DMR


What Is DMR Digital Mobile Radio?
Hytera
Hytera
Hytera
Hytera
Hytera
Hytera

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Two-Way Radios

Digital Mobile Radio, or DMR for short, is a digital two-way radio standard offered by ETSI for global use. It is an open standard designed primarily to replace the aging analogue standards with double the channel capacity, providing cost optimised, secure and reliable communications for professional mobile users.

Digital Radio

DMR

MOTOTRBO.
DMR originated as a business communication standard in Europe.
Created for commercial communications,
Many manufactures of radios for DMR

D-Star

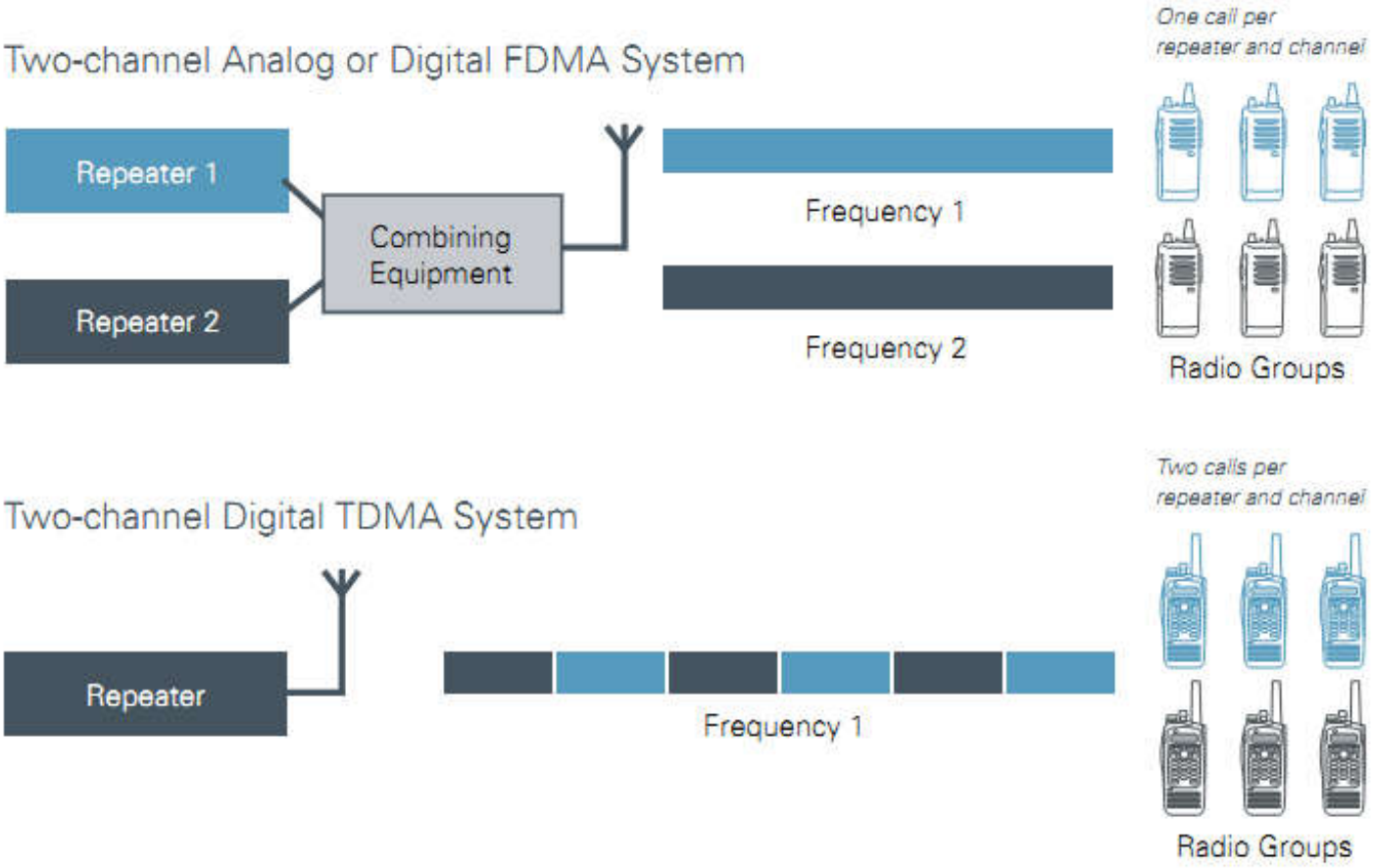
Oldest.
Created by the Japan Amateur Radio League (JARL)
Open standard.
created for Amateur Radio.
Icom are primary manufacturer

System Fusion Yaesu

Newest digital mode.
Proprietary
Transcode an incoming digital signal to analog or an incoming analog to digital or it can transmit what it receives, no matter if it is digital or analog.

