ProDAB-1 Plus
&
ProDAB-2 Dual
Quick Start Guide
Version 4.1
ProDAB Version 210/210

Audio & Design

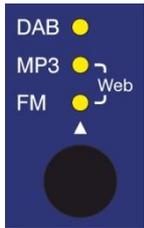## 1   Initial Configuration

Getting Started:

ProDAB takes approximately 35 seconds to boot up, during this time the power LED will flash.

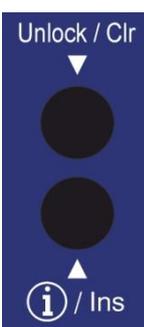Press to select:
DAB/DAB+
MP3
Web (Internet Radio)
FM

When the OLED display is not in screen saver mode (Pressing any of the "Nav" keys will bring the unit out of screen saver)

DAB Mode: ◀▶ display the available DAB services **OK**, will select the currently displayed service.

MP3 Mode: ◀▶ display the MP3 files available **OK**, will play the currently displayed file.

Web Mode: ◀▶ display available web links **OK**, will select the currently displayed link.

FM Mode: ◀▶ tune FM receiver in 100KHz steps **OK**, will tune to the currently displayed frequency.

Unlocked

Locked

To Unlock front panel press and hold Unlock button until padlock symbol changes to Unlocked. This button will also jump out of Screen Saver or Main Menu to service display.

When displaying currently selected service, station or track press (i) to change displayed information.

When ProDAB is shipped from the factory it will require a "DAB Scan" to find your local multiplexers. You will see a message "No Stream Selected – Press OK for Menu" Press the **OK** button then select DAB Scan use the ▲ ▼ button to select the type of scan you require and ▶ to start scanning. ProDab will then select the first service alphabetically that it finds. Press ◀▶ to view all other found services & **OK** to select.
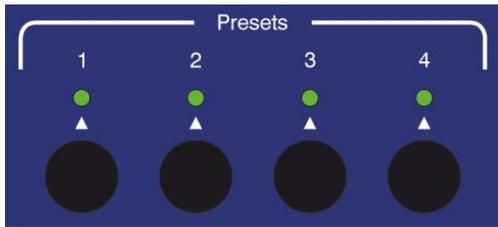
Press and hold Preset button to save currently selected service, station, MP3 track or Web link.

Pressing ◄► whilst the preset directory is shown will cycle through the available presets, including those not available by direct access buttons – i.e. Presets 5 to 15

Presets also store mode, so can be used as a quick way to switch between DAB, FM, MP3 & Web.

Mono/Stereo selection will change the audio output in all modes, including IP stream output.

The headphone output is suitable to drive headphones with a minimum impedance of 16Ω
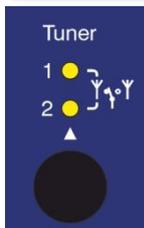
Tuner selection button selects which output is currently being monitored by the headphone output and controlled by the front panel buttons
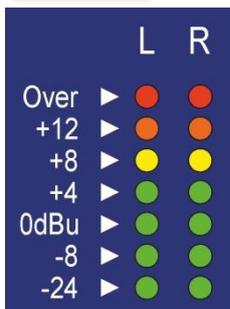
LED Meters - Over = 1dB below fsd.
0dBu = -18dB below fsd

Press and hold Tuner button to change unit mode between Diversity or Independent modes

2   OLED DAB Display screens

Press Info button to cycle through available display screens

Basic screen with Service Name, program information, bit rate & mode

Information about selected MUX, audio algorithm, CID & SID, allocated Consumers Units.

Technical information for both tuners

Oscilloscope display to help with setting change over parameters

See Change Over section for more details.

3   Network set-up

```
      Main Menu

  DISPLAY  OPTIONS
  DAB  SCAN
  MANUAL  DAB  TUNE
▶ SYSTEM

▼ NEXT    ◀▶ SELECT    OK EXIT
```

Setting up IP address mask & default gateway.
Press **OK** then select SYSTEM with ▲▼ then ▶.

```
   System Parameters

    NETWORK  MENU

       ▶ GO

▼ NEXT    ◀▶ SELECT    OK EXIT
```

Select NETWORK MENU with ▲ or ▼ then ▶

```
   Network Settings

    DHCP/STATIC

    ▶ STATIC

▼ NEXT    ◀▶ SELECT    OK EXIT
```

Choose between STATIC & DHCP using ◀▶ **keys**
Then press ▼ Next Menu

```
   Network Settings

    IP ADDRESS

 <192.168.000.007/24>

▼ NEXT    ◀▶ EDIT    OK EXIT
```

If Static press ▶ to edit IP address/net mask.
Then use ◀▶ to select & ▲▼ to change items
then **OK** to save Note: net mask of
255.255.255.0 is shown as /24 i.e. 24 bits
Press ▼ Next Menu

```
   Network Settings

    GATEWAY

 <192.168.000.254>

▼ NEXT    ◀▶ EDIT    OK EXIT
```

To edit use ◀▶ to select & ▲▼ to change
items then **OK** to save
Press ▼ Next Menu

```
   Network Settings

    DNS

 <008.008.008.008>

▼ NEXT    ◀▶ EDIT    OK EXIT
```

To edit use ◀▶ to select & ▲▼ to change
items then **OK** to save
Press ▼ Next Menu

```
   Network Settings

    SUMMARY:
    STATIC
 IP:192.168.000.007/24
  GW:192.168.000.254
  DNS:008.008.008.008
▼ NEXT              OK
```

Note: The embedded web server can be
accessed via the set IP address port 80.
Press ▼ Next Menu

▶ to save settings
▼ Next Menu

And ▶ to re-boot Operating System

Units are shipped with the network set to Static (192.168.0.7).

