

---

# Serial protocol DAB receiver

---

## Output possibilities

\*<message> Feedback  
:<message> Capabilities  
\$<message> Dynamic message

Error codes:

#0	No error
#1	Out of range
#2	Syntax error

Commands:

ENABLE=1	Start serial connection
ENABLE=0	Stop serial connection
INTERVAL=<value>	Signal info interval (0-500mS)
TUNE=<value>	Tune to frequency number (see table)
SERVICE=<value>	Switch to service

Output:

Example:

```
*ENABLE=1,v1.00,SI4684/4.0.5
:MODE=3,3-3
*INTERVAL=100
:FREQ=38,0:174928,5A;1:176640,5B;2:178352,5C;3:180064,5D;4:181936,6A;5:183648,6B;6:
185360,6C;7:187072,6D;8:188928,7A;9:190640,7B;10:192352,7C;11:194064,7D;12:195936,
8A;13:197648,8B;14:199360,8C;15:201072,8D;16:202928,9A;17:204640,9B;18:206352,9C;1
9:208064,9D;20:209936,10A;21:211648,10B;22:213360,10C;23:215072,10D;24:216928,11A;
25:218640,11B;26:220352,11C;27:222064,11D;28:223936,12A;29:225648,12B;30:227360,12
C;31:229072,12D;32:230784,13A;33:232496,13B;34:234208,13C;35:235776,13D;36:237488,
13E;37:239200,13F
*SERVICE=11
*TUNE=11
$M=0
$L=COUNT=12,ENSEMBLE=8181,MTVNL;SERVICES=0,3,TPEG;1,4,GLXY.RADIO;2,4,BBC
WORLDSERVICE;3,4,Vibe Radio;4,4,Magic FM;5,4,TOMRRWLND OWR NL;6,4,Vintage
Veronica;7,4,KINK DISTORTION;8,4,4EVER49 Radio;9,4,GOD Radio;10,4,Grand Prix
Radio;11,4,Kermis FM
$I=ID=12;SID=8021;PTY=10;PROTECTION=8;SAMPLERATE=32000;BITRATE=96;AUDIO=2
$D=RT=You Make Me Feel (mighty Real) - Adam Lambert
$M=SLIDESHOW=2,BASE64=iVBORw0KGgoAAAANSUhEUgAAUUAADwCAMAAABG801ZAA
AAPFBMVEUxL3cwMHkvMnkvM3s0OY..... <etcetera>
```

Explanation:

\*ENABLE=1,v1.00,SI4684/4.0.5

Protocol is enabled. Software version of the radio is v1.00. Chip is SI4684. Firmware in the chip is v4.0.5

:MODE=3,3-3

Radio is in mode 3 (DAB), possibilities is only DAB (min 3, max 3).

\*INTERVAL=100

Interval is set to 100mS

:FREQ=38,0:174928,5A;1:176640,5B;2:178352,5C;3:180064,5D;4:181936,6A;5:183648.....

Total of 38 frequencies available. Frequency 0 is 174.928MHz, channel 5A. Frequency 1 is 176.640MHz, channel 5B etcetera.

\*SERVICE=11

Currently Service 11 is playing

\*TUNE=11

Radio is currently tuned to 11<sup>th</sup> frequency. Which is 194.064MHz, DAB channel 7D

\$M=SLIDESHOW=0

No slideshow present

\$L=COUNT=12,ENSEMBLE=8181,MTVNL;SERVICES=0,3,TPEG;1,4,GLXY.RADIO; etcetera

This is an overview of the available services. Total 12 services available. EID is 8181 and Ensemble name is MTVNL. First available service is TPEG, which is mode 3. Second service is GLXY.RADIO in mode 4 etc.

Mode list:

0 : AUDIO STREAM SERVICE

1 : DATA STREAM SERVICE

2 : FIDC SERVICE

3 : MSC DATA PACKET SERVICE

4 : DAB+

5 : DAB

6 : FIC SERVICE

7 : XPAD DATA

8 : NO MEDIA

\$I=ID=12;SID=8021;PTY=10;PROTECTION=8;SAMPLERATE=32000;BITRATE=96;AUDIO=2

Current service information:

ID = 12, SID/PI is 8021, PTY is 10, protection level is 8, samplerate is 32kHz, bitrate is 96kbps, audiomode is 2.

Protection level list:

1 : Protection mode is UEP. Protection level is 1

2 : Protection mode is UEP. Protection level is 2

3 : Protection mode is UEP. Protection level is 3

4 : Protection mode is UEP. Protection level is 4

5 : Protection mode is UEP. Protection level is 5

6 : Protection mode is EEP. Protection level is A-1  
7 : Protection mode is EEP. Protection level is A-2  
8 : Protection mode is EEP. Protection level is A-3  
9 : Protection mode is EEP. Protection level is A-4  
10 : Protection mode is EEP. Protection level is B-1  
11 : Protection mode is EEP. Protection level is B-2  
12 : Protection mode is EEP. Protection level is B-3  
13 : Protection mode is EEP. Protection level is B-4

Audio mode list:

0 : dual  
1 : mono  
2 : stereo  
3 : joint stereo

*\$D=RT=You Make Me Feel (mighty Real) - Adam Lambert*

This is the servicedata (radiotext) message.

*\$M=SLIDESHOW=2,BASE64=iVBORw0KGgoAAAANSUh.....*

Slideshow found, filetype is PNG. Encoded in BASE64. After this the base64 code is send.

When image is JPG, SLIDESHOW=1 will be used.

When a conversion error occurred, you'll get the message \$M=SLIDESHOW=3.

### **Signal information**

Every x mS (set by interval) a information line with signal info will be transmitted.

Example:

*\$S=SIGNAL=43.9,LOCK=1,CNR=18,FIC=100*

Signalstrength is 43.9dBuV, DAB signal is locked. MER is 18dB and signalquality is 100%.