TWO Repeaters in One!

TDMA saves licensing and equipment costs by enabling the equivalent of two 6.25 kHz channels within a single licensed 12.5 kHz channel



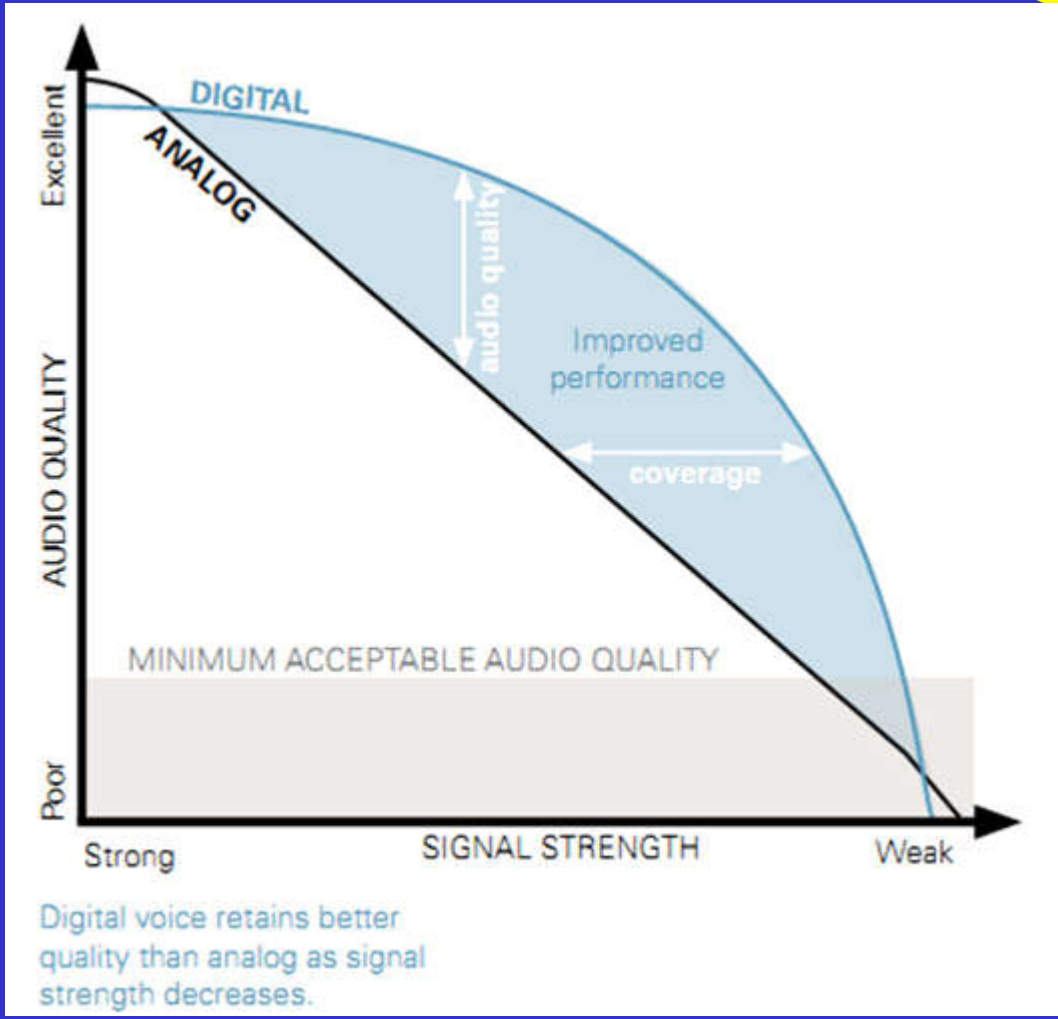
Half the Channel Bandwidth

f_c - 12.5 f_c f_c + 12.5 f_c – 6.25 f_c f_c + 6.25

Traditional Analog
25 kHz BW
1 Channel
1 Repeater

DMR
12.5 kHz BW
2 Channels
1 Repeater

Better Signal Quality



Digital voice retains better quality than analog as signal strength decreases.