To upload MP3 files use a SFTP client such as Filezilla, but, note that we use non-standard port for SSH & SFTP of 43222 or use Web Interface (Full User Manual can be downloaded using the Help Button on the Web Interface).

Login details for MP3 upload:

Username - mp3
Password - 2033740

Filezilla download - https://filezilla-project.org/

When displaying menus pressing ▲ or ▼ takes you to the next or previous menu item. **OK** is for selecting/accepting the desired action or parameter.
▶ Will take you into sub-menu or editing function.

4   DAB Scan

```
        Main Menu
  DISPLAY OPTIONS
▶ DAB SCAN
  MANUAL DAB TUNE
  SYSTEM
▼ NEXT    ◀▶ SELECT    OK EXIT
```

Press **OK** then select DAB SCAN with ▲▼ then ▶

```
R1 DAB Station Scan


     ▶ Tuner 1

  ◀▶ CHANGE    ▼ NEXT
```

Choose between Radio A & B using ◀▶ keys
Then ▼ to go to next menu option

```
R1 DAB Station Scan


   ▶ NEW SCAN
    (CLEAR LIST)

  ◀▶ CHANGE    ▼ NEXT
```

Choose between NEW SCAN which will clear current station list or RE-SCAN to append to current list using ◀▶ Then ▼ to go to next menu option

```
R1 DAB Station Scan


  ▶ NORMAL SCAN
     (FASTER)

  ◀▶ CHANGE    ▼ NEXT
```

Choose NORMAL SCAN or THOROUGH SCAN using ◀▶ keys. Then ▼ to go to next menu option

```
R1 DAB Station Scan
     BEGMUX:24 10B
     ENDMUX:35 13A


  ◀▶ BEGMUX    ▼ ENDMUX
     OK:  START SCAN
```

Press **OK** to start Scan or ◀▶ to change scan starting MUX or ▲▼ to change scan ending MUX.

5   System Menu

```
     Main Menu

  DISPLAY OPTIONS
  DAB SCAN
  MANUAL DAB TUNE
▶ SYSTEM

▼ NEXT    ◀▶ SELECT    OK EXIT
```

▶ Then ▼ to go to next menu option

```
   System Parameters

        PADLOCK

      ▶ DISABLED


▼ NEXT    ◀▶ CHANGE    OK EXIT
```
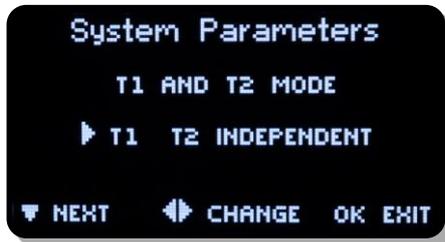
▶ to access, option time before unit will automatically lockout front panel keys. Press and hold Unlock/Clr key to unlock.

```
   System Parameters

  DAB FREQUENCY RANGE

     ▶ UK RANGE


▼ NEXT    ◀▶ CHANGE    OK EXIT
```

▶ to access sub-menu, this sets the MUX range for DAB Scan options:
UK Range 10B to 13A
EU Range 05A to 13F

```
   System Parameters

     T1 AND T2 MODE

  ▶ T1  T2 INDEPENDENT


▼ NEXT    ◀▶ CHANGE    OK EXIT
```

▶ to access sub-menu, this sets Tuner 1 & 2 as fully independent or diversity mode.

```
   System Parameters

    FM CHANNEL STEP

      ▶ 100 KHZ


▼ NEXT    ◀▶ CHANGE    OK EXIT
```

▶ to access sub-menu
options:
100KHZ
50KHZ

```
   System Parameters

  FM BLEND AND BW LIMIT

       ▶ OFF


▼ NEXT    ◀▶ CHANGE    OK EXIT
```

▶ to access sub-menu
options:
OFF
AUTO BLEND – Audio will automatically be mixed to Mono as RSSI decreases.

```
   System Parameters

   VOLUME SLOW FADING

     ▶ DISABLED


▼ NEXT    ◀▶ CHANGE    OK EXIT
```

▶ to access sub-menu
options:
DISABLED
ENABLED

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System Parameters
SELECT SERVICE ON WAIT
▶ DISABLED (NEEDS OK)
▼ NEXT   ◀▶ CHANGE   OK EXIT

▶ to access sub-menu
options:
DISABLED
ENABLED

System Parameters
STARTING PRESET
T1 PREVIOUS
T2 PREVIOUS
▼ NEXT   ◀▶ CHANGE   OK EXIT

▶ to access sub-menu
options:
NONE (Disabled) Unit will return to previous setting when powered up
Select Preset which should be used on power up.

