



C 446

Digital Media Tuner

ENGLISH



Owner's Manual

IMPORTANT SAFETY INSTRUCTIONS

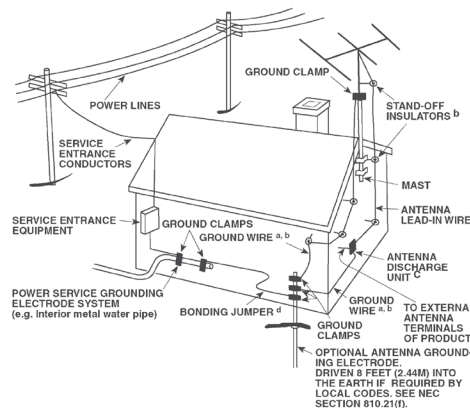
SAVE THESE INSTRUCTIONS FOR LATER USE.

FOLLOW ALL WARNINGS AND INSTRUCTIONS MARKED ON THE AUDIO EQUIPMENT.

- 1 Read instructions** - All the safety and operating instructions should be read before the product is operated.
- 2 Retain instructions** - The safety and operating instructions should be retained for future reference.
- 3 Heed Warnings** - All warnings on the product and in the operating instructions should be adhered to.
- 4 Follow Instructions** - All operating and use instructions should be followed.
- 5 Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Clean only with a dry cloth.
- 6 Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
- 7 Water and Moisture** - Do not use this product near water-for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
- 8 Accessories** - Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
- 9**  A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
- 10 Ventilation** - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
- 11 Power Sources** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. The primary method of isolating the amplifier from the mains supply is to disconnect the mains plug. Ensure that the mains plug remains accessible at all times. Unplug the AC power cord from the AC outlet if the unit will not be used for several months or more.
- 12 Grounding or Polarization** - This product may be equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 13 Power Cord Protection** - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
- 14 Outdoor Antenna Grounding** - If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



- 15 Lightning** - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power line surges.
- 16 Power Lines** - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
- 17 Overloading** - Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
- 18 Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

WARNING: THE APPARATUS SHOULD NOT BE EXPOSED TO DRIPPING OR SPLASHING, AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THE APPARATUS. AS WITH ANY ELECTRONIC PRODUCTS, USE CARE NOT TO SPILL LIQUIDS INTO ANY PART OF THE SYSTEM. LIQUIDS CAN CAUSE A FAILURE AND/OR A FIRE HAZARD.

- 19 Damage Requiring Service** - Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a) When the power supply cord or plug is damaged.
 - b) If liquid has been spilled, or objects have fallen into the product.
 - c) If the product has been exposed to rain or water.
 - d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
 - e) If the product has been dropped or damaged in any way.
 - f) when the product exhibits a distinct change in performance-this indicates a need for service.
- 20 Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- 21 Safety Check** - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

- 22 Wall or Ceiling Mounting** - The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 23 Heat** - The product should be situated away from heat sources such as radiators, heat registers, stoves or other products (including amplifiers) that produce heat.
- 24 Headphones** - Excessive sound pressure from earphones and headphones can cause hearing loss.
- 25 Battery Disposal** - When disposing of used batteries, please comply with governmental regulations or environmental public instruction's rules that apply in your country or area. Batteries (battery pack or batteries installed) must not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

WARNING

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

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.



THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAYBE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.



THE EQUIPMENT MUST BE CONNECTED TO AN EARTHED MAINS SOCKET-OUTLET.

The mains plug of the apparatus should be easily accessible or free from any obstruction during intended use.

RF EXPOSURE STATEMENT

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be located or operated in conjunction with any antenna or transmitter other than those contained in this device.

CAUTION

Changes or modifications to this equipment not expressly approved by NAD Electronics for compliance could void the user's authority to operate this equipment.

CAUTION REGARDING PLACEMENT

To maintain proper ventilation, be sure to leave a space around the unit (from the largest outer dimensions including projections) that is equal to or greater than shown below.

Left and Right Panels: 10 cm
Rear Panel: 10 cm
Top Panel: 50 cm

NOTES ON ENVIRONMENTAL PROTECTION



At the end of its useful life, this product must not be disposed of with regular household waste but must be returned to a collection point for the recycling of electrical and electronic equipment. The symbol on the product, user's manual and packaging, point this out.

The materials can be reused in accordance with their markings.

Through re-use, recycling of raw materials or other forms of recycling of old products, you are making an important contribution to the protection of our environment. Your local administrative office can advise you of the responsible waste disposal point.

INFORMATION ABOUT COLLECTION AND DISPOSAL OF WASTE BATTERIES (DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF EUROPEAN UNION) (FOR EUROPEAN CUSTOMERS ONLY)



Pb

Batteries bearing any of these symbols indicate that they should be treated as "separate collection" and not as municipal waste. It is encouraged that necessary measures are implemented to maximize the separate collection of waste batteries and to minimize the disposal of batteries as mixed municipal waste.



Hg

Cd

End-users are exhorted not to dispose waste batteries as unsorted municipal waste. In order to achieve a high level of recycling waste batteries, discard waste batteries

separately and properly through an accessible collection point in your vicinity. For more information about collection and recycling of waste batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

By ensuring compliance and conformance to proper disposal of waste batteries, potential hazardous effects on human health is prevented and the negative impact of batteries and waste batteries on the environment is minimized, thus contributing to the protection, preservation and quality improvement of the environment.

NOTE: THE C 446 IS NOT AN AUTO VOLTAGE UNIT. CONNECT ONLY TO THE PRESCRIBED AC OUTLET, I.E., 120V 60HZ OR 230V 50HZ.

RECORD YOUR MODEL NUMBER (NOW, WHILE YOU CAN SEE IT)

The model and serial number of your new C 446 are located on the back of the cabinet. For your future convenience, we suggest that you record these numbers here:

Model no.:
Serial no.:

INTRODUCTION

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THANK YOU FOR CHOOSING NAD.

The C 446 Digital Media Tuner is NAD's answer to connecting the past, present and future by combining the best of analog and digital broadcast technology. Along with NAD's tried and true high performance analog tuner for the FM and AM bands, the C 446 takes advantage of the latest frontier in music broadcasting by allowing connection to thousands of free audio broadcast service transmitted over the internet.

Through C 446, you get to enjoy various available radio stations from different parts of the world in real time and without the use of a computer. The C 446 takes the computer out of the equation and can be connected directly to the internet using wireless or wired connection.

