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▶ **Primare T21 Tuner User Guide**

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**EEC:** This product has been designed and type-tested to comply with the limits set out in EN55013 and EN55020.

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# ► Introduction

**Welcome to the Primare T21 Tuner! This chapter introduces you to its key features, and explains how you can use them to achieve superb sound quality from your FM reception.**

## WELCOME TO THE T21 TUNER

The T21 is an advanced tuner for sophisticated systems that provides Primare performance and build quality with an intuitive user interface. Every component of the T21 Tuner has been designed to achieve the highest possible audio performance.

### **Enjoy FM reception at its best**

The T21 Tuner uses Primare's proven design approach to guarantee the highest quality sound across the entire FM bandwidth. With a good aerial, FM broadcasts should give you close to CD quality sound.

### **Provides the latest Radio Data System features**

The Primare T21 also provides all the benefits of the Radio Data System or RDS, to display the station name, program type, and text information from the tuned station.

### **No compromise power supply for the highest possible performance**

The T21 has three separate, regulated power supplies for ultra-low noise operation. The result is extremely high signal to noise ratio, allowing you to take full advantage of the dynamic range available from FM broadcasts.

### **Careful design for mechanical stability**

As with all Primare units, the T21 Tuner is housed in an alloy, heavy gauge steel chassis, which provides strength, rigidity, and screening, while being effective at damping vibrations from external sources. The front panel design isolates the display circuitry from the audio circuitry to avoid interference.

### **Intuitive user interface**

In keeping with the philosophy of the Primare range of systems, the T21 can be controlled through a very simple and intuitive interface, designed so that it will not distract you from the pleasure of listening to music on your system.

In fact most of the features of the T21 can be accessed through just nine front panel push buttons. Alternatively, some of the functions of the T21 can be controlled by the optional C31 Remote Control, along with the other Primare components in your system.

## USING THE T21 TUNER WITH OTHER PRIMARE PRODUCTS

Although the T21 Tuner is flexible enough to work with virtually any other equipment you have in your system, it is ideally suited to use with the Primare A30.1 Integrated Amplifier. A particular benefit of using the T21 with a Primare preamplifier is that you can control your entire system with a single remote control, to give you a fully integrated system with the simplest possible user interface.

## TECHNICAL SPECIFICATION

|                                  |                                |
|----------------------------------|--------------------------------|
| Tuning range (50kHz steps)       | 87.5 – 108.0MHz                |
| Tuning range Japan (50kHz steps) | 75.5 – 90.5MHz                 |
| Usable sensitivity: Mono         | 0.9 $\mu$ V, 75 $\Omega$ , DIN |
| Stereo                           | 20 $\mu$ V, 75 $\Omega$ , DIN  |
| Capture ratio                    | 2.0dB                          |
| Image rejection ratio            | 100dB                          |
| IF Rejection Ratio               | 100dB                          |
| Signal-to-noise ratio: Mono      | 76dB                           |
| Stereo                           | 70dB                           |
| Alternate channel attenuation    | 90dB, IHF                      |
| AM suppression ratio             | 50dB                           |
| Subcarrier product rejection     | 76dB                           |
| THD: Mono                        | 0.05% (Wide)                   |
| Stereo                           | 0.15% (Wide)                   |

|                                  |                                 |
|----------------------------------|---------------------------------|
| Frequency response               | 20Hz – 15KHz, +0.3/-0.8dB       |
| Stereo separation                | 43dB at 1kHz (Wide)             |
|                                  | 40dB at 70 – 10kHz              |
| Output voltage                   | 0.775V                          |
| Output impedance                 | 600 $\Omega$                    |
| Muting level                     | 18dBf, 2.2 $\mu$ V, 75 $\Omega$ |
| Antenna impedance                | 75 $\Omega$                     |
| <b>Functions:</b>                |                                 |
| Antenna inputs                   | 1                               |
| IF Narrow/Wide, RDS, Stereo/Mono |                                 |

