PULSE

DAB+ / FM Tuner

Model: TU-201
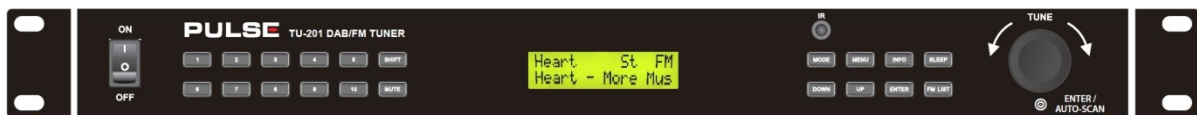
Instruction Manual

www.pulse-audio.co.uk

Safety Information

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

The lightning bolt within a triangle is intended to alert the user to the presence of dangerous voltage levels within the product's enclosure.

This voltage may be of sufficient magnitude to constitute an electric shock risk.

To reduce the risk of electric shock, do not remove cover of this device. There are no user serviceable parts inside. Refer servicing only to qualified service personnel.

The exclamation point within a triangle is intended to alert the user to important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Safety Precautions

- Read these instructions carefully and retain for future reference.
- To allow isolation from the mains supply, the mains plugs must remain accessible when the equipment is in use.
- The equipment must be connected to a three pin earthed mains socket outlet using the mains cord provided.
- Do not expose the equipment to dripping or splashing water and do not place any objects filled with liquids, such as vases on the equipment.
- Do not use the equipment near water or in high humidity areas.
- Do not place any naked flame sources, such as lighted candles, on top of the equipment.
- Install in accordance with the manufacturer's instructions.
- Ensure that the power cord cannot be damaged, once the equipment is installed.
- Only use accessories specified by the manufacturer.
- There are no user serviceable parts within this equipment. Refer all servicing to qualified personnel.
- For installation, mount the equipment securely in a 19" rack, or on a solid flat surface.
- To clean, only use a clean soft cloth. Do not use any detergents or solvents.

Battery Safety

- For the remote control, only use the batteries recommended (2 x AAA, not provided).
- Ensure that the batteries are inserted correctly, observing the plus and minus marks on both the batteries and the compartment.
- Fit a full set of batteries at one time.
- Remove dead batteries from the remote control, or if it is not going to be used for a long time.
- Never mix old and new batteries together, or different types of batteries.
- Never dispose of batteries in a fire, or attempt to recharge ordinary batteries.

Pulse 1U 19" DAB+/FM Tuner

The PULSE TU-201 is a fully featured, 19" rack mounting professional DAB/FM tuner. Designed to provide high quality, reliable performance for all applications including schools, community centres, retail shops and industrial installations.

