66

FM TUNER

INSTRUCTION BOOK

QUAD

Brief operating Instructions

The 66 FM tuner is designed to work only with the 66 preamplifier *remote control panel* .

Plug the supplied AC power supply lead and signal lead into the *Quad 66 preamplifier* and *66 FM tuner* (also an aerial).

- Switch *on*.

- Press *radio* on the Quad 66 remote control panel.

- Choose the station preset number using the *track* < > buttons.

- To tune a station press *search* < > to start autoscan. Keep pressing until the required station is found then press *store* for about 5 seconds to put it into the tuner memory.

- Switch off using the remote control *standby* function.

- For other features and functions refer to the main instruction book text.

CONTENTS

INTRODUCTION

The Quad 66 FM is a high quality FM (VHF) tuner designed to complement the Quad 66 series and is fully remote controlled via the 66 preamplifier control panel. Self search station tuning is employed and up to 19 stations can be stored into the tuner memory. When the tuner is switched on it returns to the last selected preset station in use when the tuner was switched off.

The display (LCD) shows the preset position number, the tuned frequency, the signal strength and whether the tuner is in the stereo or mono mode.

Performance of the Quad 66 FM tuner is as accurate as it is possible to achieve by careful design, selection of components and rigorous test procedures.

GUARANTEE

The Quad 66 FM tuner is guaranteed for twelve months from the date of purchase. Within this period we undertake to supply replacement parts free of charge provided that the failure was not caused by misuse, accident or negligence. Return freight and third party labour costs are not covered unless by local agreement. Within the UK this guarantee does not limit your statutory rights. A separate guarantee card is not supplied and your guarantee begins on the day of purchase.

SERVICE

If the tuner needs servicing it should be returned to the supplier, the distributor for the country of purchase or Quad Electroacoustics Ltd. Please enclose a brief note giving your name and address and the reason for returning it.
Quad offer a same day service from Monday to Friday except for Bank holidays. Please contact us to make an appointment.

How to Find us
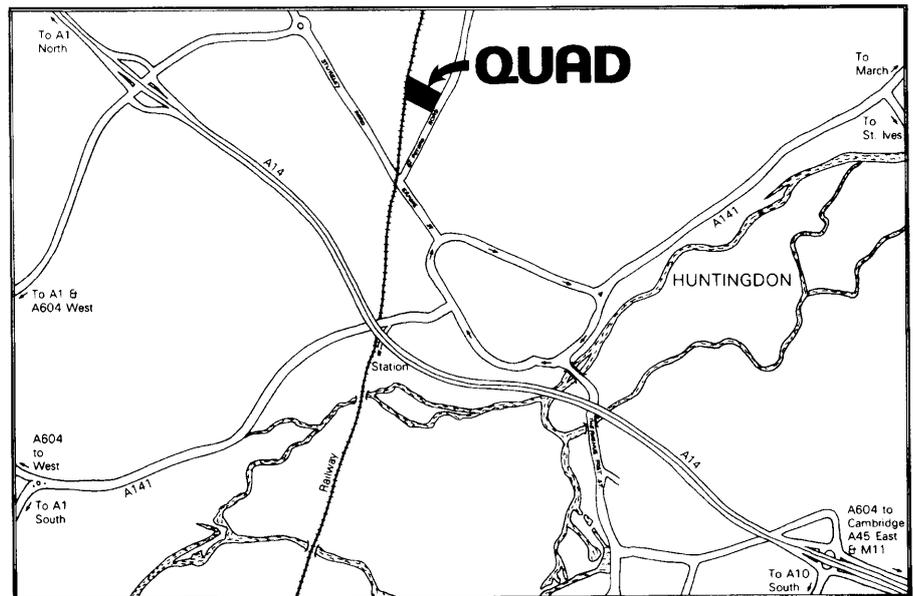
Important

Retain the original carton and internal packing in case the tuner has to be returned for service.