- No hiss, popping, or static
- Better RF range than older digital technologies
- FEC and Cyclic Redundancy Check coders

Benefits of DMR

- First used in Commercial Applications in 2005
- Equipment is of Commercial Quality
- Superior Voice Quality
- Long Battery Life
- Supports multiple Talkgroups on one channel.

Colourcodes

- Colourcodes in DMR are analgous to CTCSS used in analogue repeaters.
- Prevents repeaters on the same frequency being accessed at the same time
- There are 16 different Colourcodes. If you do not have the right colourcode programmed into your radio you will not be able to receive anything.

Available Radios

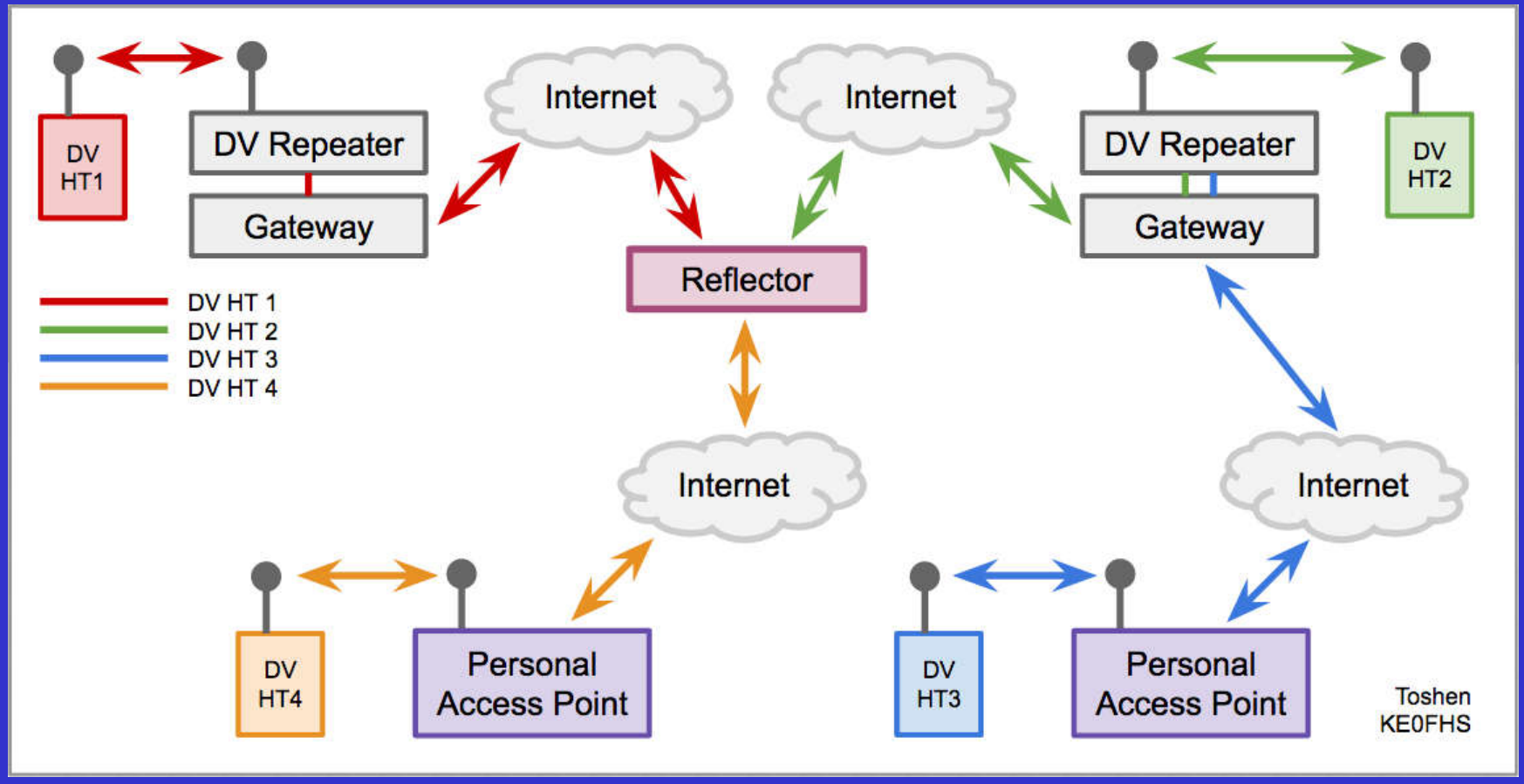
Programming your Radio

- All radio's have to be programmed using a computer.
- Using the proprietary software we create a codeplug
- The codeplug contains all the information your radio needs such as DMR ID, channels and many other settings.
- Each manufacturer produces their own software creating a unique codeplug.
- Each radio requires a specific code plug.

Hotspot

- A personal, low-power hotspot (also known as a personal access point) is a combination of hardware, firmware, and software that enables a ham with a digital radio and internet connectivity to link directly to digital voice (DV) systems around the world.
- Hotspots can link to DMR talkgroups and reflectors, D-STAR reflectors, YSF rooms.
- Hotspots are your own personal digital voice repeater and gateway, which can be really fun.

Hotspot


DV HT1
DV Repeater
Gateway
Internet
Internet
Reflector
DV Repeater
DV HT2
Gateway
DV HT 1
DV HT 2
DV HT 3
DV HT 4
Internet
Internet
DV HT4
Personal Access Point
DV HT3
Personal Access Point
Toshen KE0FHS

Hotspot


DMR


SharkRF openSPOT


NANO-SPOT
DMR,DStar,C4FM and P25
Digital Hotspot
DMR
Open Source
Compatible
Micro-Node International

Talkgroups

- Talkgroups are a way for groups of users to share 1 timeslot (one to many) without distracting other users of that timeslot
- Only one Talkgroup can use one time slot at a time.
- If your radio is not programmed to receive a talkgroup, you will not hear anything.