Aside from Internet radio and FM and AM radio in their native analog format or as a decoded S/PDIF digital output, the C 446 also features the following

- built-in DAB+ radio (230V version model only)
- support for the music recommendation streaming service Last.fm
- browse and playback audio content from your computer via uPnP (Universal Plug and Play) media sharing
- USB connectivity to playback music files in AAC, MP3, WMA, WAV and FLAC format
- NAD IPD Dock for iPod (NAD IPD) control and connectivity
- analog stereo line level output or S/PDIF digital audio output

As with all our products, NAD's "Music First" design philosophy guided the C 446's design, such that it can confidently promise you both state-of-the-art and audiophile-quality music listening for years to come.

We encourage you to take a few minutes now to read right through this manual. Investing a little time here at the outset might save you a good deal of time later, and is by far the best way to ensure that you make the most of your investment in the C 446.

One more thing: We urge you to register your C 446 ownership on the NAD Worldwide Web site:

<http://NADelectronics.com>

For warranty information contact your local distributor.

NAD SHALL NOT BE HELD LIABLE FOR ANY TECHNICAL OR USER INTERFACE DISCREPANCIES IN THIS MANUAL.

THE C 446 OWNER'S MANUAL MAY BE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. CHECK OUT THE NAD WEBSITE FOR THE LATEST VERSION OF THE C 446 OWNER'S MANUAL.

WHAT'S IN THE BOX

Packed with your C 446 you will find

- AM loop antenna
- FM ribbon-wire antenna with balun
- Wireless antenna
- DAB antenna (230V version model only)
- Detachable mains power cord
- TNR 2 remote control with 2 AA batteries
- Quick Start guide

SAVE THE PACKAGING

Please save the box and all of the packaging in which your C 446 arrived. Should you move or otherwise need to transport your C 446, this is by far the safest container in which to do so. We've seen too many otherwise perfect components damaged in transit for lack of a proper shipping carton, so please: Save that box!

CHOOSING A LOCATION

Choose a location that is well ventilated (with at least several inches to both sides and behind), and that will provide a clear line of sight, within 25 feet/8 meters, between the C 446's front panel and your primary listening/viewing position - this will ensure reliable infrared remote control communications. The C 446 generates a modest amount of heat, but nothing that should trouble adjacent components. It is especially important that sufficient ventilation be provided.

RESTORING C 446 TO ITS FACTORY DEFAULT SETTINGS

Sometimes power spikes and drop-outs may from time to time cause some inadvertent functionality. The procedure below will reset the C 446 to its factory default settings.

For 120V version model only (AH version)

- At any Source modes, press and hold front panel [◀ SOURCE] button first and then followed by the [BACK] button. The VFD shows



```

AH Reset...
complete.
  
```

For 230V version model only (C version)

- At any Source modes, press and hold front panel [◀ SOURCE] button first and then followed by the [SETUP] button. The VFD shows



```

C Reset...
complete.
  
```

IMPORTANT NOTES

- The C 446 will automatically go to standby mode after the "reset" display.
- Restoring the C 446 to its factory default settings will delete all AM, FM and DAB presets as well as all setup settings done via the "Settings Menu".

NOTICE TO EUROPEAN CUSTOMERS

The C 446 may be operated in the following countries:

Armenia	Greece	Portugal
Austria	Hungary	Romania
Belarus	Iceland	Russia
Belgium	Ireland	Serbia & Montenegro
Bulgaria	Italy	Slovakia
Croatia	Latvia	Slovenia
Cyprus	Lithuania	Spain
Czech Republic	Luxembourg	Sweden
Denmark	Macedonia	Switzerland
Estonia	Malta	Turkey
Finland	Moldova	Ukraine
France	The Netherlands	United Kingdom
Georgia	Norway	
Germany	Poland	

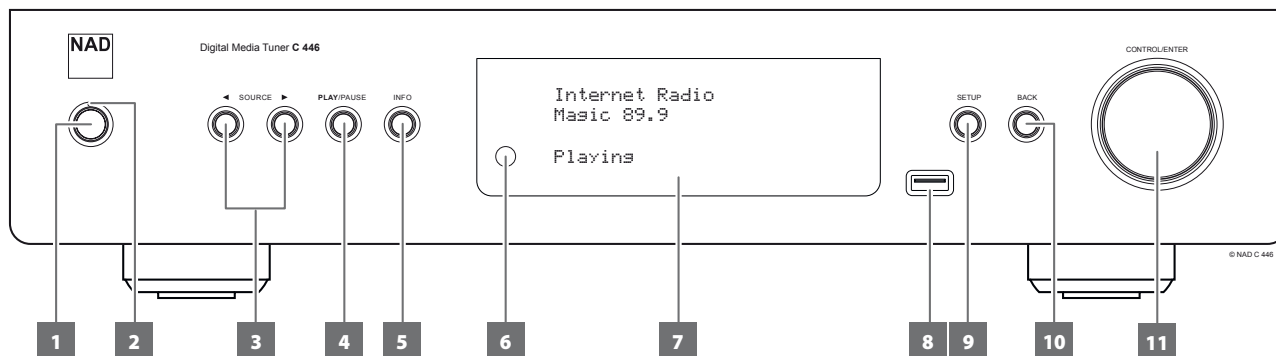
EU COUNTRY RESTRICTION IN 2.4GHZ BAND

This device may be used indoors or outdoors in all countries of the European Community using the 2.4GHz band: Channel 1-13, except where noted below.

- In France, the output power is restricted to 10 mW EIRP when the product is used outdoors in the band 2454 - 2483.5 MHz. There are no restrictions when used in other parts of the 2.4 GHz band.

IDENTIFICATION OF CONTROLS

FRONT PANEL



1 STANDBY BUTTON

- The rear panel POWER switch must be at ON position for the Standby button to activate.
- Press this button to switch ON the C 446 from standby mode. The Standby LED indicator will turn from amber to blue and illuminate the VFD. Pressing the STANDBY button again turns the unit back to standby mode.
- The C 446 will wake up to the last Source used prior to standby mode.

2 STANDBY LED

- This indicator will light up amber when the C 446 is at standby mode.
- When the C 446 is powered up from standby mode, this indicator will illuminate blue.

3 ◀ SOURCE ▶

- Select through Source modes.
- Press these buttons to toggle through the Source selections - Internet Radio, UPnP Client, UPnP Receiver, Last.FM, USB, iPod, AM, FM and DAB (230V version model only).

4 PLAY/PAUSE

- Toggle to activate playback or pause of applicable source.
- PLAY/PAUSE is applicable only for playback or pause of USB files, the docked iPod player and UPnP media.
- Pressing [PLAY/PAUSE] while at Internet Radio mode will cause the broadcast to stop. Press [PLAY/PAUSE] again to resume broadcast at current time.

5 INFO

- Show information as supplied by the applicable source.
- INFO feature is applicable only for USB, DAB and Internet Radio. Toggle [INFO] button to display supplied information.