ACCESSORIES SUPPLIED

AC supply lead 0.5m long	Type No. QSPESSB
Signal lead 0.5m long	Type No. QP2P2SA
Coaxial aerial plug (75Ω)	Type No. PPL734A
Balun transformer (75Ω - 300Ω)	Type No. PP602BC
	(optional for some overseas markets)

INSTALLATION

Checking the AC Power Supply

The rating plate on the back of your tuner shows the AC supply voltage for which it is set. If your AC supply is different from that shown, ask your dealer to change the voltage setting for you.

Connecting to the AC Power Supply

The tuner is supplied with a 0.5m long AC supply lead already fitted with standard 3-pin Euro connectors for connection between the 66 FM tuner **AC power in** and the **AC power out** socket fitted on the back of current Quad equipment. For connection to other equipment, or direct to the mains supply, your dealer can supply a longer lead to which a suitable plug should be fitted, as explained below:-

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT - Fitting a mains plug.

The wires in the mains lead are coloured:

**Brown = Live   Blue = Neutral   Green/Yellow = Earth**

The **Brown** wire must be connected to the terminal marked L or coloured Red. The **Blue** wire must be connected to the terminal marked N or coloured Black. The **Green/Yellow** wire must be connected to the terminal marked E or coloured Green or Green/Yellow.

Note

The tuner must be protected by a 3A fuse when a 13A plug is used, or if another type of plug is used, by a 5A fuse either in the plug or adaptor, or at the distribution board. If in doubt consult a qualified electrician.

AC Power Out

The tuner is fitted with an unswitched **AC power out** socket for feeding other units in the system. The Quad 66 CD player and Quad power amplifiers are provided with the appropriate interconnecting cables.
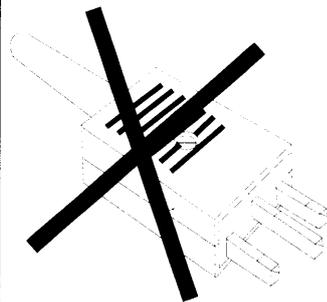
IMPORTANT

Do not use unshrouded IEC connectors with this equipment.

These can be incorrectly inserted into moated AC power outlet sockets, possibly causing a safety hazard.

Aerial

The performance of an FM tuner depends upon the quality and strength of the signal supplied via the aerial. Optimum signal to noise ratio (lowest hiss) will be achieved with an aerial input signal of between 1 mV and 100 mV, but not in excess of 500 mV.

A good aerial will always give the best results and your local aerial specialist or Quad dealer will be able to advise on which aerial system is best for your area. In most cases a correctly orientated external multi-element array will prove most suitable.

The tuner is designed to operate from standard 75Ω coaxial cable. 300Ω ribbon cable should only be used with a correctly designed balun transformer (supplied for some overseas markets). Available from Quad, part number PP602BC.

Positioning the Tuner

The tuner can be positioned free-standing or stacked with other components. Never place it in persistent direct sunlight or near any heat source.

The tuner should not stand directly on top of a high output power amplifier which generates a substantial amount of heat.