Talkgroups

Common to most UK repeaters

Timeslot 1

TG1- WW Calling

TG2 - Europe

TG13 – WW English

TG235 – Uk Wide

TG9

Direct Dial

Timeslot 2

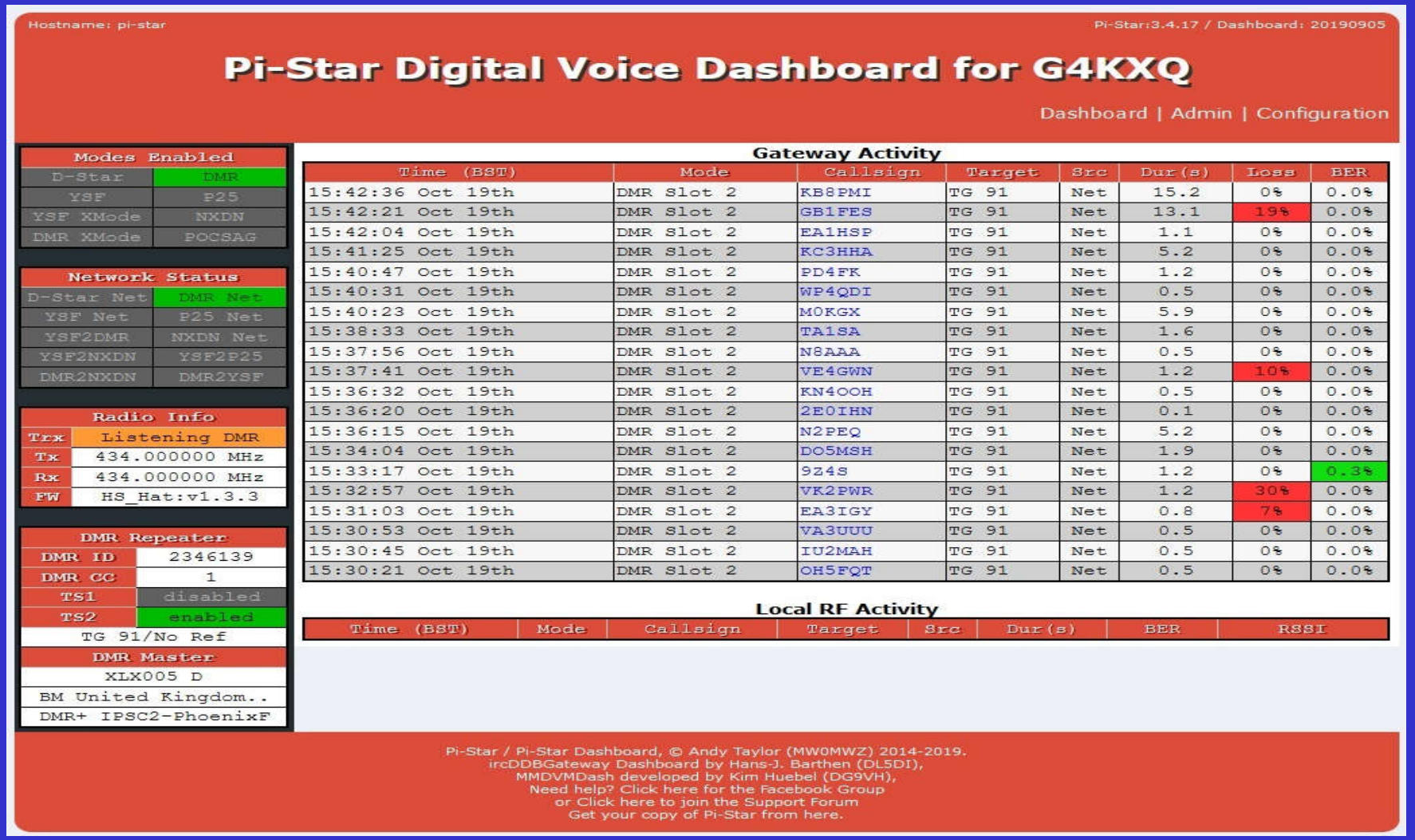
TG9 – Local

TG8 - Regional

Talkgroups

World Wide	TG1	TG235 Calling	4400
Europe	TG3	TG80 User	4401
World Wide 13	TG13	TG81 User	4402
UK Wide	TG 235	TG2351 - CQ-UK WIRES-X LINK	4409
UK 80	TG80	TG810 - REGIONAL: S.W. ENGLAND	4410
UK 81	TG81	DMR+ United Kingdom (English)	4404
SW Cluster	TG950		
UK 2351 (CQ-UK)	2351		
Echo Server	9990		
Baynet	31075		

Pi-Star



Hostname: pi-star

Pi-Star:3.4.17 / Dashboard: 20190905

Pi-Star Digital Voice Dashboard for G4KXQ

Dashboard | Admin | Configuration

Modes Enabled	
D-Star	DMR
YSF	P25
YSF XMode	NXDN
DMR XMode	POCSAG

Network Status	
D-Star Net	DMR Net
YSF Net	P25 Net
YSF2DMR	NXDN Net
YSF2NXDN	YSF2P25
DMR2NXDN	DMR2YSF

Radio Info	
Trx	Listening DMR
Tx	434.000000 MHz
Rx	434.000000 MHz
FW	HS_Hat:v1.3.3

DMR Repeater	
DMR ID	2346139
DMR CC	1
TS1	disabled
TS2	enabled
TG 91/No Ref	
DMR Master	
XLX005 D	
BM United Kingdom..	
DMR+ IPSC2-PhoenixF	