This unit includes a host of features, along with an impressive list of specifications, which are detailed over the next pages. Please take the time to read this document completely prior to installation of this product. Should you have questions regarding installation or operation of this unit, please contact your Pulse Retailer or Pulse Technical Support.
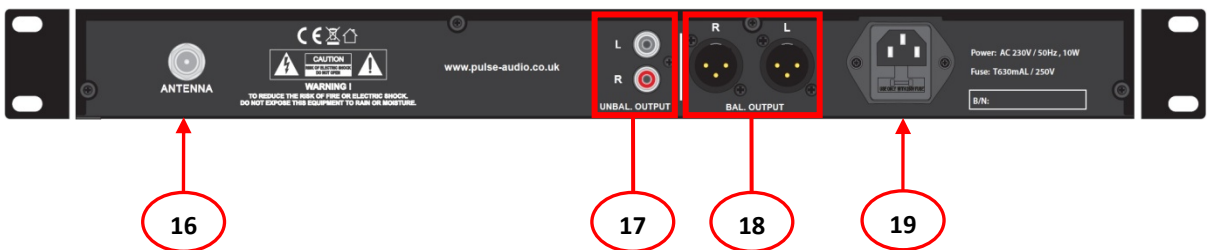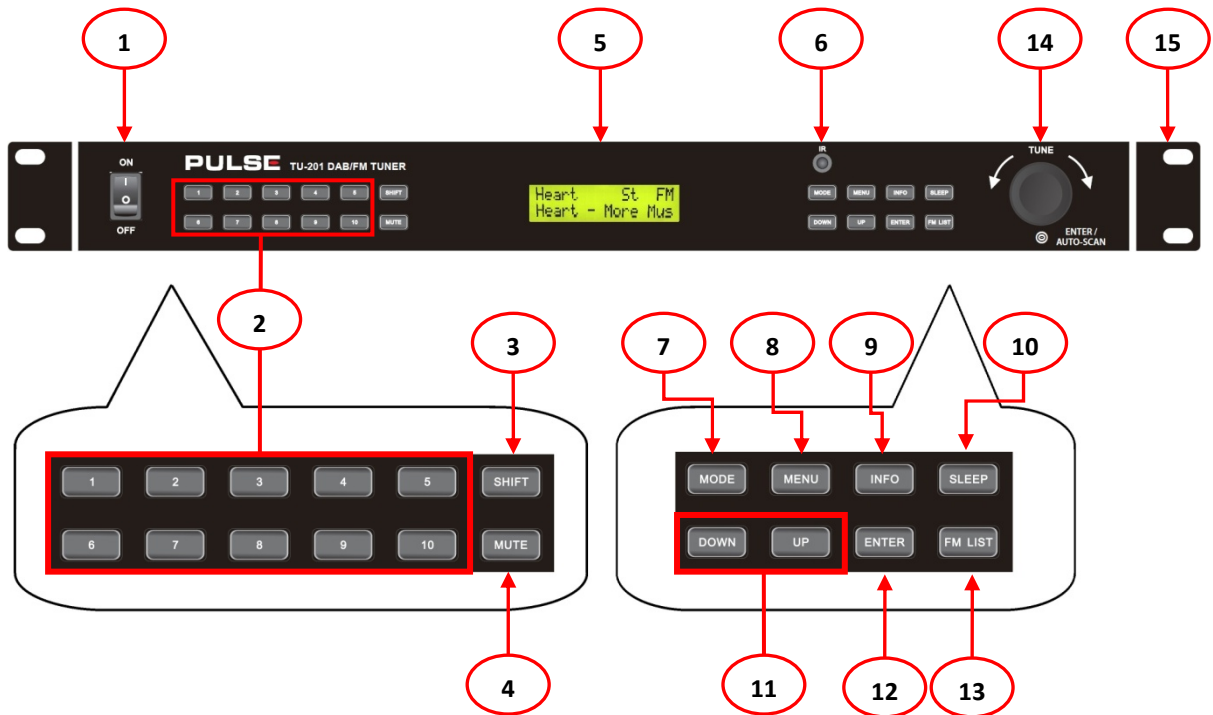
Features

- DAB+ & FM Radio Tuner
- Auto/manual tuning
- 40 Preset memory (20 FM, 20DAB)
- LCD screen
- Radio station display
- Radio Text (scrolling)
- Automatic radio controlled time & date
- Outputs: 2x XLR (L+R), Stereo RCA
- IR remote control (requires 2xAAA batteries)
- 1U 19" Rack mountable with removable rack ears

Included Accessories

- Instruction manual
- IR remote control
- Telescopic antenna
- UK power cable

Connections & Controls

PULSE TU-201 DAB/FM TUNER

```
Heart      St  FM
Heart - More Mus
```

1 2 3 4 5 — SHIFT

6 7 8 9 10 — MUTE

MODE MENU INFO SLEEP

DOWN UP ENTER FM LIST

TUNE

ENTER / AUTO-SCAN

ANTENNA

WARNING !
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

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L R
UNBAL. OUTPUT

R L
BAL. OUTPUT

Power: AC 230V / 50Hz, 10W
Fuse: T630mAL / 250V
B/N:

PULSE
TU-201 DAB / FM

Number	Item	Decription
1	Power Switch	Power on/off switch for tuner.
2	Memory Presets	Quick access to stored DAB/FM radio stations 1-10.
3	Shift	Used to access memory pre-sets 11-20 (use SHIFT + 1-10).
4	Mute	Mutes & un-mutes the audio output.
5	Display	2 Row, 32 character LCD display.
6	IR Sensor	Infrared sensor for remote control.
7	Mode	Change between DAB and FM frequency modes.
8	Menu	Access the main menu screen. (see fig.2)
9	Info	Toggles through displayed information. (see fig.1)
10	Sleep	Set a countdown time to put unit into sleep mode.
11	Down / Up	(FM mode) Press to decrease / increase the receiving frequency by 0.05MHz. (DAB mode) Press to go down / up to view next available DAB station.
12	Enter	Use this button to enter a menu function or OK/select a setting.
13	FM List	Use this button to access the FM stations found by the auto-scan.
14	Jog Wheel	Multi-function jog wheel, used for tuning, auto-scans & selecting.
15	19" Rack Ears	Allows unit to be mounted into a 19" rack or removable for stacking.
16	Antenna Connection	F Type screw terminal for supplied telescopic antenna. (For weak signal areas it is advised for an external aerial to be connected).
17	RCA Outputs	Unbalanced audio signal (left and right) outputs suitable for most audio equipment.
18	XLR Outputs	Balanced audio signal (left and right) outputs for professional audio equipment.
19	Power Input	IEC socket for supplied power lead.
20	IR Remote	Full function IR remote control.