AC power and signal connections for typical QUAD system
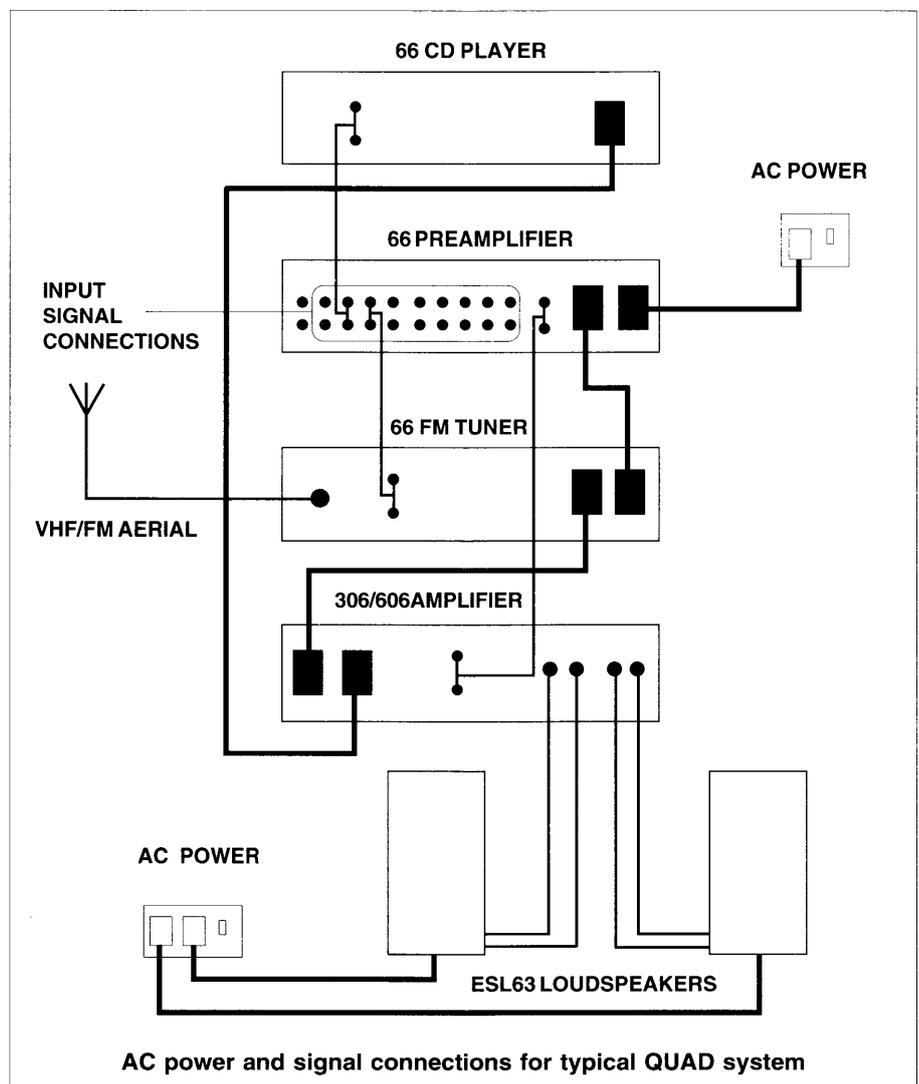
Some electronic equipment (CD players, computers etc) may cause interference at some frequencies if operated near a tuner. If this occurs then either switch off the offending item or move it further away from the tuner.

**Connection to the
66 Preamplifier**

At the back of the tuner you will find the **audio out** sockets for the connecting lead to the 66 preamplifier. Insert the White plug of the audio connecting lead supplied into the L socket (white = left channel) and the Red plug into the R socket (red = right channel).
Insert both the plugs, at the other end of the lead, into the **radio** sockets of your 66 preamplifier.

Make sure that the plugs are pushed fully in, at both ends, to ensure good connections. Poor connection will cause hum.

OPERATION

All tuner functions are controlled from the Quad 66 preamplifier **control panel** using the **CD function buttons**. Press the **radio** button to select **radio** on the Quad 66 preamplifier and to set the remote control to its radio function.

Note

If either the **disc** or **CD-play** button is pressed, after selecting **radio**, then all the tuner functions will be inhibited - if this occurs just press the **radio** button again.

Switching On and Off

Press the tuner **on/off** button. This has a sequential action so pressing it again will switch the tuner off. Leave the tuner switched on. In normal use it will be switched **on** and **off** via the master **on/off** switch on the 66 preamplifier, or the **standby** button on the **control panel**.

As soon as the tuner is switched on it will return to the preset station in use when last switched off. The display will show the preset position selected, the preset number and tuned station frequency (also if mono had been selected).

Selecting Stations

Pressing the **track < >** buttons will step through the 19 preset station positions. **Track >** steps upwards and **track <** steps downwards. This is shown in the display by a box around the selected preset number and an arrow pointing to it. The preset number and the station frequency is also displayed. If either button is held down stepping will continue until the button is released.

If a station has already been allocated **(stored)** into any of the preset positions then it will be heard, after a short delay.

Note

The action is cyclic. When stepping upwards and 19 is reached stepping will restart at 1, conversely when stepping downwards and 1 is reached stepping will restart at 19. This avoids having to step through all preset stations to choose a preset at one end of the range.