6 REMOTE SENSOR

- Point the TNR 2 remote control at the remote sensor and press the buttons.
- Do not expose the remote sensor of the C 446 to a strong light source such as direct sunlight or illumination. If you do so, you may not be able to operate the C 446 with the remote control.

Distance: About 23ft (7m) from the front of the remote sensor.

Angle: About 30° in each direction of the front of the remote sensor.

7 VACUUM FLUORESCENT DISPLAY (VFD)

Display visual information about the current Source. Information supplied is generated by the Source.

8 USB

- Connect a USB memory stick to this input.
- Refer also to the item about USB at the USING THE C 446 – OTHER SOURCES section of the OPERATION page.

9 SETUP

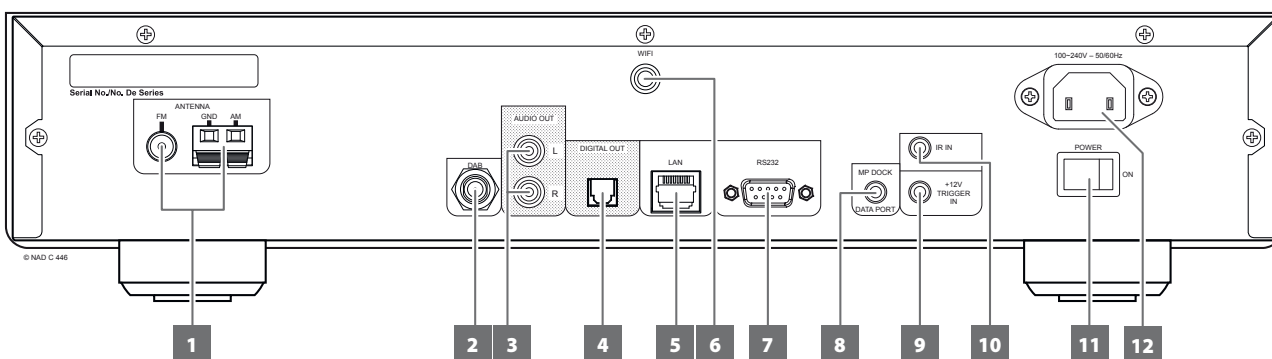
- Activate and display “Settings Menu”.
- SETUP button can be pressed at any Source mode; “Settings Menu” is activated each time.

10 BACK

- Return to previous display.
- Repeatedly press [BACK] to return back to a “page” or menu one at a time.
- During character entry of password or user name, press [BACK] to delete current character.

11 CONTROL/ENTER

- Dual-function control knob.
- Rotate to select through menu or item list.
- Rotate to select alphanumeric characters for text/character entry as required by a menu item.
- Press to select item, start playback of a file or complete character entry (for password and user name).



ATTENTION!

Please make sure that the C 446 is powered off or unplugged from the mains power source before making any connections. It is also advisable to power down or unplug all associated components while making or breaking any signal or AC power connections.

1 FM ANTENNA TERMINAL

- Connect the supplied wire "dipole" FM antenna to the FM antenna terminal using the supplied "balun" adapter. It will usually work best when mounted on a vertical surface such as a wall, with arms fully outstretched forming a horizontal "T" perpendicular to the origin point of the signal.

AM ANTENNA TERMINAL

The AM loop antenna supplied with the C 446 (or a suitable replacement) is required for AM reception.

- Connect the supplied AM loop antenna to these terminals. If an external AM antenna is used, make connections to the AM and GND terminals in accordance with the instructions supplied with the antenna.
- Testing different positions for the antenna may improve reception; vertical orientation will usually produce the best results. Antenna proximity to large metal objects (appliances, radiators) may impair reception, as well as attempts to lengthen the wire to the loop.
- Refer also to the item about ASSEMBLING THE LOOP ANTENNA at the LISTENING TO AM/FM RADIO section of the OPERATION page.

2 DAB ANTENNA TERMINAL (230V version model only)

- Install the supplied DAB antenna into this DAB terminal.
- With DAB, you can receive CD-like quality programs without any annoying interference and signal distortion.
- Refer also to the "LISTENING TO DAB RADIO" segment of the "OPERATION" section.

3 AUDIO OUT

Connect to the corresponding analog audio input of an amplifier, receiver or stereo system.

4 DIGITAL OUT

Using an optical cable (TOSLINK connector), connect DIGITAL OUT to the corresponding digital audio input of receivers or digital processors.

5 LOCAL AREA NETWORK (LAN) PORT

- LAN connection must be setup for Wired connection to be established. Set up a Wired Ethernet broadband router with broadband internet connection.
- Using a standard straight-through Ethernet cable (not supplied), connect one end of the Ethernet cable to the LAN port of your wired Ethernet broadband router and the other end to C 446's LAN port.

NOTES

- NAD is not responsible for any malfunction of the C 446 and/or the internet connection due to communication errors or malfunctions associated with your broadband internet connection or other connected equipment. Contact your Internet Service Provider (ISP) for assistance or the service bureau of your other equipment.
- Contact your ISP for policies, charges, content restrictions, service limitations, bandwidth, repair and other related issues pertinent to internet connectivity.

6 WIRELESS (WIFI) ANTENNA TERMINAL

- Install the supplied wireless antenna into this wireless antenna terminal (WiFi).
- Wireless (WiFi) broadband router with broadband internet connection is required for wireless connection to be established.

7 RS 232

NAD is a certified partner of AMX and Crestron and fully supports these external devices. Check out the NAD website for information about AMX and Crestron compatibility with NAD. See your NAD audio specialist for more information.

- Connect this interface using RS-232 serial cable (not supplied) to any Windows compatible PC to allow remote control of the C 446 via compatible external controllers.

8 MP DOCK

The C 446 is equipped with a data port in the rear panel where an optional NAD IPD (NAD IPD Dock for iPod) 1, NAD IPD 2 and later variants can be plugged in.

- Connect the "MP DOCK (DATA PORT)" jack of the C 446 to the corresponding "DATA PORT" socket of the optional NAD IPD model.
- Connection between the C 446 and NAD IPD is only via their respective DATA PORT. NAD IPD audio and S-Video port connections should be directed to the external device's corresponding input ports (assigned for NAD IPD).

NOTE

The NAD IPD Dock for iPod is not supplied with your C 446.

IDENTIFICATION OF CONTROLS

REAR PANEL

9 +12V TRIGGER IN

This input allows the C 446 to be switched remotely to standby mode and ON by ancillary equipment, such as an amplifier, preamplifier, receiver, etc. The controlling device must be equipped with a +12V trigger output to use this feature. Connect this +12V Trigger input to the remote device's corresponding +12V DC output jack using a mono cable with 3.5mm male plug.

10 IR IN

- This input is connected to the output of an IR (infrared) repeater (Xantech or similar) or the IR output of another component to allow control of the C 446 from a remote location.