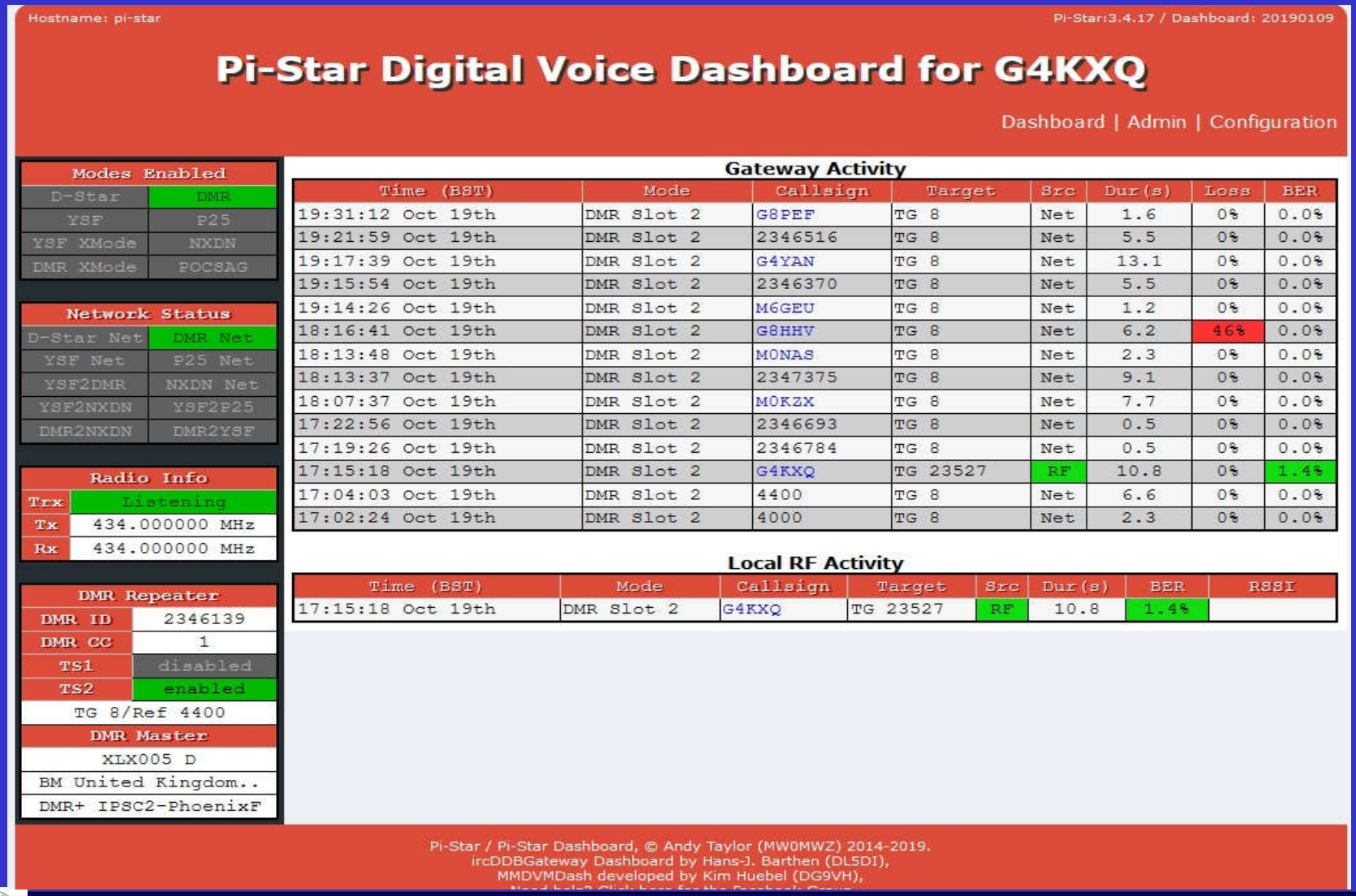
Gateway Activity

Time (BST)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER
15:42:36 Oct 19th	DMR Slot 2	KB8PMI	TG 91	Net	15.2	0%	0.0%
15:42:21 Oct 19th	DMR Slot 2	GB1FES	TG 91	Net	13.1	19%	0.0%
15:42:04 Oct 19th	DMR Slot 2	EA1HSP	TG 91	Net	1.1	0%	0.0%
15:41:25 Oct 19th	DMR Slot 2	KC3HHA	TG 91	Net	5.2	0%	0.0%
15:40:47 Oct 19th	DMR Slot 2	PD4FK	TG 91	Net	1.2	0%	0.0%
15:40:31 Oct 19th	DMR Slot 2	WP4QDI	TG 91	Net	0.5	0%	0.0%
15:40:23 Oct 19th	DMR Slot 2	M0KGX	TG 91	Net	5.9	0%	0.0%
15:38:33 Oct 19th	DMR Slot 2	TA1SA	TG 91	Net	1.6	0%	0.0%
15:37:56 Oct 19th	DMR Slot 2	N8AAA	TG 91	Net	0.5	0%	0.0%
15:37:41 Oct 19th	DMR Slot 2	VE4GWN	TG 91	Net	1.2	10%	0.0%
15:36:32 Oct 19th	DMR Slot 2	KN4OOH	TG 91	Net	0.5	0%	0.0%
15:36:20 Oct 19th	DMR Slot 2	2E0IHN	TG 91	Net	0.1	0%	0.0%
15:36:15 Oct 19th	DMR Slot 2	N2PEQ	TG 91	Net	5.2	0%	0.0%
15:34:04 Oct 19th	DMR Slot 2	DO5MSH	TG 91	Net	1.9	0%	0.0%