Example: The quickest way from preset 18 to preset 2 is to step upwards through 19 and 1, eg; press **track >** three times.

Tuning and Storing Stations

This is straightforward. The basic steps which have to be carried out for each station you want to put into the tuner memory are:-
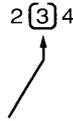
2 [3] 4

a. Select the preset number to which you want to allocate **(store)** a particular station, using the **track < >** buttons. Shown by a box around the preset position and an arrow pointing to it.

2 3 4

b. Put the tuner into its search mode by pressing either **search >** (ascending frequency) or **search <** (descending frequency). The box around the selected preset number and the arrow will disappear to confirm that the tuner is in the search mode, but the preset number and the frequency being tuned will be shown in the window to the right of the display.

c. The tuner will scan the frequency band and stop at each station being transmitted. If it stops at a station you do not want, just press the appropriate **search < >** button again.

d. When you have found the station you want, press the **store** button and hold it down for about 5 seconds to put it into the tuner memory.

2 [3] 4

e. This will be confirmed, in the tuner display, by a box around the preset position and an arrow pointing to it.

f. Repeat the above process to tune-in and store all the stations you want to receive - up to 19.

3
91.30
MHz

Example: To tune-in Radio 3 (91.30 MHz, Wrotham) and store it into preset position 3:- Press appropriate **track < >** button until 3 is shown in the display (3 also boxed and arrowed), keep pressing **search < >** buttons until the station is heard and 91.30 MHz is displayed. Finally press **store** for about 5 seconds to put the station into the tuner memory.

Note

Pressing **stop** selects preset number 1 so it makes sense to store your favourite station in that position. Other stations can be stored in order of frequency, or in any order which you find easy to remember.

Stereo Mono Selection

Most stations now transmit in stereo all the time. The display will show **stereo** when a stereo transmission is being received.

MONO

If you wish to listen to a particular station in mono (very poor signal and noisy background) then press the **pause** button to select mono. Pressing **pause** again will switch back to stereo. The **stereo** or **mono** indicator will appear in the tuner display to show how the tuner has been set, but the box around the chosen preset number and the arrow will disappear to confirm that **store** has to be pressed if you want to store the mode selected.

STEREO

Note that the tuner will normally revert to stereo operation when changing stations or switching off and on.

MONO

It is possible to store mono operation with a particular station by selecting *mono* (pressing *pause*) and then pressing the *store* button for about 5 seconds. The box around the preset position and the arrow appears as confirmation. If necessary, this can be done when initially tuning and storing the station.

STEREO

To change a station previously stored as mono back to stereo, press *pause* to select *stereo* and then the *store* button to store it again.

Signal Strength Indication

The approximate signal strength is shown by the bar graph to the right of the display. The more segments lit the stronger the signal and the better the tuner performance. Ideally at least 6 segments should be lit for a good signal to noise ratio (minimum background noise) with stereo transmissions. The diagram shows the effect on the tuner performance depending on the number of bar segments lit.
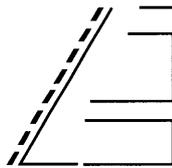
Top bar shows signal strength too high. This will degrade the performance by overloading the input stages. Use an attenuator.

Middle four shows adequate to good signal strength.

Bottom three shows poor signal strength. Check aerial. Select mono (to reduce noise in weak reception area).

SPECIAL SEARCH FEATURE

For special tuning requirements eg; tuning into very weak stations, storing stations which are not transmitting (provided the transmitting frequency is known) etc, tuning can be carried out in 25 kHz steps with the interstation mute defeated. The display is limited to 50 kHz resolution therefore the search button has to be pressed twice for each change in the display.

The tuner will automatically switch to this mode if during search it is allowed to return to the initial start frequency without a station being stored, eg; if 90.00 MHz was displayed when self seeking was started (*search* < > pressed) then if this frequency is again reached (displayed), without *store* being pressed, the scanning will stop at 90.00 MHz and further pressing of the *search* < > buttons will step through the tuning band in 25 kHz steps (two presses for each 50 kHz display change).

The interstation noise will be quite severe as in this mode the automatic interstation noise suppression circuit is switched off.

