Use an opto-coupler or galvanic isolator interface

Digimode interface

- Fire up Eagle and show projects
- That's it for the slides.

Log2web

- Developed by some handsome chunky bugger
- Enables networked systems to use one database
- Uploads to the website every 30seconds
- Enabled almost real time SES viewing online!

LOG2WEB EXE

log2web www.vyke-radio.org (C)Copyright Tim Hazel

number of logged qso's 346

HRSE	CALL	Name	QTH	Freq
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1448	DC1LON			14.320
next update in	57	seconds		



Wyke Regis Training Centre

Amateur Radio Training Courses
Ofcom & RSGB Registered Examination Centre.



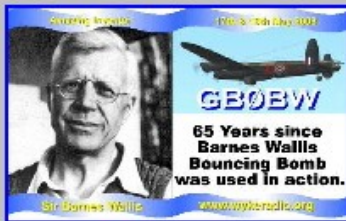
Closed until further notice

Username:

login

Password

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Welcome to the [GB25FC](#) online logging system.

GB25FC has now ceased transmitting. We would like to thank everyone who made this event possible. If you are interested in an online log for your website please see [here](#)

Wykeradio.org - live log facility

Last updated: 06-20-2007 at 21:51:11

Logbook = Gb25fc special event

DD	MM	YYYY	HHMM	Call	Name	Qth	Freq	Mode
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09-06-2007	1023	HA8AT	IMRE	18.132	USB
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09-06-2007	1025	DL4MCA/P	RAY	18.132	USB
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Due to increasing costs of server ownership and maintenance, i regret to inform all wykeradio.org users that this server will be switching off soon.

Those of you who have @wykeradio.org email addresses will find that these will become unavailable and i would recommend changing to a free email account as soon as possible.

I am not yet certain of the final day of operation for the server however, it will be soon.

Wykeradio.org has provided solutions for 8 business ventures and at its peak was getting nearly quarter of a million visits every day to its forums.

It saddens me to break this news and to take this course of action.

Since its inception on Thursday 4th May 2006, the servers have transferred nearly 28 Terabytes of information and the final visitor count remains an eye watering 664.3 MILLION hits.

Other domains are affected by this server closure and a separate email will be sent shortly to those affected.

The homepage at www.wykeradio.org will be updated over the next 24 hours.

All that remains is for me to say thanks to Neville (M5NEV) and Mark (M5MKW) for their support and to everyone else who has helped. I would thank you personally but there are too many.

Best regards,

Tim

2E0TPH

About me

- Started programming in 1979 (Basic)
- Wrote Y2K patches for a huge telco corporation (NDA)
- Apple IIE and BBC Model B Guru
- Wrote a VAT tracking program at 12
- We had a punch card machine donated by the MOD
- Ex Forensic data analyst (also subject to NDA) :(

80 Column punch card