11 POWER

- Supply the AC mains power to the C 446.
- When the POWER switch is set to ON position, the C 446 goes to standby mode as shown by the amber status condition of the Standby LED. Press the front panel Standby button or TNR 2 remote control's [ON] button to switch ON the C 446 from standby mode.
- If you intend not to use the C 446 for long periods of time (such as when on vacation), switch off the POWER switch.
- With POWER switched off, neither the front panel Standby button nor TNR 2 remote control's [ON] button can activate the C 446.

12 AC MAINS INPUT

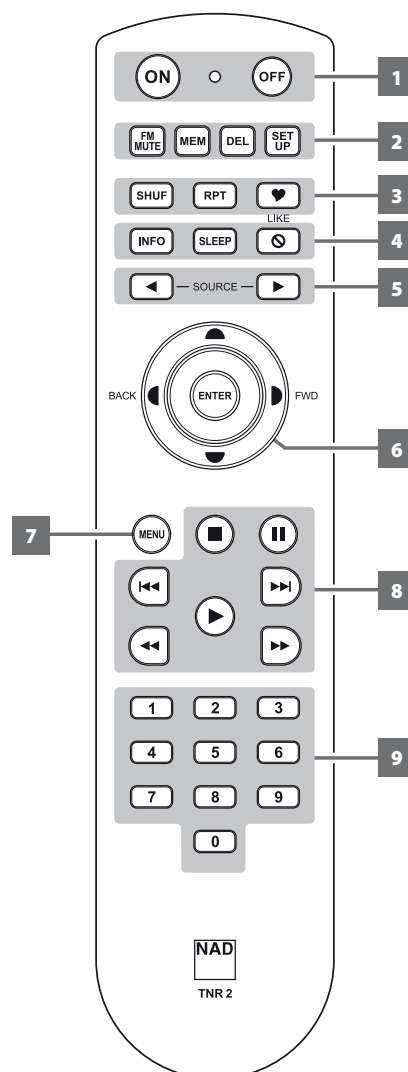
The C 446 comes supplied with a separate detachable mains power cord. Before connecting the plug to the mains power source, ensure that it is firmly connected to the C 446's AC Mains input socket first.

- Connect only to the prescribed AC outlet, i.e., 120V 60 Hz (120V version model only) or 230V 50 Hz (230V version model only).
- Always disconnect the mains power plug from the mains power source first, before disconnecting the cable from the C 446's AC Mains input socket.

IDENTIFICATION OF CONTROLS

TNR 2 REMOTE CONTROL

- 1 **ON:** Switch ON C 446 from standby mode.
OFF: Switch C 446 to standby mode.
- 2 **FM MUTE:** Activate or deactivate FM Mute Stereo at FM mode.
MEM: Save current station to a Preset number.
DEL: Delete selected Preset number.
SETUP: Bring up Settings Menu.
- 3 **SHUF:** Play files, folders, songs and albums in random order, as applicable.
RPT: Repeat playback of files, folders, songs and albums, as applicable.
♥: At Last.fm mode, "Love" or recommend current track.
- 4 **INFO:** Show information as supplied by the applicable source.
SLEEP: Switch off C 446 and go to standby mode after a preset number of minutes.
⌚: At Last.fm mode, "Ban" or do not recommend current track.
- 5 **◀ SOURCE ▶:** Select through Source modes.
- 6 **◀/▶/▲/▼, ENTER:** Use to navigate and select a menu or item in a menu. Use [▲/▼] for text or character entry in user name or password setup. Use [◀/▶/▲/▼] for text or character entry in renaming of AM/FM Presets. Use [◀/▶] to move back to the previous menu/item or forward to the next menu/item.
- 7 **MENU:** Bring up menu in Last.fm, USB or iPod source. Use [MENU] button also to bring up previous menu.
- 8 **[■]:** Stop playback.
[||]: Pause playback temporarily.
[▶▶]: Go to next file.
[◀◀]: Go to the beginning of current or previous file.
[▶]: Start playback.
[◀◀/▶▶]: Fast reverse/forward search.
- 9 **NUMERIC KEYS:** Use for direct entry of file number, frequency or preset number.



SETUP

SETTING UP THE C 446

OUT OF THE BOX

Unpack all the contents of the C 446 package. Refer to the previous section "What's in the box" to confirm the contents. For a quick guide on how to set up your C 446, refer to the enclosed "C 446 Digital Media Tuner Quick Start Guide".

It is important that you check out first the C 446 Quick Start Guide; follow the guidelines as the details are necessary to start up your C 446. A video presentation of the C 446 Setup procedure is also available from the NAD website.

Make the connections as per detailed in the Quick Start guide. Upon completing all the requisite connections, undertake the necessary setup procedure for each of the Source modes.

NETWORK SETUP

When you switch ON the C 446 for the first time, the VFD will show

```
Internet Radio

Check Network Setup
```

This is the default mode when there is no network connection set up.

Press [SETUP] to bring up "Settings Menu". Press [ENTER] or [D] to select "Network Setup".

There are five menu items under NETWORK SETUP.

```
Network Setup
Wireless Setup
+Interface
Status
```

WIRELESS SETUP

- **View Networks:** List available wireless network in your area of coverage.
- **Connect WPS:** Configure wireless security automatically. If your wireless router supports WPS (WiFi Protected Setup), press your router's WPS button within 2 minutes of selecting "Connect WPS".
- **Set Region:** Select the region where wireless connection is setup.

INTERFACE

Before setting up your network connection, ensure that the following are already established and available

- broadband internet connection
- wireless (WiFi) broadband router
- wired Ethernet broadband router

```
Network Interface
Wireless
+Wire
```

Wired

Network connection using Ethernet broadband connection. The C 446 is defaulted to "Wired" setup. It is advisable that wired connection is utilized when possible. Wired connection is less likely to have "drop-out" or range problem and not vulnerable to interference or eavesdropping.

Using a standard straight-through Ethernet cable (not supplied), connect one end of the Ethernet cable to the LAN port of your wired Ethernet broadband router and the other end to C 446's LAN port.

Wireless

Network connection using WiFi broadband connection. Ensure that the supplied wireless antenna is installed in the C 446 rear panel's wireless antenna terminal (WiFi) before setting up the wireless network connection of your C 446.

If you prefer "Wireless" connection instead of "Wired", follow the steps provided in the "INTERNET RADIO – WIRELESS SETUP" section of the C 446 Digital Media Tuner Quick Start Guide.

STATUS

Display status of current network connection. The following are the status information.

Wireless connection: Network name, IP (Internet Protocol) address and RSSI (Received Signal Strength Indicator).