# ► Using the T21 Tuner

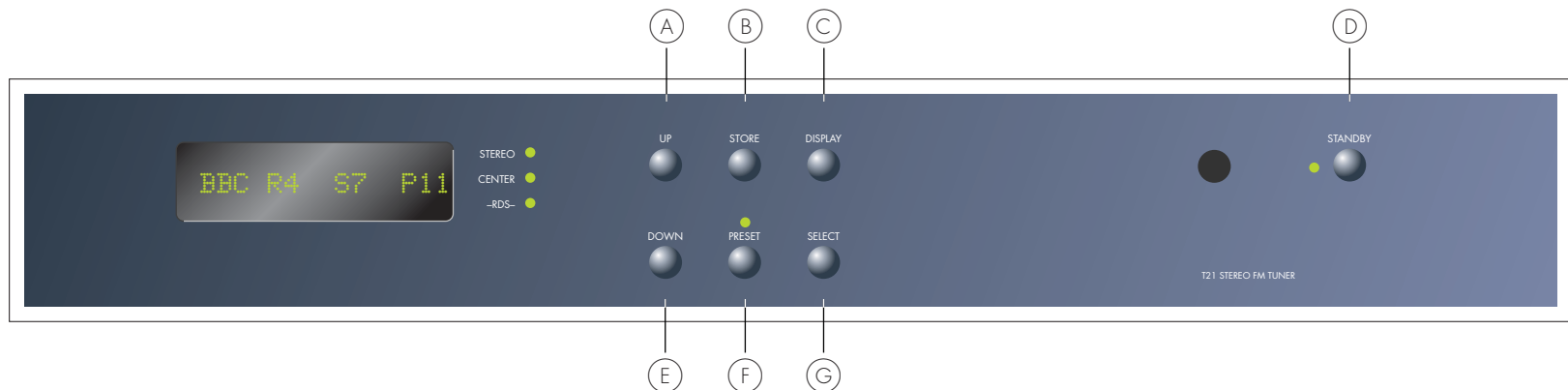
This chapter explains how to operate the T21 Tuner, using either the front panel push button controls or the C31 Remote Control.

## FRONT PANEL CONTROLS

The main functions of the T21 Tuner can be accessed using the seven front panel push buttons, and information about its operation is displayed on the front panel's display:

- Ⓐ The **UP** button scans or steps up in frequency or preset station.
- Ⓑ The **STORE** button stores a chosen frequency to memory.
- Ⓒ The **DISPLAY** button scrolls through the various display settings.

- Ⓓ The **STANDBY** button switches the T21 to standby, or brings it out of standby.
- Ⓔ The **DOWN** button scans or steps down in frequency or preset station.
- Ⓕ The **PRESET** button switches the T21 to preset mode.
- Ⓖ The **SELECT** button toggles between IF, BLEND, and MUTE status.



## SWITCHING ON AND OFF

### To switch on

- Use the switch under the left-hand edge of the front panel.

During normal operation you can leave the T21 switched on and in standby mode.

### To switch to standby

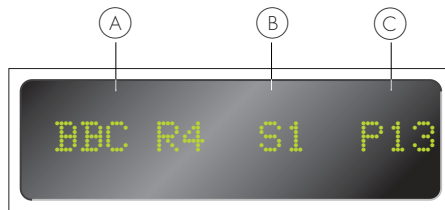
- Press the **STANDBY** button on the front panel.

### To switch on from standby

- Press the **STANDBY** button on the front panel, or the **CH▲** or **CH▼** button on the C31 Remote Control.

## FRONT PANEL DISPLAY

The display on the front of the T21 Tuner is controlled by the **DISPLAY** button and allows you to see various details about the broadcast:



- (A) Station name.
- (B) Signal strength.
- (C) Preset number (if assigned).

Each time you press the **DISPLAY** button, the display will step between the following options:

| Display option | Example          |
|----------------|------------------|
| Station Name   | BBC R4 S8 P11    |
| RadioTEXT      | The Easter Story |
| Frequency      | 93.300M S8 P11   |

## TUNING TO A STATION

When the PRESET indicator is off you can use the **UP** and **DOWN** buttons to engage scan or manual tuning up and down the frequency band.

### To start tuning

- Press the **PRESET** button until the PRESET indicator extinguishes.

### To scan tune

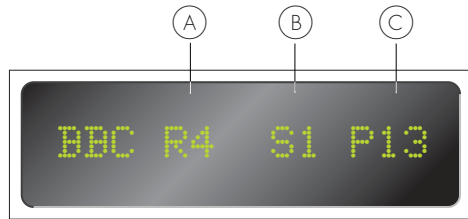
By pressing the **UP** or **DOWN** button for more than one second and then releasing, the tuner will scan for the first strong signal from a radio station where it will stop. Press and hold either the **UP** or **DOWN** button again to continue searching.

### To manually tune

By pressing on the **UP** or **DOWN** buttons rapidly, you can perform manual tuning up or down the frequency band for precise tuning to a specific frequency. With each successive press of the **UP** or **DOWN** buttons, the T21 will take 0.05MHz steps up or down.