System Parameters
DAB DRC LEVEL
▶ OFF
▼ NEXT   ◀▶ CHANGE   OK EXIT

▶ to access sub-menu

System Parameters
DAB RETRY ON SIG FAIL
▶ DISABLED
▼ NEXT   ◀▶ CHANGE   OK EXIT

▶ to access sub-menu

System Parameters
UNIT NAME
<ProDAB>
▼ NEXT   ◀▶ EDIT   OK EXIT

◀▶ to edit

System Parameters
UNIT LOCATION
<UK>
▼ NEXT   ◀▶ EDIT   OK EXIT

◀▶ to edit

System Parameters
ENGINEERING MENU
▶ GO
▼ NEXT   ◀▶ SELECT   OK EXIT

▶ to access Engineering sub-menu

System Parameters

NETWORK MENU

▶ GO

▼ NEXT   ◀▶ SELECT   OK EXIT

▶ to access Network sub-menu, see Network setup section on previous pages

System Parameters

CH/OVER MENU

▶ GO

▼ NEXT   ◀▶ SELECT   OK EXIT

▶ to access sub-menu

System Parameters

MP3 MENU

▶ GO

▼ NEXT   ◀▶ SELECT   OK EXIT

▶ to access sub-menu, manage copy/delete stored MP3 files

6 Change Over

ProDAB can automatically play out a stored MP3 or switch to Internet radio when audio silence is detected or when RF signal level drops below a set threshold. From version 160/160 Change Over is implemented as a separate software module that is "hard coded" to use Preset 1 as the main program selected and Preset 2 as the "fail over" preset. Once "Armed" front panel controls are locked out. To disable Change Over mode, press and hold the Unlock/Clr front panel button. On ProDAB Dual only Tuner 1 can be set to Change Over mode, Tuner 2 still functions but cannot be changed. Also, from version 160/160 Change Over can be "Armed" and parameters changed via the web GUI.

Change Over modes

	Preset 1	Preset 2
✅	DAB	MP3 or Web
✅	FM	MP3 or Web
✅	Web	DAB or FM
❌	FM	DAB
❌	DAB	FM
❌	Web	MP3

Press **OK** then select SYSTEM with ▲▼ then ▶

Then select CH/MENU with ▲▼ then ▶

Change over options are: Disabled, ON AF THRESHOLD (Audio level) or ON RSSI THRESHOLD (Received Signal Strength)

Ch/Over Parameters

CH/OVER SET DEFAULT VALUES
▶ CUSTOM
AF THR:000 ATT:001 DEC:001
DELAY FRWD:000 BACK:000

▼ NEXT ◀▶ CHANGE OK EXIT

Change over parameters can be optimized for audio threshold/rf RSSI along with delay, attack and decay times. Other options – SMOOTH MUSIC, POP MUSIC, SPEECH, CLASSIC MUSIC & RSSI LEVEL

Ch/Over Parameters

AF LEVEL THRESHOLD
FSD
▶ -48dBFS (1/256)

▼ NEXT ◀▶ CHANGE OK EXIT

Change Over, Disabled or detection on audio silence or low RSSI

Ch/Over Parameters

PEAK CALC ATTACK RATE
1/sec
▶ 1.00SEC (1/1)

▼ NEXT ◀▶ CHANGE OK EXIT

Ch/Over Parameters

TIME LAG - BEFORE GATE
(SECS)
▶ 0

▼ NEXT ◀▶ CHANGE OK EXIT

Ch/Over Parameters

TIME LAG - RETURN FROM GATE
(SECS)
▶ 0

▼ NEXT ◀▶ CHANGE OK EXIT

Ch/Over Parameters

MP3 REPEAT
▶ STOP AT END

▼ NEXT ◀▶ CHANGE OK EXIT

MP3 Repeat options:
STOP AT END – Play once then stop
REPEAT SAME – Play single selected MP3 then repeat.
NEXT IN LIST – Play all MP3 once, then stop

BBC Radio 2
DAB C1 AF:071 PK:038 TH:000
AF
PK
GT
EG

SI

Oscilloscope display, see notes below for how to use this tool.

AF is the instant L+R (mixed) volume level for the selected source (i.e channel 1 as "C1") This is shown as a number (0..255) and also as a time plot.

PK is the peak value of the above, and modified by the attack and decay constants settable by the change over menu, "pk" is shown as a number (0..255) and as a time plot.

GT is the raw gate logic level generated by the value **PK** threshold by constant value **TH** which is also settable from the changeover menu and displayed as a number (0..255)

EG Is the extended (smoothed) gate version of **GT** by adding extra lead and lag times to avoid glitches.
Lead and lag are settable from the changeover menu. The **EG** gate is the one that defines the changeover state.

The general procedure is to set the **GT** threshold, attack and decay so that it more or less follows the audio, then adjust the lead and lag times for **EG** so that short glitches are minimised or removed.

SI is the silence gate for the same source, (obtained by a different calculation) and shown here for comparison.