Wired connection: IP (Internet Protocol) address

If the connection is failed or not available, "Setup Failed" or "Link Down" is shown.

WIRELESS MAC

Display your C 446's MAC wireless address.

WIRED MAC

Display your C 446's MAC local area network address.

TEXT/CHARACTER ENTRY

When entering a text or character as required by a menu item, the following buttons can be used.

```

Enter Password
-
#Source# = Next/Prev
#Scroll# = Edit Char
    
```

FRONT PANEL BUTTONS OR KNOB

CONTROL/ENTER: Rotate to select alphanumeric characters for text/character entry.

CONTROL/ENTER: Press to end and complete text/character entry.

[SOURCE▶]: Press to select text/character and move on to the next text/character entry.

[◀SOURCE]: Press to go back to previous text/character.

TNR 2 REMOTE CONTROL BUTTONS

[▲/▼]: Toggle to select alphanumeric characters for text/character entry.

ENTER: Press to end and complete text/character entry.

[D]: Press to select text/character and move on to the next text/character entry.

[◀]: Press to go back to previous text/character.

IMPORTANT NOTE ABOUT PASSWORD/USER NAME ENTRY

Right after entering the last character of your password or user name, press [ENTER] button immediately to complete password or user name entry.

SELECTING SOURCES

Toggle TNR 2 or front panel's [◀ SOURCE ▶] buttons to step through the following Source modes. Stop (release button) when your desired Source comes up.

Internet Radio → UPnP Client → UPnP Receiver → Last.fm → USB → iPod → AM → FM → DAB (230V version model only) → then back to Internet Radio

SETTINGS MENU

At any source mode, [SETUP] button can be pressed to bring up the "Settings Menu". Aside from Network Setup, DAB Setup and Last.FM Setup which are discussed separately in their respective associated source modes, the "Settings Menu" also features the following

- Display Brightness
- Digital Level
- System Info

DISPLAY BRIGHTNESS

```

Settings Menu
#Display Brightness
Digital Level
System Info
    
```

```

Display Brightness
#Bright
Dimmed
    
```

Select "Dimmed" to reduce brightness of the display or "Bright" for normal display brightness.

DIGITAL LEVEL (APPLICABLE ONLY AT INTERNET RADIO MODE)

```

Settings Menu
Display Brightness
#Digital Level
System Info
    
```

```

Digital Level
# 0dB
-3dB
-6dB
    
```

Select "Digital Level" to attenuate output level by -3dB or -6dB. The default level is 0dB.

SYSTEM INFO

```

Settings Menu
Display Brightness
Digital Level
#System Info
    
```

Select to display current C446 system information.

OPERATION

USING THE C 446 – INTERNET RADIO

Internet Radio is the default Source mode of the C 446. With an established network connection, the C 446 paves the way for you to tune in and listen to internet radio services across various parts of the world. Internet Radio allows you to search and browse your favourite music station, genres among others categories.

When Internet Radio is selected first time, the following menu options are displayed

- My Favourites
- Local area
- Stations
- Podcasts
- My Added Stations
- Help

MY FAVOURITES

Internet Radio stations can be stored in the menu item "My Favourites". There are two ways on how to store your desired internet radio stations – via the NAD Electronics WiFi Radio Portal or using the TNR 2 remote control.

NAD ELECTRONICS WIFI RADIO PORTAL

The Internet Radio section of the C 446 is linked to the NAD Electronics WiFi Radio Portal at <http://vtuner.nadelectronics.com>.

The NAD Radio Portal will help organize your listening by creating a list of your favourite internet radio stations. The stations you pick will be immediately displayed in the "My Favourites" area of the home page and accessible through your C 446.

The NAD radio portal also allows you to suggest a station that is not currently promoted. Click "Suggest a station" and enter the requisite information like Station name, Station Website, Location, Station URL among others.

The NAD radio portal provides also a communication channel for your questions and comments.

Create an Account

- Create an account at <http://vtuner.nadelectronics.com>. Click "Register here" to start off your registration.
- An access code is required to register at the NAD radio portal.
- Your C 446 access code can be found at the "Get access code" item in the "Help" menu.

Add or remove station at "My Favourites" via NAD Radio Portal

Once an account is created, you can start browsing for internet radio stations as you would do with a C 446.

- To add a station in "My Favourites", click the "♥+" icon beside the Station Name. A new window will open where one can either create a new favourites group or add to an existing favourites group.
- To remove a station in "My Favourites", click the "♥-" icon beside the Station Name.

USING TNR 2 REMOTE CONTROL

The [MEM] and [DEL] buttons of the TNR 2 can also be used to add or remove a station from "My Favourites" menu.

Add or remove station at "My Favourites"

- To add a station in "My Favourites", press [MEM] while playing a station or during a display list of stations. "Favourite Added" is shown in the lower line of the display upon successful addition of desired station.
- To remove a station in "My Favourites", select the station from the "My Favourites" list and then press and hold [DEL] until "Favourite Removed" is shown in the lower line of the display.

LOCAL AREA

Normally, "Local Area" should be displayed as "Local Canada", "Local Australia" or any other applicable country, state, province or locality. Local area is determined by the IP address of your network connection. This allows faster access to stations local to your area thus avoiding going through searching by Location.

STATIONS

Search radio stations by Location, Genre, Search stations, Popular stations or New stations.

Location: Search stations by geographical location including selection by country.

Genre: Select stations by type of programming like Blues, Classical, Country and other classes.

Search stations: Direct input of desired station name.

Popular stations: Search from a list of most popular stations.

New stations: Select newly listed stations.

PODCASTS

Podcasts are recordings of a various media like audio broadcasts that are made available in the internet for download or listening. It allows you to selectively listen to a program at any given time.

Just like in "Stations" above, Podcast program can be selected by Location, Genre and Search podcasts.

MY ADDED STATIONS

List stations that you have requested via the NAD radio portal. These are the stations successfully added in the NAD radio portal using the "Suggest a station" option.

HELP

Select to find your C 446 access code needed in registering at <http://vtuner.nadelectronics.com>. The Help section also shows a couple of FAQ (Frequently Asked Questions). Listen to the audio explanation of the selected FAQ.

UPnP CLIENT

UPnP Client

The C446 utilizes UPnP (Universal Plug and Play) client to allow playback of audio files stored in a home network such as a computer, NAS (network-attached storage), Apple iOS device or Android phone.

The C 446 browses your UPnP server audio content over the local network. It includes MP3, FLAC, WMA, WAV, and AAC codecs. The computer, NAS or mobile devices on the network are all potential servers. In order to use them as such, they each need to be set up to act as a UPnP server.