While you are searching for a specific frequency the front panel display shows the frequency and signal strength for the antenna (from 0-9):



- Ⓐ Station name.
- Ⓑ Signal strength.
- Ⓒ Preset number.

In addition to the display there are three indicators:

- The STEREO indicator lights up when the T21 is receiving a stereo broadcast.
- The CENTER indicator lights up when the T21 is tuned to the exact frequency of the transmitter.
- The -RDS- indicator lights up when a station broadcasting RDS data is received.

## SELECTING A PRESET STATION

When the PRESET indicator is lit you can use the **UP** and **DOWN** buttons to search through your stored stations.

### To enter Preset mode

- Press the **PRESET** button until the PRESET indicator lights up.

### To store a station as a preset

The Primare T21 Tuner allows you to store up to 30 preset stations, called P01 to P30, so that you can select them immediately from the front panel or from the C31 Remote Control.

- Tune to the radio station you wish to enter as a preset.
- Press the **STORE** button on the front panel.

The display will indicate the next available preset number by flashing digits, eg "P12".

- If you accept the suggested preset number, press the **STORE** button again.

The station will now be stored with that number and the preset digits will stop flashing.

If you want to allocate a different preset number:

- Press the **STORE** button followed by either the **UP** or **DOWN** buttons, until the desired preset number appears flashing in the display.

- Press the **STORE** button a second time.

The station will be stored with that number.

#### To select a preset station

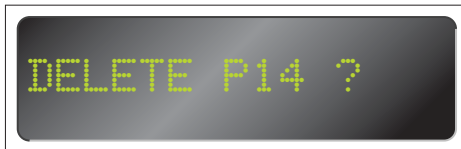
- Select the preset mode by pressing the **PRESET** button so that the indicator lights up.
- Use either the **UP** or **DOWN** buttons on the front panel or the **CH▲** or **CH▼** keys on the C31 Remote Control to search for the desired preset.

The preset number will be shown on the display.

#### To remove a preset station

- Select the preset station you want to remove.
- Press the **STORE** button followed by the **PRESET** button.

The display will show:



- Press the **STORE** button again.

The selected preset is removed from memory.

# ► Advanced use

**This chapter explains how to use the more advanced features of the T21 Tuner, which you can access from the front panel buttons.**

## RDS DATA DISPLAY

RDS, or Radio Data System, is the system by which useful information can be transmitted to a tuner or receiver. Many stations now transmit this text information along with their broadcasts. It typically includes the station name, programme content type, and RadioTEXT.

If the station you have tuned to transmits RDS data, your T21 Tuner will automatically show the station name (limited to eight characters) when its preset is used:



Other RDS information, known as RadioTEXT, can also be received by the T21 Tuner. This might include useful information about the presenter, station or programme you are listening to. For example, BBC Radio 1's RadioTEXT gives information about the presenter and programme, eg John Peel - Tonight in Session etc.

## To view RadioTEXT

- Press the **DISPLAY** button on the front panel.

The display will now show **RadioTEXT** if the station tuned to supports this.

Pressing **DISPLAY** again returns the display to the RDS station name and frequency or the manually entered name.

If the station is not transmitting RDS data, then just the station frequency will be shown. However the T21 Tuner also allows you to enter a station name to make it easier to identify which station is stored in the memory preset.

## To manually store a station name

The Primare T21 Tuner allows you to enter a station name (up to eight characters) to make it easier to identify which station is stored in the memory preset.

- Select the preset station that you want to name.
- Press the **STORE** button on the front panel.

The display will change to show the preset number flashing.

- Press the **DISPLAY** button.

The first position on the 16-digit display will flash.

- Use the **UP** and **DOWN** buttons to select the first character and press the **DISPLAY** button to store it.

The cursor will move forward to the next position on the display.

- Use the **UP** and **DOWN** buttons to select the next character, and press the **DISPLAY** button again to store it.

Continue until the station name is complete.

- Press the **STORE** button to store the completed name.

There are 69 characters available to use in the sequence: 0–9, punctuation, A–Z, and a–z.

If a manually entered name is stored to an RDS station, the transmitted RDS name will not be displayed. If you want to show the RDS name again, you will have to delete the manually entered name first, as follows.

#### To delete a stored name

- Press the **STORE** button.

The display will change so that the preset number is flashing eg "P14".