7   Engineering menu

▶ key takes you to next menu level

▶ key takes you to next menu level

▶ key takes you to next menu level
▼ key takes you to next menu

▶ key takes you to next menu level
▼ key takes you to next menu

Engineering Settings
AES3 MENU
▶ GO

▼ NEXT ◀▶ SELECT OK EXIT

▶ key takes you to next menu level
▼ key takes you to next menu

Set AES 3 parameters such as sampling frequency.

Engineering Settings
CURRENT PIN CODE
<0000>
<DISABLED>

▼ NEXT ◀▶ EDIT OK EXIT

Press ◀▶ to edit, then ▲▼ to change
▼ key takes you to next menu

Engineering Settings
UNIT LOCATION
<UK>

▼ NEXT ◀▶ EDIT OK EXIT

Press ◀▶ to edit, then ▲▼ to change
▼ key takes you to next menu

Engineering Settings
REBOOT SYSTEM
(TAKES 30 SECS)
▶ GO

▼ NEXT ◀▶ SELECT OK EXIT

Warning ▶ key will reboot system

Engineering Settings
FM SCAN MENU
▶ GO

▼ NEXT ◀▶ SELECT OK EXIT

Full or partial spectrum scan of FM band

▶ key takes you to menu options
▼ key takes you to next menu

Engineering Settings
DAB QUICK SCAN
▶ GO

▼ NEXT ◀▶ GO OK EXIT

Full or partial spectrum scan of DAB MUX/Services

▶ key takes you to next menu option
▼ key takes you to next menu

Engineering Settings
SW VERSIONS
HWR:0171
RAD:0170
FPGA:4321E1C4
ProDAB-2 Dual

▼ NEXT OK EXIT

Application software and FPGA versions

▼ key takes you to next menu

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Engineering Settings

HW VERSIONS
DAB T1 FIRMWARE
00 00 00 00 4C 12 00 00
06 00 04 00 A5 24 00 00

▼ NEXT   OK EXIT

DAB (and FM, select FM mode first) chipset firmware versions

DAB - 6.04

FM - 4.0C

▼ key takes you to next menu

Engineering Settings

STREAMER SOURCE

Tuner1 Only

▼ NEXT   ◀▶ SELECT   OK EXIT
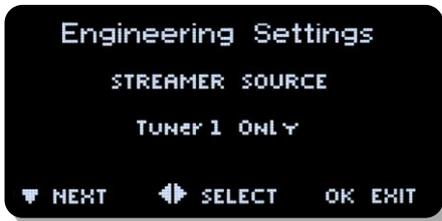
Select source for Icecast compatible IP stream output. Either follows the selected "Tuner" (Front panel or web GUI), or fixed to the output of Tuner 1

▶ key takes you to next menu option
▼ key takes you to next menu

Engineering Settings

DAB RSSI OFFSET

0 dB

▼ NEXT   ◀▶ SELECT   OK EXIT

Allows additional calibration of DAB RSSI level

Press ◀▶ to edit, then ▲▼ to change

▼ key takes you to next menu

Engineering Settings

FM RSSI OFFSET

0 dB

▼ NEXT   ◀▶ SELECT   OK EXIT

Allows additional calibration of FM RSSI level

Engineering Settings

GPIO OUT PORT MAPPING

▶ GO

▼ NEXT   ◀▶ SELECT   OK EXIT

Default map settings for GPIO Outputs. ◀▶ & ▲▼ to change

(compatible with ProDAB-1)

GPIO OUT Mapping
▶ 0 - Changeover
1 - FM TA Flag
2 - Mono Flag on DACa
3 - Silence on DACa
4 - RSS Low Ra
5 - Silence on DACb
6 - Network Fail

Engineering Settings

GPIO IN PORT MAPPING

▶ GO

▼ NEXT   ◀▶ SELECT   OK EXIT

Default map settings for GPIO Inputs. ◀▶ & ▲▼ to change

(compatible with ProDAB-1)

GPIO IN Mapping
▶ 0 - Preset 1 Tuner 1
1 - Preset 2 Tuner 1
2 - Preset 3 Tuner 1
3 - Preset 4 Tuner 1
4 - Preset 1 Tuner 1
5 - Preset 2 Tuner 1
6 - Preset 3 Tuner 1

7.1   GPIO Outputs

Default GPIO Output mapping and pin out

GPO-0   (pin 23) Low = In changeover to MP3, Tuner 1
GPO-1   (pin 22) Low = RDS TA Traffic Flag active, Tuner 1
GPO-2   (pin 21) Low = Mono, Tuner 1
GPO-3   (pin 20) Low = Audio silence detect, Tuner 1
GPO-4   (pin 19) Low = RSSI below threshold, Tuner 1
GPO-5   (pin 10) Low = Audio silence detect, Tuner 2
GPO-6   (pin 9)   Low= Network Fail