✚NAD: LAB:
Twonky Server [HOME]

WINDOWS 7

Windows 7 has a built-in UPnP server. To enable it and other related information, visit the following websites:

<http://windows.microsoft.com/en-CA/windows7/Getting-started-with-media-streaming>

<http://windows.microsoft.com/en-CA/windows7/Stream-your-media-to-devices-and-computers-using-Windows-Media-Player>

OTHER DEVICES AND OPERATING SYSTEMS

For other Windows versions, Linux or Mac computers, server software such as “Twonky Server” can be downloaded and installed. Visit twonky.com for more information.

For applicable Apple and Android devices, visit their stores or website for information about applicable apps needed for them to act as UPnP servers.

The always-on NAS is an ideal device for storing and accessing music files. When selecting a NAS, look for DLNA-certified unit that can also serve as a Digital Media Server (DMS).

UPnP RECEIVER

UPnP Receiver

Listening

Browsing one's media collection is not limited anymore to the C 446. The connection between the mobile device or computer and the C 446 is more than accessing and browsing of media. In a local network, the UPnP Receiver allows the streaming of your media collection from your computer or handheld device to your C 446. The UPnP Receiver effectively transfers control of the media to the user's computer or handheld device.

With the C 446's UPnP Digital Audio Renderer, browsing, creating playlists and changing of songs are possible anywhere at home using a variety of networked devices.

WINDOWS 7

Windows 7 Media player has a feature called “Play To” that allows users to play media on their computer to other devices on their local network including the NAD C446.

To enable it and other related information, visit the following websites:

<http://windows.microsoft.com/en-CA/windows7/using-the-play-to-feature-to-stream-media>

<http://windows.microsoft.com/en-CA/windows7/Stream-your-media-to-devices-and-computers-using-Windows-Media-Player>

OTHER DEVICES

For applicable Apple and Android devices, visit their stores or website for information about applicable apps needed for them to allow control of your media. Once the app is installed on the device, simply follow the setup instructions.

LAST.FM

Last.fm

Settings Menu
Network Setup
✚Last.fm Setup
Display Brightness

Last.fm is a music recommendation streaming service supported by C 446. Last.fm offers a large number of music options. Go to www.last.fm to see the programming available.

Last.fm is a pay per use service. An account must be setup at Last.fm to use the service with the C 446. Once an account is set up, a user name and password are provided. Use this information to set up Last.fm with the C 446.

Last.fm Setup
✚User Name
Password

OPERATION

USING THE C 446 – OTHER SOURCES

USB

USB

Attached

The C 446 can play back AAC, MP3, WMA, WAV or FLAC files stored on a USB (Universal Serial Bus) memory stick. Connect the USB memory stick into the front panel USB port.

When connected, the following keys on the TNR 2 remote control are active:

[▶], [II], [■], [◀◀/▶▶], [◀◀/▶▶I], [MENU], [SHUF], [RPT]

Playback the files in your USB memory stick as prompted in the VFD or as you would in normal USB playback.

The following are the C 446's capabilities with respect to USB device playability.

USB SUPPLEMENTARY INFORMATION	
Maximum number of folders supported	128
Maximum file in one folder	511
Maximum file in device	65408
Maximum number of sub-directory	8
Maximum number of bytes supported for Folder/File name	64
Maximum number of bytes supported for ID3 Title/Artist/Album	60
Maximum bit rate supported	VBR, 320K
HDD handling capacity (additional power adapter maybe required for some HDD models)	FAT 16/32
USB version supported	1.1

iPod

iPod Display

iPod Connected

The C 446 has a MP DOCK DATA PORT where a corresponding DATA PORT from a NAD IPD Dock for iPod (NAD IPD) can be connected and interfaced. This allows control of the NAD IPD via C 446.

Playback the files from your docked iPod as prompted in the VFD or as you would when operating your iPod player independently.

When connected, the following keys on the TNR 2 remote control are active:

[▶], [II], [■], [◀◀/▶▶], [◀◀/▶▶I], [MENU], [SHUF], [RPT]

These TNR 2 keys operate like their corresponding iPod player buttons or function.

NOTES

- *NAD IPD and iPod player are not supplied with your C 446.*
- *iPod player functions, features and playback capabilities accessible through C 446 may vary depending on your iPod player model.*

The C 446's internal AM/FM tuner offers very high quality sound from radio broadcasts. You can listen to AM and FM stations either in their native analog format or as a decoded SPDIF digital output. The reception and sound quality will always be dependent to the type of antenna(s) used as well as proximity to the broadcast origin, geography and weather conditions.

ABOUT ANTENNAS

Connect the supplied wire "dipole" FM antenna to the FM antenna terminal using the supplied "balun" adapter. It will usually work best when mounted on a vertical surface such as a wall, with arms fully outstretched forming a horizontal "T" perpendicular to the origin point of the signal.

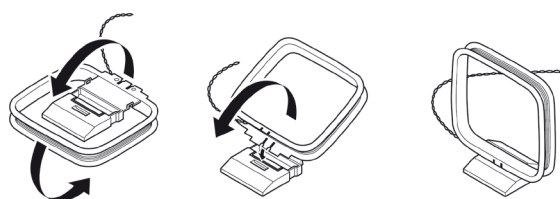
In areas of poor FM reception, an exterior FM antenna can improve performance dramatically. If radio listening is important to you, consider consulting an antenna installation professional to optimize your system.

The supplied AM "loop" antenna will usually provide adequate reception. However, an exterior AM antenna can be used to improve reception. Consult an antenna professional for more information.

NOTE

Unless explicitly specified, all control buttons mentioned below are with reference to TNR 2 remote control.

ASSEMBLING THE LOOP ANTENNA



- 1 Rotate the outer frame of the antenna.
- 2 Insert the bottom edge of the outer frame into the groove on the stand.
- 3 Extend the antenna cord.

TUNING AM/FM STATIONS

Rotate the front panel [CONTROL/ENTER] or use TNR 2's [◀/▶] to tune for stations.

- 1 Press [◀/▶] momentarily to step up or down between AM or FM frequencies.
- 2 Press and hold [◀/▶] for more than 2 seconds to search up or down - the C 446's tuner will stop at the next sufficiently strong signal it encounters.
- 3 Pressing the [◀/▶] during the search process will stop the search.

DIRECT TUNING

If you know your desired station's frequency allocation, you can tune directly to the station.

- 1 Toggle [ENTER] button to switch between "Preset" and "Tune" mode (see second line of the VFD). Select "Tune" mode.
- 2 Using the numeric keys of the remote control, key-in the frequency allocation of the station. For example, to enter 104.50MHz, press "1", "0", "4", "5" and "0".

STORING PRESETS (AM/FM/DAB)

The C 446 can store a mix of your 40 favorite AM, FM and DAB radio stations for immediate recall.