- Press the **DISPLAY** button.
- Press the **STORE** button again to delete the name.

#### ADJUSTING THE IF/BLEND

The Primare T21 Tuner allows you to adjust the Intermediate Frequency (IF) control and the Blend mode of the tuner.

Adjusting the IF mode enables you to choose between two IF settings: WIDE and NARROW. For the best possible quality sound with strong signals select **IF WIDE**. To remove interference between stations that are very close to each other in frequency select **IF NARROW**.

Adjusting the BLEND mode enables you to choose between two BLEND settings: ON and OFF. You can reduce noise and hiss on remote or weak stations by choosing **BLEND ON**. However, this will be at the expense of reduced stereo separation, so for strong signals choose **BLEND OFF**.

#### To adjust the Intermediate Frequency

- Press the **SELECT** button on the front panel.

The display will show the current IF status; for example:



- Press the **UP** or **DOWN** buttons to change between **IF WIDE** and **IF NARROW**.

### To adjust the Blend

- Press the **SELECT** button on the front panel twice.

The display will show the current BLEND setting; for example:



- Press the **UP** and **DOWN** buttons to choose between **BLEND ON** and **BLEND OFF**.

### ADJUSTING THE MUTE MODE

The Primare T21 Tuner allows you to switch between Stereo mode with Muting (Mute on) and Mono mode with Muting off (Mute off). Muting suppresses stations that have too weak a signal to be received well. With Muting switched off, even very weak signals may be heard. As these will be too weak for stereo reception, Mono is activated automatically.

### To change the Mute mode

- Press the **SELECT** button on the front panel three times.

The display will show the current MUTE mode; for example:



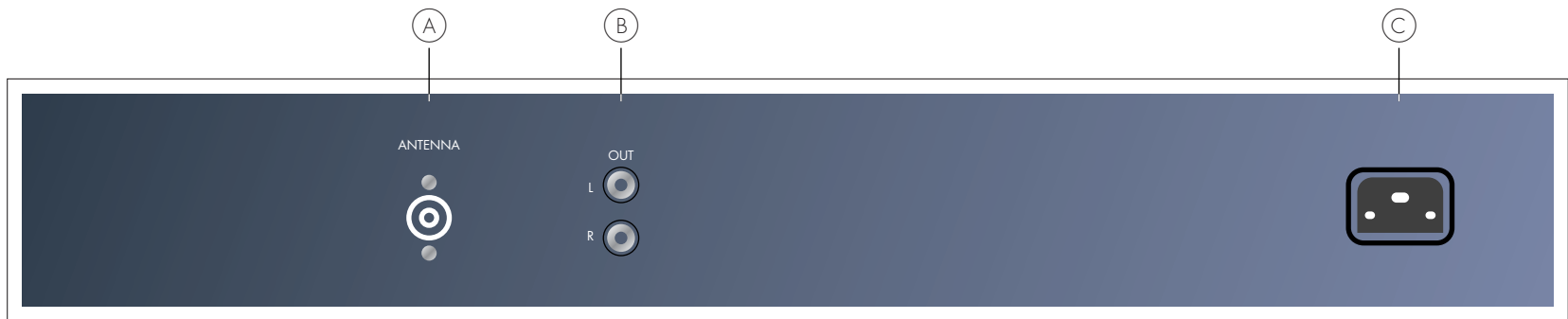
- Use the **UP** and **DOWN** buttons to change between **MUTE OFF MONO** and **MUTE ON STEREO**.



# ▶ Connecting the T21 Tuner

**This chapter explains how to connect the T21 Tuner to other components in your system, using the connections on the back panel.**

## BACK PANEL CONNECTIONS



- Ⓐ Antenna connection.
- Ⓑ Analogue audio outputs.
- Ⓒ Mains power input.

## POWER CONNECTION

**Warning:** Before connecting power, check that the required supply voltage indicated on the back panel, corresponds to your local AC supply. If a different voltage is stated on the type plate, do not connect the tuner to the mains power, and seek advice from your dealer.

Connect the mains power using the enclosed mains cable

**Note:** Always disconnect the tuner from the mains power before connecting or disconnecting any of the cables.

## ANTENNA CONNECTION

For FM reception a suitable VHF antenna or VHF cable signal should be connected to the socket marked Antenna. You are advised to use a high-quality, low-loss coaxial cable. Cables which have a solid screen will give superior performance.

## AUDIO OUTPUTS

The T21 provides stereo phono connections for connection to a conventional stereo amplifier.



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