7.2   GPIO Output options available

OLED Display

Changeover	Changeover Active
AESb AF Silence	Silence detected on Tuner 2 AES Output
Rb AF Silence	Silence detected on Tuner 2 (internal)
AESa AF Silence	Silence detected on Tuner 1 AES Output
Stream Active	Streaming output has active connection/s
Ra AF Silence	Silence detected on Tuner 1 (internal)
CPU AF Silence	Silence detected on Streaming Output (internal)
SNR Low Ra	Signal to Noise low on Tuner 1
Diversity	Unit in Diversity mode
Mono Flag on DACb	Output 2 set to mono (DAB, FM, MP3 or Web)
Network Fail	No network connection
Silence on DACb	Silence detected on Output 2 (internal)
RSS Low Ra	Received Signal Strength Low Tuner 1
Silence on DACa	Silence detected on Output 1 (internal)
Mono Flag on DACa	Output 1 set to mono (DAB, FM, MP3 or Web)
FM TA Flag	FM TA Flag active Tuner 1

Default GPIO allocation version 1.30 firmware onwards

7.3   GPIO Output Pin out:

GPO-0   (pin 23) Low = In changeover to MP3, Tuner 1
GPO-1   (pin 22) Low = RDS TA Traffic Flag active, Tuner 1
GPO-2   (pin 21) Low = Mono, Tuner 1
GPO-3   (pin 20) Low = Audio silence detect, Tuner 1
GPO-4   (pin 19) Low = RSSI below threshold, Tuner 1
GPO-5   (pin 10) Low = Audio silence detect, Tuner 2
GPO-6   (pin 9) Low = Network Fail
GPO-7   (pin 8) Low = Not Defined

Common Grounds: pins 2, 3, 4, 11, 12 & 13
+5V Current Limited: pins 24 & 25

7.4   GPIO Inputs

```
Engineering Settings

   GPIO IN PORT MAPPING


         ▶ GO

▼ NEXT    ◀▮▶ SELECT    OK EXIT
```

```
    GPIO IN Mapping
▶ 0 - Preset 1 Tuner 1
  1 - Preset 2 Tuner 1
  2 - Preset 3 Tuner 1
  3 - Preset 4 Tuner 1
  4 - Preset 1 Tuner 1
  5 - Preset 2 Tuner 1
  6 - Preset 3 Tuner 1
```

◀▶ & ▲▼ to change

7.5   GPIO Inputs options available

Option	Activate (Closing contact to GND)	Release (Open)
0	No action	No action
1	Preset 1 Tuner 1	No Action
2	Preset 2 Tuner 1	No Action
3	Preset 3 Tuner 1	No Action
4	Preset 4 Tuner 1	No Action
5	Preset 1 Tuner 2	No Action
6	Preset 2 Tuner 2	No Action
7	Preset 3 Tuner 2	No Action
8	Preset 4 Tuner 2	No Action
9	Preset 2 Tuner 1	Return to Preset 1 Tuner 1
10	Preset 3 Tuner 1	Return to Preset 1 Tuner 1
11	Preset 4 Tuner 1	Return to Preset 1 Tuner 1
12	Preset 1 Tuner 1	Return to Silence
13	Preset 2 Tuner 1	Return to Silence
14	Preset 3 Tuner 1	Return to Silence
15	Preset 4 Tuner 1	Return to Silence

Default GPIO allocation version 1.30 firmware onwards

7.6   GPIO Input Pin out:

GPIO-0 (pin 18) Gnd to select preset 1, Tuner 1
GPIO-1 (pin 17) Gnd to select preset 2, Tuner 1
GPIO-2 (pin 16) Gnd to select preset 3, Tuner 1
GPIO-3 (pin 15) Gnd to select preset 4, Tuner 1
GPIO-4 (pin 14) Gnd to select preset 1, Tuner 2
GPIO-5 (pin 1)   Gnd to select preset 2, Tuner 2

Common Grounds: pins 2, 3, 4, 11, 12 & 13
+5V Current Limited: pins 24 & 25

8   Web Interface

Using a web browser navigate to the IP address of the ProDAB (default 192.168.0.7)

Default Username & Password:

Sign in as:

Username – admin

Password – 1234
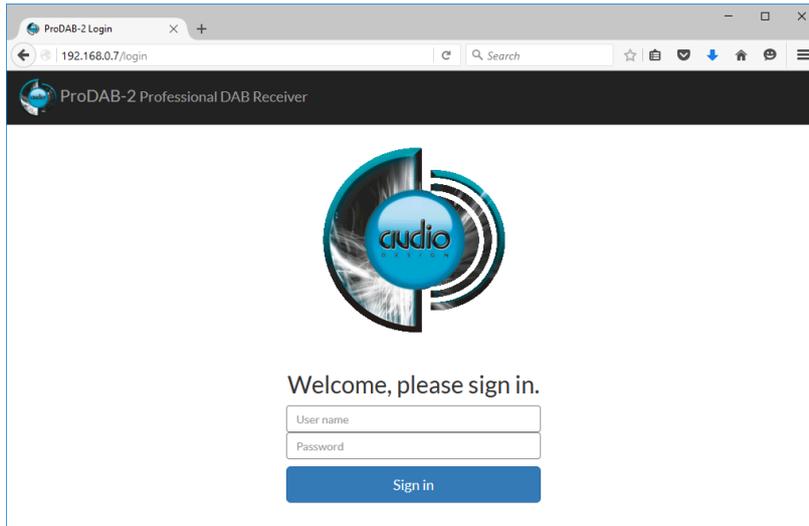
👍 Note that the web interface has been tested with the following browsers: Firefox, Chrome & Internet Explorer version 10 onwards
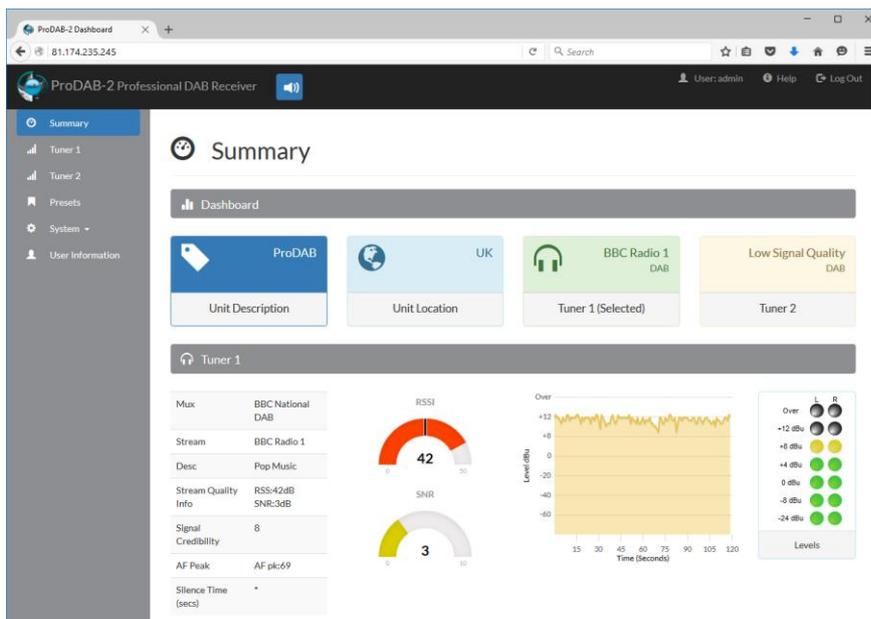
The Summary screen shows information about both tuners on Dual units and Tuner 1 on ProDAB-1 Plus.
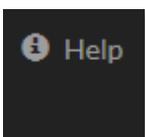
Click here to play audio for currently selected tuner. Note: that when option "STREAMER SOURCE" is set to "Tuner 1 Only" in Engineering menu you can only listen to Tuner 1.

Click here to turn off audio monitor stream.
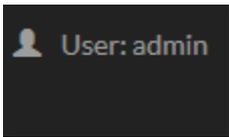
This is the user you are currently sign in as.

This will download an "embedded" copy of the full User Guide as a PDF.
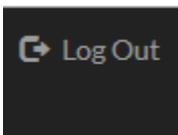
Click here to Sign Out.
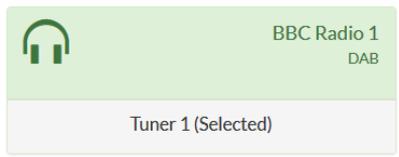
In order to control a Tuner using the web interface, it has to be selected.