15:33:17 Oct 19th	DMR Slot 2	9Z4S	TG 91	Net	1.2	0%	0.3%
15:32:57 Oct 19th	DMR Slot 2	VK2PWR	TG 91	Net	1.2	30%	0.0%
15:31:03 Oct 19th	DMR Slot 2	EA3IGY	TG 91	Net	0.8	7%	0.0%
15:30:53 Oct 19th	DMR Slot 2	VA3UUU	TG 91	Net	0.5	0%	0.0%
15:30:45 Oct 19th	DMR Slot 2	IU2MAH	TG 91	Net	0.5	0%	0.0%
15:30:21 Oct 19th	DMR Slot 2	OH5FQT	TG 91	Net	0.5	0%	0.0%

Local RF Activity

Time (BST)	Mode	Callsign	Target	Src	Dur(s)	BER	RSSI

Pi-Star



Hostname: pi-star

Pi-Star:3.4.17 / Dashboard: 20190109

Pi-Star Digital Voice Dashboard for G4KXQ

Dashboard | Admin | Configuration

Modes Enabled	
D-Star	DMR
YSF	P25
YSF XMode	NXDN
DMR XMode	POCSAG

Network Status	
D-Star Net	DMR Net
YSF Net	P25 Net
YSF2DMR	NXDN Net
YSF2NXDN	YSF2P25
DMR2NXDN	DMR2YSF

Radio Info	
Trx	Listening
Tx	434.000000 MHz
Rx	434.000000 MHz

DMR Repeater	
DMR ID	2346139
DMR CC	1
TS1	disabled
TS2	enabled
TG 8/Ref 4400	
DMR Master	
XLX005 D	
BM United Kingdom..	
DMR+ IPSC2-PhoenixF	