Functions & Settings

Change Between DAB & FM Modes:

1. To change receiving mode from DAB to FM, simply press the **MODE** button.
2. The LCD screen will display the current selected mode.

Tuning In DAB Mode:

Initial DAB Tuning.

1. To carry out initial DAB tuning press & hold the **Jog Wheel** on the front of the unit for 2 seconds, or press the **AUTO-SCAN** button on the remote.
2. The AUTO-SCAN function will search and store all available DAB radio stations.
3. To store any new DAB stations, repeat step 1 of initial DAB tuning.

Changing between DAB Stations.

1. To change between DAB stations turn the **Jog Wheel** left/right or press the **DOWN** or **UP** buttons on the remote, this will scroll through the stored DAB stations.
2. Once desired station is displayed, either, press the **Jog Wheel** or the **ENTER** button on the remote.
3. The DAB station will now tune itself in for listening.

Note: If signal is too weak "Not available" will be displayed on the LCD screen.

Tuning In FM Mode:

Manual Tuning.

1. To manually tune / search for a desired radio station you can turn the **Jog Wheel** left or right to decrease or increase the reception frequency by 0.05MHz.
2. Alternatively you can press the **DOWN** or **UP** buttons to decrease or increase the reception frequency by 0.05MHz.

Auto Tuning.

1. To automatically tune to the next available radio station press & hold either the **DOWN** or **UP** buttons.
2. The unit will then automatically search for the next available station.

Auto Scan.

1. This function will automatically tune into and store the available FM radio stations into the **FM List** button.
2. To activate the Auto Scan function press & hold the **Jog Wheel** on the front of the unit for 2 seconds, or press the **AUTO-SCAN** button on the remote.
3. To select a stored radio station press the **FM List** button then turn the **Jog Wheel** left/right or press the **DOWN** or **UP** buttons to scroll through the stored FM stations.
4. Once desired station is displayed, either, press the **Jog Wheel** or the **ENTER** button

Storing A Memory Pre-Set:

Storing in memory button locations 1-10.

1. Tune into desired DAB or FM radio station.
2. Hold down the desired memory button (**1**-**10**) until "Preset # Saved" is displayed on the LCD screen.

Storing in memory button locations 11-20.

1. Tune into desired DAB or FM radio station.
2. Press the **SHIFT** button to select to access locations 11-20, then hold down desired memory button **1**-**10** (e.g. SHIFT+1=11, SHIFT+10=20) until "Preset # Saved" is displayed on the LCD screen.

Selecting A Memory Pre-Set:

Selecting memory pre-set buttons 1-10.

1. Press the desired memory button (**1**-**10**), the stored pre-set station will now be tuned in and displayed on the LCD screen.

Selecting memory pre-set buttons 11-20.

1. Press the **SHIFT** button, "Preset (11-20)" will be displayed on the LCD screen.
2. Press the desired memory button **1**-**10** (e.g. SHIFT+1=11, SHIFT+10=20), the stored pre-set station will now be tuned in and displayed on the LCD screen.

Change Displayed Information:

1. Use the **INFO** button to toggle through displayed information of the received station.
   See the below table for what information can be displayed in each mode.

INFO Button Table	
DAB	**FM**
Radio Text	Radio Text
Program Type	Program Type
Region	Signal Strength
Time & Date	Time & Date
Frequency	
Audio Type / Quality	
Signal Strength	
Signal Error	

Menu Functions & Settings

Use the below flow diagrams to navigate the menu system of the DAB/FM tuner

DAB Mode Menu

Menu flow diagram ↔						
Station Scan	Full Scan	Manual Tune				
Main Menu **Time Setup**	Set Clock	Set Date	Auto Update	Set 12/24 Hour		
Sleep	Sleep Off	Sleep 15	Sleep 30	Sleep 45	Sleep 60	Sleep 90
Prune Station						
Station Order	Multiplex	Alphanumeric	Active			
Factory Reset						
SW Version						

FM Mode Menu

Menu flow diagram ↔						
Audio Setting	Stereo/Mono*	Mono Only		* Depending on signal strength		
Main Menu **Time Setup**	Set Clock	Set Date	Auto Update	Set 12/24 Hour		
Sleep	Sleep Off	Sleep 15	Sleep 30	Sleep 45	Sleep 60	Sleep 90
Factory Reset						
SW Version						

1. To access the menu system, press the **MENU** button on either the front panel or the remote.
2. Use the **Jog Wheel** left/right or press the **DOWN** or **UP** buttons to scroll through the menu options.
3. Once the desired option is displayed, either press the **Jog Wheel** or the **ENTER** button to select it.
4. To step back through the menu system press the **MENU** button.
5. To exit the menu system, either step back through the menu system or leave it for 5 seconds.