9   System Block Diagrams

ProDAB-2 Dual
Independent Mode

ProDAB-2 Dual
Diversity Mode
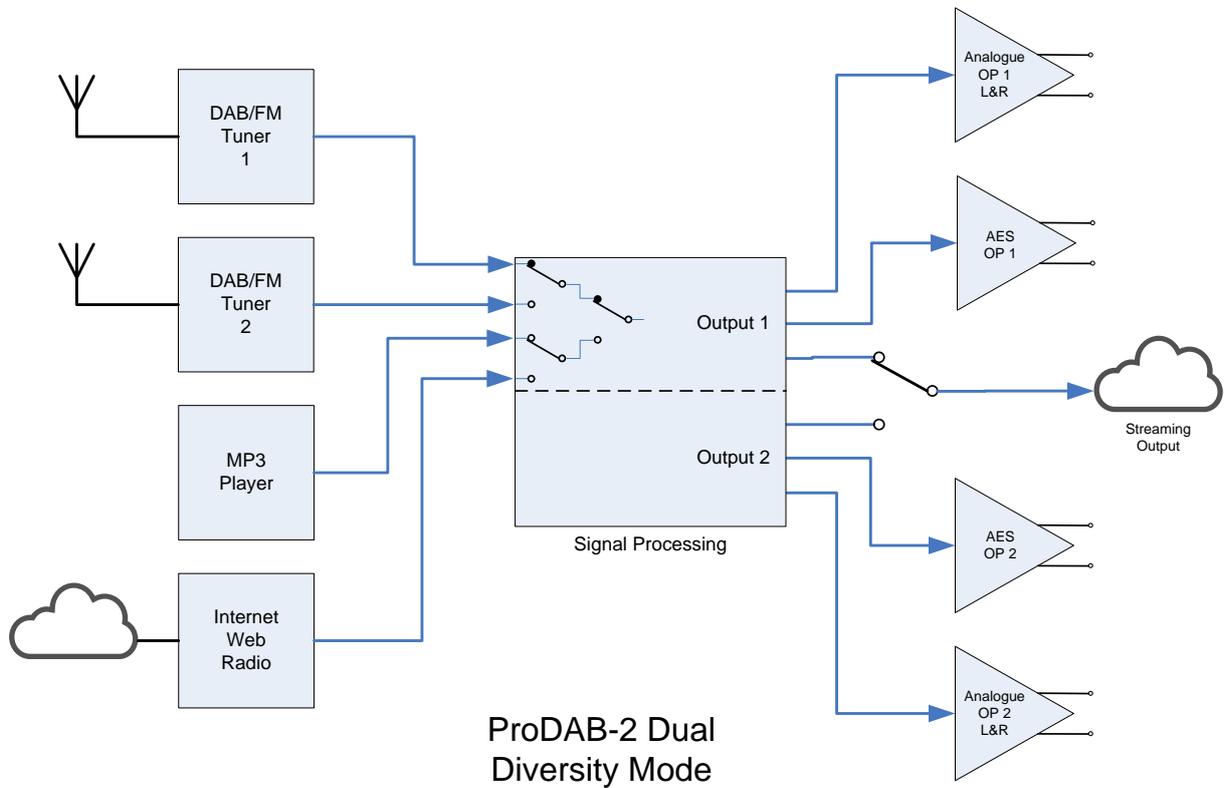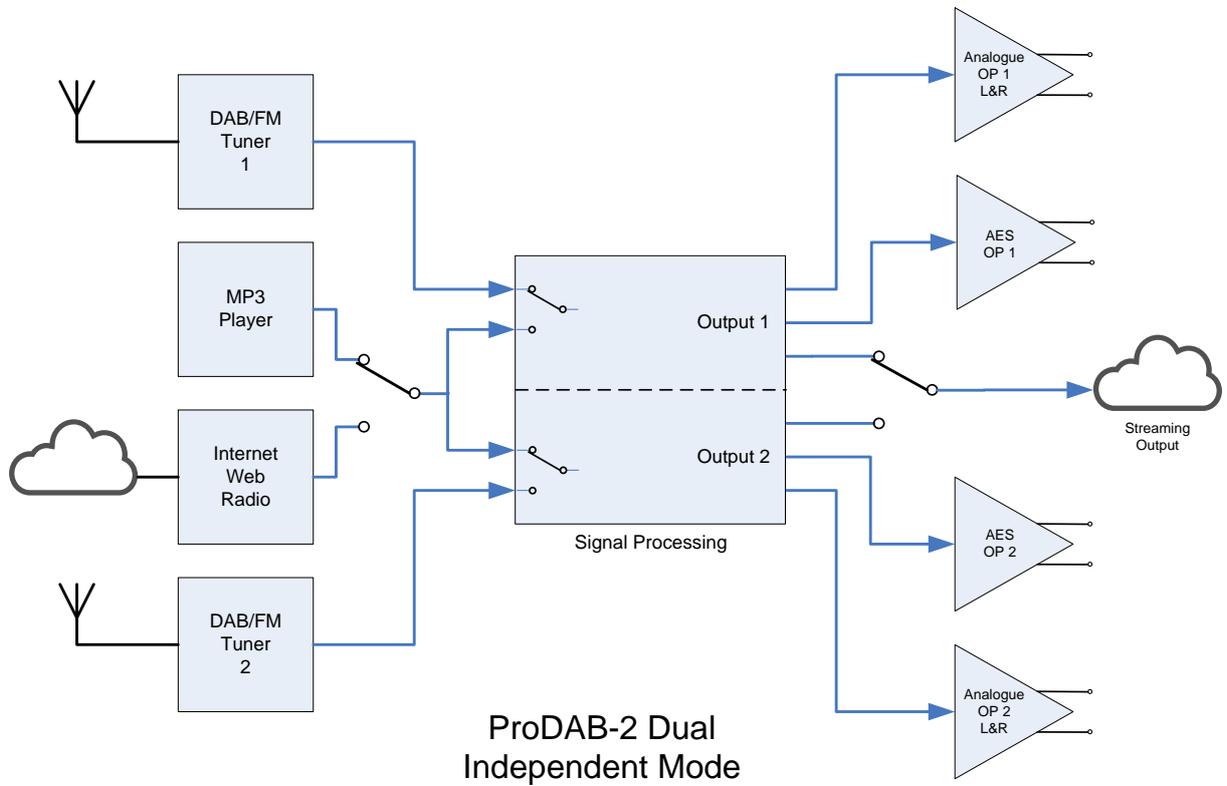
10   Rear Panel

Analogue balanced audio outputs, gain adjustable from 0dBU to +20dBU.