If you continue to hold down the *search* < > buttons the stepping will occur at three successively faster speeds; for the first few seconds slightly faster than normal, then at a higher speed and finally at maximum speed. Therefore when searching for a station by programme content (rather than by frequency) it is advisable to release the search button at that moment so that the sound can be used as an aid to tuning.

Once the required station or frequency has been found it can be put into the tuner memory by pressing the *store* button. This switches the tuner back to the normal search mode so if you need to tune-in further stations, in this way, you will again have to switch the tuner to its stepping mode.

This is not as complicated as it sounds and the instructions below give the basic steps which have to be carried out for each station you want to put into the tuner memory, using this method:-

a.   Select the preset number to which you want to allocate *(store)* a particular station or frequency, using the *track < >* buttons.

b.   Put the tuner into its search mode by pressing either *search >* (ascending frequency) or *search <* (descending frequency).

c.   As the tuner starts to scan press the other search button; if *search >* was initially chosen then press *search <*. Scanning will immediately reverse and stop at the frequency at which it started.

d.   Pressing the *search < >* buttons will now cause the tuner to step through the frequency band in 25 kHz steps (two presses for each 50 kHz display change).

e.   When you have found the station or frequency you want, press the *store* button and hold it down for about 5 seconds to put it into the tuner memory.

f.   This will be confirmed, in the tuner display, by a box around the preset position and an arrow pointing to it.

g.   Repeat the above process to tune-in and store all the stations or frequencies you want to receive.

Note   Pressing the *stop* button will set the tuner back to its normal search mode and select the number 1 station position.

Interstation Noise Suppression

In normal operation interstation noise is muted to provide a quiet background when tuning. If required though this function can be defeated (eg, for tuning into very weak stations), but search can then only be carried out in 25 kHz steps (see **Special Search Feature**).

MAINTENANCE

No routine maintenance is required. If necessary the case can be cleaned with a soft brush or, for more stubborn marks, a slightly moistened lint-free cloth. In this case remove the mains plug from the supply socket. Do not use cleaning agents, solvents or abrasives.