- 1 To store a desired AM/FM station to a preset, first tune to the desired frequency (see above), then press TNR 2's [MEM] button. The VFD will show the next available Preset number - for example, "Preset 04 Free". If there is no more vacant Preset number, you can overwrite an existing Preset number by pressing the [▲/▼] buttons to select the Preset number you want to overwrite.
- 2 Press the [MEM] button again to store the desired frequency on the Preset number shown. Your desired frequency is now stored in the assigned preset.

DIRECT RECALL OF A PRESET NUMBER

You can directly recall a desired Preset number.

- 1 Toggle [ENTER] button to switch between "Preset" and "Tune" mode (see second line of the VFD). Select "Preset" mode.
- 2 Using the numeric keys of the remote control, directly key-in your desired Preset number. For example, to enter Preset 5, press "5".

DELETING A STORED PRESET (AM/FM/DAB)

You can empty a preset by deleting the stored information.

- 1 Select the preset number to be deleted. For example, "P04".
- 2 Press and hold [DEL] button until the current Preset number shown in the VFD is extinguished ("P04 becomes "P--").

CHOOSING THE TUNER MODE

The TNR 2's [FM MUTE] key is a dual-purpose control. Toggle [FM MUTE] to switch between "FM Mute Stereo" and "Tuned". In the normal position, "FM Mute Stereo", only the stations with strong signal can be listened to and the noise between stations is muted.

Pressing the [FM MUTE] button again ("Tuned") allows distant and potentially noisy stations to be received. Noise is reduced if the FM station signal level is less than the FM Stereo threshold (since mono FM is inherently less noise-prone) though at the sacrifice of the stereo effect.

ABOUT USER NAMES

A particular Preset number can be assigned a twelve-character "User Name". The assigned "User Name" will be shown in the VFD whenever the associated Preset number is recalled.

ENTERING USER NAMES

To assign a Preset number with the user name "NEWS", follow the procedure as below.

- 1 Recall the desired Preset number to be assigned a "User Name".
- 2 Then, press the [MEM] button once and within five (5) seconds, press the [INFO] button - the readout shows a blinking box.
- 3 Use the [▲/▼] buttons to select the first character of the name ("N" from the alphabetical list).
- 4 Press [▶] button to select the character and correspondingly move forward to the next position. (Press [◀] to go back to the previous character). Repeat this process for each character in sequence.
- 5 Press the [MEM] key again to store the User Name and exit the text-entry mode.

OPERATION

LISTENING TO AM/FM RADIO

ABOUT RDS

The Radio Data System (RDS) permits sending small amounts of digital information using conventional FM radio broadcasts. The C 446 supports two RDS modes, program-service name (PS mode) and radio-text (RT mode). Not every FM station incorporates RDS in its broadcast signal. In most areas you will find from one to several RDS-enabled stations, but it is by no means impossible that your favorite stations will not be broadcasting RDS data.

When an RDS-enabled FM broadcast is tuned, the VFD will show its program-service name (PS) text and the station's radio-text (RT) readout, if any, which might scroll song- or artist-name, or any other text of the station's choosing.

A screenshot of a VFD display showing radio information. The text is arranged in four lines: 'FM 103.50M' and 'P02' on the first line, 'Stereo' and 'FM Mute' on the second line, 'NAD Music First' on the third line, and 'High Performance' on the fourth line.

```
FM 103.50M      P02
Stereo          FM Mute
NAD Music First
High Performance
```


Until now, analogue radio signals such as FM or AM have been subject to numerous kinds of interference on their way from the transmitter to your radio. These problems were caused by mountains, high-rise buildings and weather conditions. With Digital Audio Broadcast (DAB), you can now receive CD-like quality radio programs without any annoying interference and signal distortion. DAB broadcasts use digital signals rather than traditional analogue transmissions, thus providing clear high quality reception. You get far more robust reception and virtually hiss or crackle free sound with DAB as long as you are within a good coverage area.

With DAB, the listener can scroll through a list of available stations - then instantly tune to the station of his choice. There is no need either to remember channel frequencies. All broadcasts are selected by simply selecting the service name.

The C 446 makes it possible for you to enjoy listening to DAB+ broadcasts. Connect the other end of the supplied DAB antenna into the DAB antenna terminal and start enjoying the CD-like quality sound and expansive content selection available with DAB.

IMPORTANT NOTES

- DAB is applicable only to 230V version models of C 446.
- Unless explicitly specified, all control buttons mentioned below are with reference to TNR 2 remote control.

DAB OPERATION

With the supplied DAB antenna already connected, you can now carry out the C 446 to receive DAB broadcasts.

- 1 Toggle [◀ SOURCE ▶] button until DAB mode. When DAB mode is selected, VFD will show

```
DAB
No Items
```

The above display indicates that there are no scanned DAB broadcast services yet. This is the DAB default mode.

- 2 To tune to DAB broadcast services, press [SETUP] to bring up "Settings Menu" and then use [▲/▼] to scroll to "DAB Setup". Press [ENTER] or [D] to select "DAB Setup".

```
Settings Menu
Network Setup
#DAB Setup
Last.FM Setup
```

- 3 At "DAB Setup" menu, use [▲/▼] to scroll to "Full Scan". Press [ENTER] or [D] to select "Full Scan".

```
DAB Setup
Station Order
#Full Scan
Manual Scan
```

Upon selecting "Full Scan", automatic scanning will immediately ensue. When scanning is completed, the total number of stations found will be displayed.

- 4 Toggle [C] until the list of DAB stations is shown. Use [▲/▼] to scroll to desired DAB station. Press [ENTER] or [D] to select desired DAB station.

NOTE

"No Items" will be shown in the VFD when no DAB stations are found after the scanning process. If this occurs, check the connection and position of the DAB antenna or call your local DAB broadcast providers for coverage information.

DAB SETUP MENU

Aside from "Full Scan" as already described above, "DAB Setup" menu will also present you with other options namely - Station Order, Manual Scan, Prune List and Reset Settings.

STATION ORDER

Use "Station Order" to sort the sequence of the listed stations. There are three orders – Alphanumeric, Ensemble and Active.

- 1 While listening to a DAB broadcast, select "Station Order" from "DAB Setup" menu.
- 2 At "Station Order" menu, use [▲/▼] to select "Alphanumeric", "Ensemble" or "Active".

```
Station Order
#0Alphanumeric
0Ensemble
0Active
```

- 3 Press [ENTER] to select desired station order.

ALPHANUMERIC

This is the default setting. Stations are arranged by numbers first and then alphabetically by letters.

ENSEMBLE

Digital radio is broadcast as groups of data called ensemble. Each ensemble contains a number of stations, transmitted at a set frequency. When "Ensemble" is selected as the mode of station order, the radio stations are arranged in the order of their ensemble names.