Gateway Activity

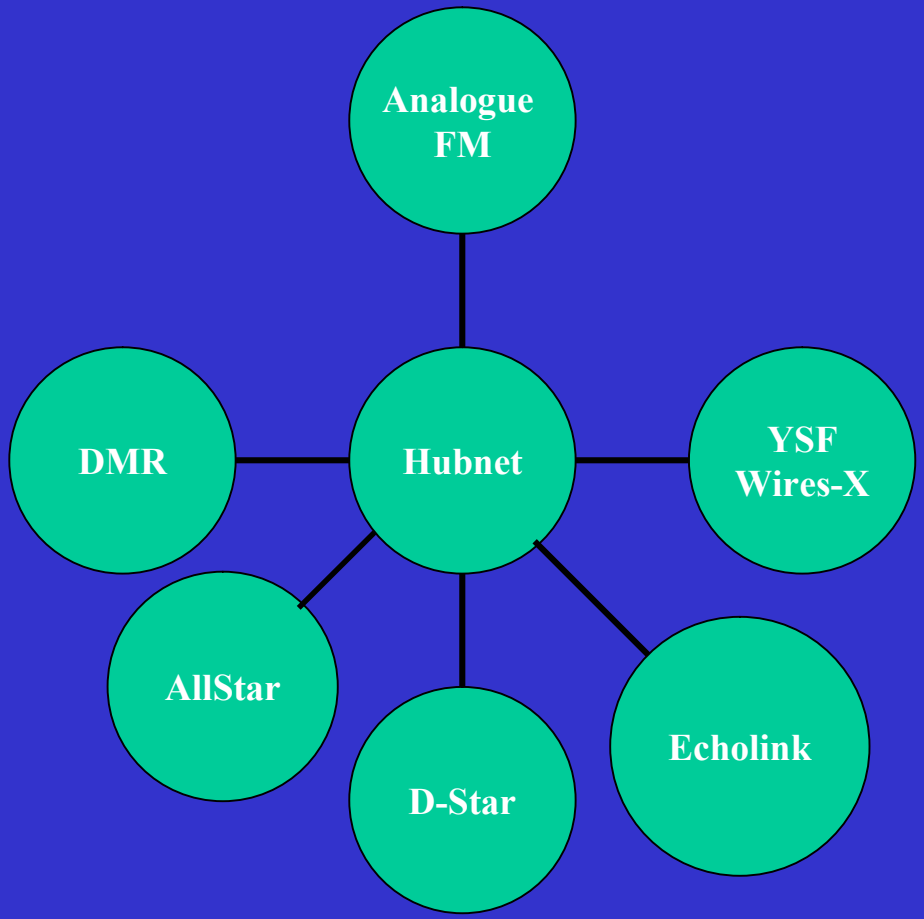
Time (BST)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER
19:31:12 Oct 19th	DMR Slot 2	G8PEF	TG 8	Net	1.6	0%	0.0%
19:21:59 Oct 19th	DMR Slot 2	2346516	TG 8	Net	5.5	0%	0.0%
19:17:39 Oct 19th	DMR Slot 2	G4YAN	TG 8	Net	13.1	0%	0.0%
19:15:54 Oct 19th	DMR Slot 2	2346370	TG 8	Net	5.5	0%	0.0%
19:14:26 Oct 19th	DMR Slot 2	M6GEU	TG 8	Net	1.2	0%	0.0%
18:16:41 Oct 19th	DMR Slot 2	G8HHV	TG 8	Net	6.2	46%	0.0%
18:13:48 Oct 19th	DMR Slot 2	M0NAS	TG 8	Net	2.3	0%	0.0%
18:13:37 Oct 19th	DMR Slot 2	2347375	TG 8	Net	9.1	0%	0.0%
18:07:37 Oct 19th	DMR Slot 2	M0KZX	TG 8	Net	7.7	0%	0.0%
17:22:56 Oct 19th	DMR Slot 2	2346693	TG 8	Net	0.5	0%	0.0%
17:19:26 Oct 19th	DMR Slot 2	2346784	TG 8	Net	0.5	0%	0.0%
17:15:18 Oct 19th	DMR Slot 2	G4KXQ	TG 23527	RF	10.8	0%	1.4%
17:04:03 Oct 19th	DMR Slot 2	4400	TG 8	Net	6.6	0%	0.0%
17:02:24 Oct 19th	DMR Slot 2	4000	TG 8	Net	2.3	0%	0.0%

Local RF Activity

Time (BST)	Mode	Callsign	Target	Src	Dur(s)	BER	RSSI
17:15:18 Oct 19th	DMR Slot 2	G4KXQ	TG 23527	RF	10.8	1.4%	

Pi-Star / Pi-Star Dashboard, © Andy Taylor (MW0MWZ) 2014-2019.
ircDDBGateway Dashboard by Hans-J. Barthen (DL5DI),
MMDVMDash developed by Kim Huebel (DG9VH),

HubNet


Analogue FM
DMR
Hubnet
YSF Wires-X
AllStar
D-Star
Echolink


United Kingdom
Isle of Man
Belfast
Dumfries
Durham
Middlesbrough
North Pennines AONB
Lake District National Park
North York Moors National Park
Yorkshire Dales National Park
York
Blackpool
Leeds
Peak District National Park
Nottingham
Leicester
Peterborough
Norwich
ENGLAND
Cambridge
Ipswich
Colchester
WALES
Cotswolds AONB
Oxford
Swansea
Cardiff
Bristol
Swindon
Reading
Southend-on-Sea
Canterbury
Bath
Southampton
Brighton
Bournemouth
Exeter
Plymouth
Torquay
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