It is possible to power the 66 preamplifier control panel from the tuner. This is useful if a replacement battery is not readily available or if you want the control panel permanently sited by the tuner.
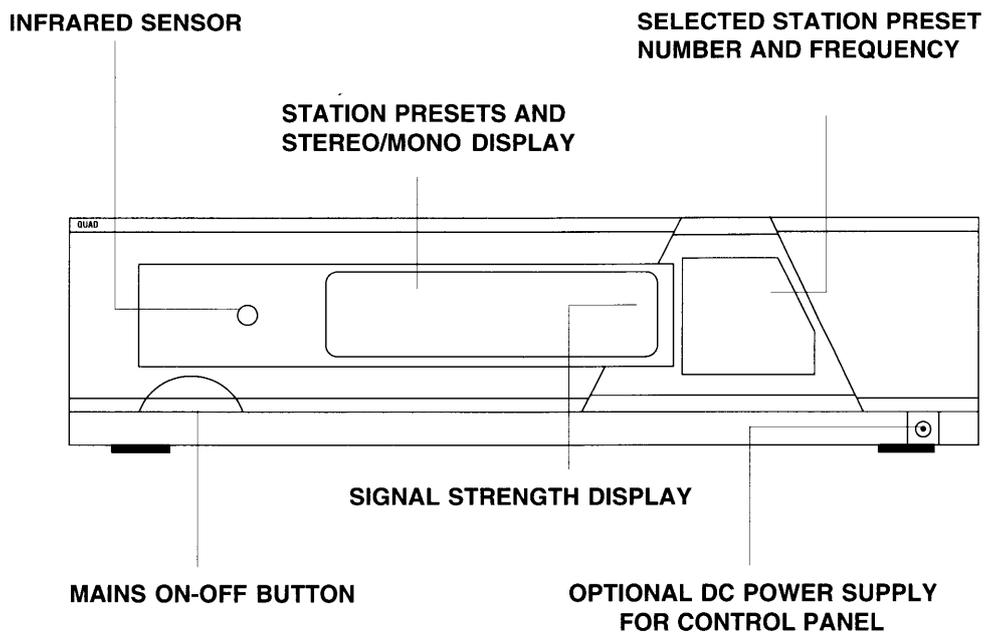
To do this slide off the control panel battery compartment lid, pull out the connecting lead and plug this into the DC power supply socket on the front right hand side of the tuner. If operated in this way remove the battery.
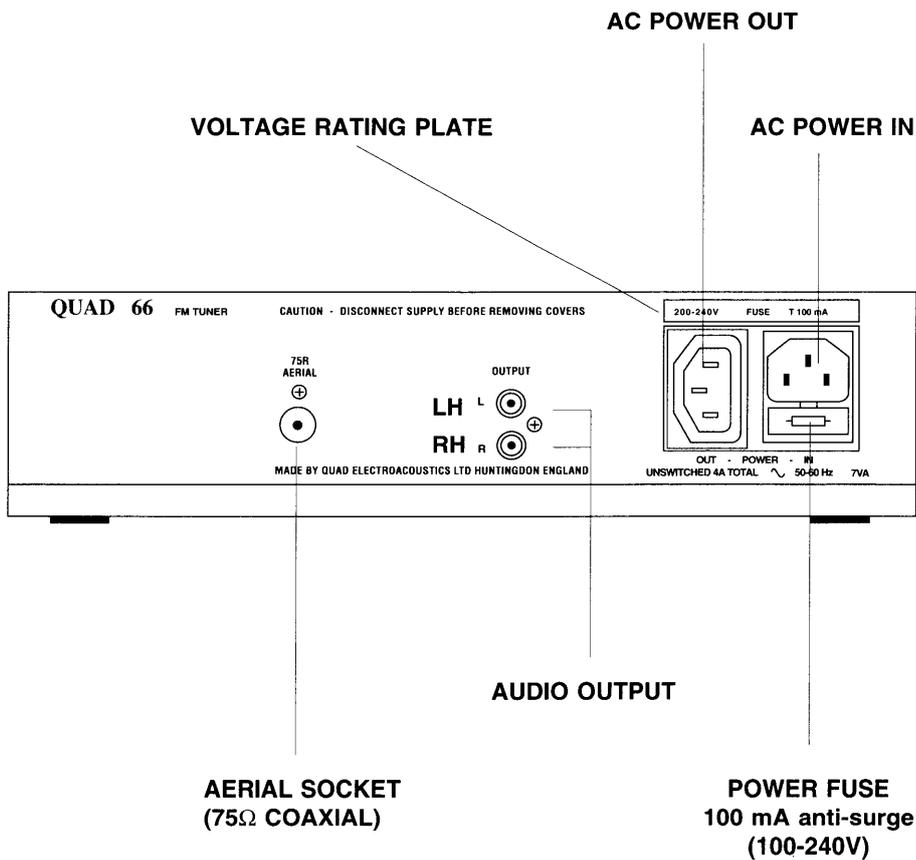
CONTROL FUNCTIONS

Your Quad 66FM tuner is very easy to operate using the CD function buttons on the 66 preamplifier control panel but to help you the operating controls are described below. The following terms for buttons etc, are also used throughout the text.

Tuner

On/Off Button: For switching the tuner on and off.

**Remote Control Panel
(supplied with
66 preamplifier)**

Radio: Selects tuner operation.

Track < >: Selects a station preset number. Either to listen to a stored station or to accept a different station prior to tuning: - *track >* steps upwards and *track <* steps downwards.

Search << >>: Tunes stations. Press to search for a station. When a station is found tuning stops until it is stored or *search << >>* pressed again: - *search >>* selects ascending frequency, *search <<* selects descending frequency scan.

Store: Stores stations into one of the 19 preset positions.

Pause: Selects mono operation. Mono can be stored with a particular station by selecting mono before pressing *store.*

Stop: Selects the number 1 station preset position and sets the tuner to its normal search mode (cancels stepping mode) .

Connecting Sockets

Aerial: For the input from your aerial system (75Ω).