Pin 1 = GND
Pin 2 = + output
Pin 3 = - output

AES3 digital output, sampling rate adjustable via menu to 48Kbps or 96Kbps

Pin 1 = GND
Pin 2 = + output
Pin 3 = - output
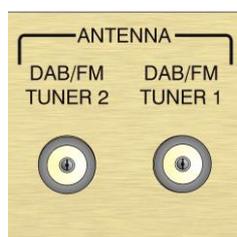
Antenna input for DAB & FM

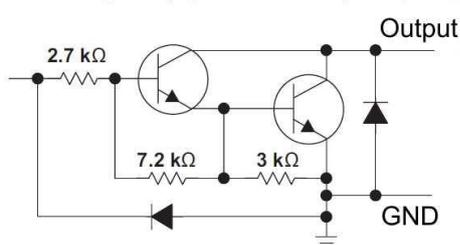F-Type female connector fitted to unit.
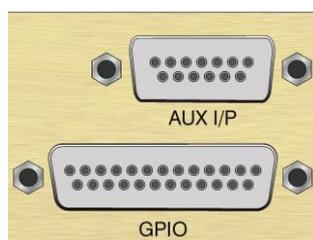
GPIO allocation version 1.30 firmware onwards

Inputs:

GPIO-0 (pin 18)	Gnd to select preset	1
GPIO-1 (pin 17)	Gnd to select preset	2
GPIO-2 (pin 16)	Gnd to select preset	3
GPIO-3 (pin 15)	Gnd to select preset	4
GPIO-4 (pin 14)	Gnd to select preset	5

Outputs **:

GPO-0 (pin 23)	Low = In changeover to MP3
GPO-1 (pin 22)	Low = RDS TA Traffic Flag active
GPO-2 (pin 21)	Low = Mono
GPO-3 (pin 20)	Low = Audio silence detect
GPO-4 (pin 19)	Low = RSSI below threshold

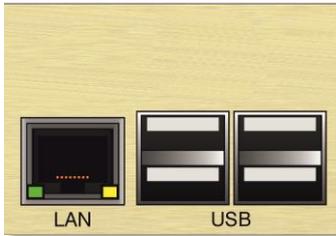**Common Grounds:**   pins 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 & 11
+5V Current Limited: pins 24 & 25

RS232 I/O – ProDAB Production units allows access to operating system console at 115k baud.

Pin 2 = Tx data
Pin 3 = Rx data
Pin 5 = GND

ProDAB Quick Start Guide

RJ45 LAN connector 10/100 auto negotiation MDX

USB Can be used for additional MP3 storage.

IEC Mains inlet – Fuse T3.15A 90/240VAC

Provision for IEC retaining clip and M4 Earth tag

Audio & Design Reading Ltd. Hereby confirm that the ProDAB1 conforms to the requirements of EN50081-1 & EN60950 Provided it is used as described in this manual and in the sections below:

To comply with the EMC Directive EN50081-1 (generic), it is recommended that all-digital input and output cabling be of Belden type 1696A or its exact equivalent. All input/output connectors must be of good quality and be constructed with RF protected covers. All interconnections via cables must carry a full earth shield, which should be connected to the RF shielded covers at all times. Input/output cables must be terminated to comply with the AES/EBU and IEC958 digital audio standards protocol.

This unit is wired so that a technical earth is connected to the chassis via the mains input socket. It is recommended that this connection be made to the mains earth system at all times to minimise the effects of radiated and conducted RF emissions.

Low Voltage Directive EN60950:
There are no serviceable parts within the unit. All repair work must be referred to a qualified electronic engineer or returned to the factory. In the case where the unit contains plug in modules, always switch off the unit before removing or replacing any module.

Audio & Design Reading Ltd does not accept responsibility for non-compliance if the above criteria are not met in full.

WARRANTY:
All Audio & Design products are of the highest quality and designed to give long, trouble free service. Nevertheless they are fully guaranteed for one year from the date of purchase. Provided any faulty equipment is returned, post paid, to Audio & Design or its established Agent by the original purchaser during the relevant period we will repair, or at our opinion replace, entirely free of charge all breakdowns due to faulty workmanship or materials. In keeping with normal practice, breakdowns due to fair wear and tear, misuse, neglect or faulty adjustment by the user, are outside the scope of this warranty.

Warning: Warranty repairs are subject to serial number checking. We reserve the right not to service any equipment whose serial number has in any way, been defaced or altered.

WEEE Directive: The end user must excise due care when disposing of this product at the time it is deemed as waste material.

RoHS: The current status of Audio & Design products can be obtained from
www.adrl.co.uk/Rohs.htm

Audio & Design Reading Ltd practices lead-free manufacturing processes. Lead free solder is used on the surface-mount PCB manufacturing processes and for hand soldering. Printed circuit boards used are immersion tin plated, and as such use no lead.
The manufacturing processes include the assembly of purchased components from various sources. Our products are offered as RoHS compliant, or lead free, only after sufficient evidence is received from the component manufacturers that their components are RoHS compliant. Audio & Design Reading Ltd relies solely on the distributor, or manufacturer of the components for identification of RoHS compliance. Whilst every effort is made to ensure compliance, Audio & Design Reading Ltd makes no warranty, or certification, or declaration of compliance concerning said components.
Audio & Design Reading Ltd defines "Lead Free" as pertaining to any product, which has been manufactured by Audio & Design Reading Ltd using components which have been declared by the manufacturers as "Lead Free". All statements by Audio & Design Reading Ltd of RoHS compliance are based on component manufacturer documentation

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