DAB Menu:

Station Scan.

- This is used to scan for available DAB stations.
- You can carry out either a **Full Scan** for all stations or a **Manual Tune** to search for a specific DAB frequency.

Time Setup.

- This is used to set the in-built clock time & date.
- You can set the **Time** & **Date** manually, or you can set the unit to **Auto Update** the time & date from the radio signal.

Sleep.

- This is used to set the **SLEEP** timer to put the Tuner into **SLEEP** mode
- In **SLEEP** mode the Tuners outputs are switched off, and the display will show the Time & Date. (the buttons will stay illuminated)
- To take to Tuner back out of **SLEEP** mode, press the **SLEEP** button.

Prune Station.

- This is used to remove any unavailable DAB stations from the list of DAB stations stored by the previous Auto Scan.

Station Order.

- This is used to set what order the DAB stations are listed in.
- **Multiplex** – The DAB stations are sorted by their multiplex channel numbers.
- **Alphanumeric** – The DAB stations are sorted by their station names.
- **Active** – The DAB stations that are currently available are at the beginning of the list.

Factory Reset.

- This is used to reset the Tuner to its original settings.

SW Version.

- This displays the Software Version of the Tuner (e.g. ET-393 Ver.13)

FM Menu:

Audio Setting.

- This is used to set the tuner to **Stereo/Mono** or **Mono Only** modes for FM signals.
- **Stereo/Mono** – The Tuner will output a stereo audio signal if the FM stations signal is strong enough, if the signal is too weak the Tuner will revert to a mono audio output.
- **Mono Only** – The Tuner will output only a Mono audio signal.

Time Setup.

- This is used to set the in-built clock time & date.
- You can set the **Time** & **Date** manually, or you can set the unit to **Auto Update** the time & date from the radio signal.

Sleep.

- This is used to set the **SLEEP** timer to put the Tuner into **SLEEP** mode
- In **SLEEP** mode the Tuners outputs are switched off, and the display will show the Time & Date. (the buttons will stay illuminated)
- To take to Tuner back out of **SLEEP** mode, press the **SLEEP** button.

Factory Reset.

- This is used to reset the Tuner to its original settings.

SW Version.

- This displays the Software Version of the Tuner (e.g. ET-393 Ver.13)

Technical Information

General Specification	
Aerial Input	75Ω Unbalanced antenna
Input Connector	F Type
Audio Outputs	2x Balanced XLR (L+R), Unbalanced stereo RCA
Power consumption	10W
Power supply	AC 230V, 50Hz
Dimensions (WxHxD)	430 x 44x 195mm (excl. 19" rack ears)
Weight	2.34kg

FM - Electrical Performance		
Parameter	**Value**	**Unit**
FM Tuning Range	87.5 - 108	MHz
Sensitivity	10	µV
Audio Output Voltage	400	mV rms
FM Step Freq.	50	kHz

DAB - Electrical Performance		
Parameter	**Value**	**Unit**
DAB Tuning Range	174.928 - 239.2	MHz
Adjacent Chanel Selectivity	≥31	dB
Far-off Selectivity	≥49	dB
Sensitivity	-97	dB

Compliance

INFORMATION ON WASTE DISPOSAL FOR CONSUMERS OF ELECTRICAL & ELECTRONIC EQUIPMENT AND BATTERIES

When this product has reached the end of its life it must be treated as Waste Electrical & Electronics Equipment (WEEE). Any WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used. Contact your local authority for details of recycling schemes in your area, or contact PULSE directly via www.pulse-audio.co.uk

Discharged batteries also must not be placed in with household waste. Always separate them for separate collection. Many retailers of electrical equipment have a collection container for the disposal of waste batteries.

Warranty

Pulse products are warranted, by Pulse, against manufacturer defects for a period of one year from the original date of purchase. This warranty is limited to manufacturer defects, in either materials or workmanship. PULSE, or any other worldwide divisions of Premier Farnell PLC, is not responsible for any consequential or inconsequential damage to any other component, structure or the cost of installation or removal of said items. Defective items should be returned to the retailer from whom they were originally purchased.

This warranty will not cover damage due to improper use or items damaged by weather. Batteries are covered by a 90 day warranty from date of purchase.

For questions or specific information regarding warranty replacement or repair, please contact:

PULSE
www.pulse-audio.co.uk