

DECODIO NETWORK HEALTH MONITORING AND VOICE LOGGING

Decodio is specialised in software-defined radio technologies and offers best-in-class network health monitoring and voice logging solutions.

Extensive PMR protocol support and advanced, web-based analysis tools provide quick and accurate insight into network health and traffic.

HIGH THROUGHPUT

Real-time monitoring of 256 simultaneous channels over an instantaneous bandwidth of up to 50 MHz can be achieved on commodity hardware, offering unmatched spectrum analysis capabilities. The solution is based on multi-purpose receivers capable of streaming baseband IQ data and thus operates passively, in total independence of the network infrastructure. Multiple receivers can be used to increase the total bandwidth.

StreamID	Label	Frequency	Channel	Status	Scrambling	ChannelType	CountryCode	Network	BSN_ID	RSM_ID	Cell_No	Cell_Unique_ID	BSN_Decimal	UplinkScr	CellConfig	SystemTime	FrameCnt
1	Pol	390.555000	DSC	67		CONTROL	9	5	32	1	0	9,3,32,3,0	361	69	66	189	1229
2	Pol	391.755000	DSC	67		CONTROL	9	5	32	2	5	9,3,32,2,5	361	65	64	189	363
3	Pol	392.255000	DSC	103	99	ISLE											
4	Pol	392.355000	DSC	102	100	ISLE											
5	Pol	392.355000	DSC	67		CONTROL	9	5	38	1	3	9,3,38,1,3	351	65	64	94	1621
6	Pol	393.845000	DSC	4		TRAFFIC											
7	Pol	394.250000	DSC	94	113	110	109	ISLE									
8	Pol	394.755000	DSC	96	95	92	ISLE										
9	Pol	395.825000	DSC	113	114	113	112	ISLE									
10	Pol	394.054000	DSC	3		TRAFFIC											
11	Pol	395.355000	DSC	67		CONTROL	9	5	32	1	3	9,3,32,1,3	361	69	64	189	2437
12	Pol	394.675000	DSC	112	110	109	108	ISLE									
13	Pol	394.265000	DSC	98		ISLE											
14	Pol	392.465000	DSC	67		CONTROL	9	5	32	3	0	9,3,32,3,0	361	66	64	205	872
15	Pol	391.015000	DSC	67		CONTROL	9	5	5	3	0	9,3,5,3,0	111	66	64	155	1284
16	Pol	393.905000	DSC	93	92	89	ISLE										
17	Pol	394.695000	DSC	127	126	125	124	ISLE									
18	Pol	390.705000	DSC	67		CONTROL	9	5	32	2	0	9,3,32,2,0	361	64	64	189	2523

Network broadcasts



Long-term power measurement

EXTENSIVE DIGITAL PROTOCOL SUPPORT

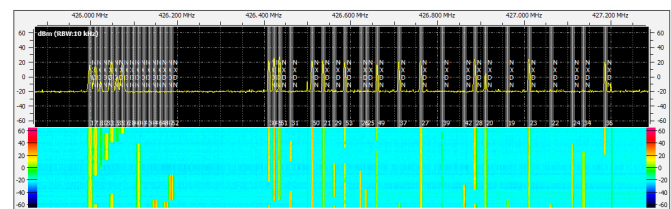
Decodio's spectrum monitoring system is capable of decoding and analysing a wide range of modern digital VHF/UHF transmission protocols in both uplink and downlink directions. With full support for TETRA, Tetrapol, NXDN, DMR, dPMR and P25, all practical mobile radio networks can be monitored. Logging of data transmissions such as SDS/text messages and position reports is supported.

Date	Start	Length	Label	Preced	Source	Destination	Priority	Codec	Usage	Meta	System	Quality	MCC	MNC	LA	CC	Mccid	Name	Type	File	Status
2015-04-18 15:58:47	1	00:15	100	NETRA	438.3	1200000	301200	Netra			437.4	100	96	100	10	1	1	0000	Call	Yes	Call
2015-04-18 15:58:47	1	00:15	100	NETRA	437.4	1200000	301200	Netra			438.3	100	96	100	10	1	1	0000	Call	Yes	Call
2015-04-18 15:58:47	1	00:15	100	NETRA	437.4	1200000	301200	Netra			437.4	100	96	100	10	1	1	0000	Call	Yes	Call
2015-04-18 15:58:47	1	00:15	100	NETRA	437.4	1200000	301200	Netra			437.4	100	96	100	10	1	1	0000	Call	Yes	Call
2015-04-18 15:58:47	1	00:15	100	NETRA	438.3	1200000	301200	Netra			438.3	100	96	100	10	1	1	0000	Call	Yes	Call
2015-04-18 15:58:47	1	00:15	100	NETRA	438.3	1200000	301200	Netra			438.3	100	96	100	10	1	1	0000	Call	Yes	Call

Web-based front-end

ADVANCED DIGITAL NETWORK MONITORING

Full decoding of protocol metadata such as cell ID and country code combined with a fast and powerful scanning feature allows to automatically find signals for a given network and quickly identify sources of interference and unwanted emissions. Voice recording, contents decoding and database logging are also available and a PDU output option can be used to troubleshoot and detect configuration errors.



Channelizing

CONTINUOUS LOGGING AND REAL-TIME ANALYSIS

Continuous logging of both signal quality and signal power for all channels allows early detection of system outage, signal quality drop and external interference. Voice content can be listened to in real time and logged to a database, for both digital and analog communications.

WEB-BASED FRONT-END

A web-based front-end allows remote access to the monitoring history and real-time network activity from a wide range of devices. Browser-based visualisation features include time series charts of long-term signal quality monitoring, call history browsing with advanced filtering and sorting as well as report generation in various formats such as Microsoft Excel and PDF.

ANALOG RECORDING AND TRIGGERS

Analog transmissions are fully supported, and can be both monitored for quality and demodulated. A squelch criteria can be set for each channel to trigger the recording of demodulated waveforms and baseband IQ data with adjustable pre- and post recording intervals. Demodulated waveforms can be displayed and listened to by the operator in real-time.

APPLICATIONS

- Network health monitoring in mission critical environments
- Voice logging of analog and digital RF communications
- Network planning and verification
- Interference detection

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