NOTE

Ensemble is also interchangeably termed as "multiplex" by other broadcast providers.

ACTIVE

Active stations are listed at the top of the broadcast list. DAB broadcasts that are in the list but have no service in the area will be displayed last in the broadcast list.

OPERATION

LISTENING TO DAB RADIO

MANUAL SCAN

This option allows you to manually tune to a desired DAB broadcast and include it in the service list (if not yet available at the time). You can also use MANUAL SCAN to assist you in positioning the DAB antenna for best reception of the desired DAB broadcast.

- 1 While listening to a DAB broadcast, select "Manual Scan" from "DAB Setup" menu.

```
Manual Scan
6A 181.936M
Status: Tuning
Signal Strength 10%
```

- 2 To select other channels, toggle [◀/▶] to step through the channel list. Release [◀/▶] when you have arrived at your desired channel.

NOTE

The number of ensembles and stations that could be scanned will vary depending upon your location.

PRUNE LIST

There may be situations wherein certain stations become inactive. The "Prune list" option enables the deletion of these inactive stations in the service list.

- 1 While listening to a DAB broadcast, select "Prune List" from "DAB Setup" menu.

```
Prune List
Cancel
▶Confirm Prune
```

- 2 At "Prune List" menu, use [▲/▼] to select between "Cancel" and "Confirm Prune". Any inactive stations (normally preceded by a "?" mark) are automatically deleted when "Confirm Prune" is selected. Otherwise, select "Cancel".

RESET SETTINGS

The "Reset Settings" allows the DAB section of the C 446 to be reset to its factory default settings.

- 1 While listening to a DAB broadcast, select "Reset Settings" from "DAB Setup" menu.

```
DAB Factory Reset
Cancel
▶Confirm Reset
```

- 2 At "DAB Factory Reset" menu, use [▲/▼] to select between "Cancel" and "Confirm Reset". Selecting "Confirm Reset" will cause the DAB section to be reset to its factory default settings. Otherwise, select "Cancel".

INFORMATION SETTINGS

While listening to a DAB broadcast, the type of information displayed in the second line of the VFD can be varied. Toggle TNR 2's [INFO] button to step through the following display options

- station name
- program type
- ensemble name
- time and date
- audio signal information
- others

Above information may not always be available and are dependent upon the DAB station's supplied information.

The scrolling text (if available) at the bottom line of the VFD is the Dynamic Label Segment (DLS). It may contain information on music titles or details regarding the program or station.

CONDITION	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
No power.	• The power cord is disconnected.	• Plug the power cord into the wall outlet securely.
	• Rear panel POWER switched off.	• Set rear panel POWER switch to ON.
No sound.	• Faulty/missing cables.	• Check cables.
No RDS information.	• Station signal too weak.	• Check station tuning. Adjust or replace antenna.
	• Station not transmitting RDS data.	• Tune to an RDS station that supports program-service name (PS mode) and radio-text (RT mode).
Display shows “No Items”.	• DAB antenna not connected properly.	• Check the connection and position of DAB antenna.
	• No DAB coverage in the area.	• Call your local DAB broadcast service provider for coverage information.
Display shows “Action Failed” at Internet Radio mode.	• Tuning error or unintended misuse.	• Toggle [◀ SOURCE ▶] to cycle through the sources and back to Internet Radio mode.
		• Check network connection.
		• Restore C 446 to its factory default settings.
Display shows “Operation Failed” at Internet Radio mode.	• Weak or unstable broadcast.	• Select again the internet radio station from your list until it stabilizes and broadcasts properly.
		• Check network connection.
C 446 does not respond to remote control commands.	• Batteries are flat or incorrectly inserted.	• Check batteries.
	• Infrared receiver (IR) window of C 446 or IR transmitter of the remote control is obstructed.	• Check IR windows and ensure clear line-of-sight from remote to C 446.
	• C 446 front panel is in very bright sunlight or ambient light.	• Reduce sunlight/room lighting.

REFERENCE

SPECIFICATIONS

FM SECTION

Usable Sensitivity (98 MHz)	10 dBμ
Signal/Noise Ratio	65 dB (60 dBμ IHF-WTD Mono) 60 dB (60 dBμ IHF-WTD Stereo)
Frequency Response	±1.5 dB (20 Hz - 15 kHz, 60 dBμ)
Channel Separation (60 dBμ) - 30 Hz	33 dB
1 kHz	40 dB
10 kHz	32 dB
Capture Ratio (40 dBμ)	3 dB
AM Suppression	50 dB (60 dBμ, 100% Mod. FM, 30% Mod. AM)
Image Rejection (119.4 MHz)	70 dB
I.F. Rejection (10.7 MHz)	70 dB
Pilot Suppression (60 dBμ)	60 dB
Total Harmonic Distortion* - Mono	0.4%
Stereo	0.8%
Auto Search Sensitivity	24 dBμ
RDS Decode Sensitivity	26 dBμ

AM SECTION

Usable Sensitivity (999/1000 Hz)	55 dBμ
Signal/Noise Ratio (5 mV in)	42 dB
Total Harmonic Distortion (5 mV in)	1.5%
IF Rejection (450 kHz)	40 dB
Image Rejection (F+2xIF)	28 dB
Selectivity	20 dB
Loop Sensitivity (20dB S/N) - 999/1000 Hz	66 dB
603/600 Hz	66 dB
1404/1400 Hz	66 dB
Frequency response (100 - 2.3 kHz, 5 mV)	±6 dB

DAB SECTION

BAND 3

Tuning range	175.280 – 240.000 MHz
Large signal handling capacity	0 dBm
Sensitivity	-97 dBm
Far off selectivity	40 dB
Adjacent channel rejection	40 dB

PLAYABLE MEDIA FORMAT

WAV	up to 1.536 mbit/s
FLAC	up to 1.5 mbit/s
AAC	up to 320 kbit/s
MP3	up to 320 kbit/s
WMA	up to 320 kbit/s

INTERFACE

Wired	10/100 Ethernet
Wireless (Wi-Fi)	802.11/b/g

GENERAL SPECIFICATIONS

Standby power	<0.5W
Analog audio output	2 Vrms
S/PDIF audio output	3.3 V
Unit Dimension (W x H x D) - Gross	435 x 99 x 341 mm 17 1/8 x 3 15/16 x 13 7/16 inches
Net weight	4.8 kg (10.6 lbs)
Shipping weight	6.5 kg (14.3 lbs)

* 60 dBμ, L=R 75 kHz for 120V version; 40 kHz Dev for 230V version)

Specifications are subject to change without notice. For updated documentation and features, please log onto www.NADelectronics.com for the latest information about C 446.



www.NADelectronics.com

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C446_ENG_OM_V10 - 06/11