Output L/R: Audio output connection to the radio input of your Quad 66 preamplifier.

AC Power In: For the AC power supply input cable.

AC Power Out: An unswitched AC power outlet for feeding power to other units in your Quad system.

DC Power Out: An optional DC power supply for the 66 preamplifier control panel.

FRONT VIEW

INFRARED SENSOR

SELECTED STATION PRESET
NUMBER AND FREQUENCY

STATION PRESETS AND
STEREO/MONO DISPLAY

SIGNAL STRENGTH DISPLAY

MAINS ON-OFF BUTTON

OPTIONAL DC POWER SUPPLY
FOR CONTROL PANEL

AC POWER OUT

REAR VIEW

VOLTAGE RATING PLATE

AC POWER IN

QUAD 66 FM TUNER   CAUTION - DISCONNECT SUPPLY BEFORE REMOVING COVERS   200-240V   FUSE   T 100 mA

75R
AERIAL

OUTPUT

LH L
RH R

MADE BY QUAD ELECTROACOUSTICS LTD HUNTINGDON ENGLAND

OUT - POWER - IN
UNSWITCHED 4A TOTAL   50-60 Hz   7VA

AUDIO OUTPUT

AERIAL SOCKET
(75Ω COAXIAL)

POWER FUSE
100 mA anti-surge
(100-240V)

SPECIFICATION

Tuning Range*:	87.5 - 108 MHz.
Channel spacing:	25 kHz (50 kHz displayed).
Sensitivity: (30 dB quieting)	Mono 2.9 μV.
(50 dB quieting)	Mono 8.5 μV (8 dBf).
	Stereo 25 μV (28 dBf).
Full limiting:	<1 μV.
Signal/noise: (Input signal 1 kHz at	Mono 76 dB.
1 mV, 'A' weighted)	Stereo 70 dB.
Distortion: (at 1 kHz ±75 kHz deviation)	Mono 0.1%.
	Stereo 0.15%.
(at 1 kHz ±25 kHz deviation)	Mono 0.05%.
	Stereo 0.1%.
Capture ratio:	1.5 dB.
IF rejection:	100 dB.
AM suppression:	60 dB.
Image rejection:	80 dB.
Pilot tone suppression:	60 dB.
Crosstalk: (at 1 kHz)	-40 dB (nominal at 1 kHz).
Frequency response:	+0 -1 dB, 20 Hz - 15 kHz.
Output level: (at 1 kHz/30% modulation)	100 mV rms.
Source impedance:	1 kΩ.
Minimum load impedance:	47 kΩ.
De-emphasis*:	50 μs or 75 μs.
Aerial input:	75Ω unbalanced.
Mains voltage:	100-120V or 200-240V (changed by links on PCB) 50-60 Hz. See rating label on back of tuner.
Power consumption:	6W approx.
Fuse:	100 mA anti-surge, 100-240V.
Dimensions:	Width 321 mm; height 80 mm; depth 255 mm (plus connectors) approx.
Weight:	2.8 kg approx.

* Depends on country

The right is reserved to alter performance and specification as required.

This equipment complies with the radio interference requirements as laid down in EEC (European Economic Community) regulations.

STATION REMINDER CHART   The following chart is for you to keep a record of which station you have stored against each preset number. We suggest you use a pencil so changes can be made easily, but two columns are provided for convenience.

Preset No.	Record 1	Record 2
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		

ACCESSORIES

Quad accessories are designed to match Quad equipment and to provide the best possible performance. Please contact your dealer or Quad direct for further information.

Item	Order No
Quad rack for 66CD/66pre/66FM	QF6CDRK
Quad pedestal	QPEDASG
Signal lead Phono (0.5m)	QP2P2SA
Signal lead Phono (1m)	QP2P21A
Coaxial aerial plug (75Ω)	PPL734A
Balun transformer (75Ω - 300Ω)	PP602BC
AC interconnect supply lead Euro/Euro (0.45m)	QSPESSB
AC interconnect supply lead Euro/Euro (1m)	QSPES1B
AC supply lead Euro/free end (2m)	QESOE2A
AC Euro output connector	PPR0413

QUAD