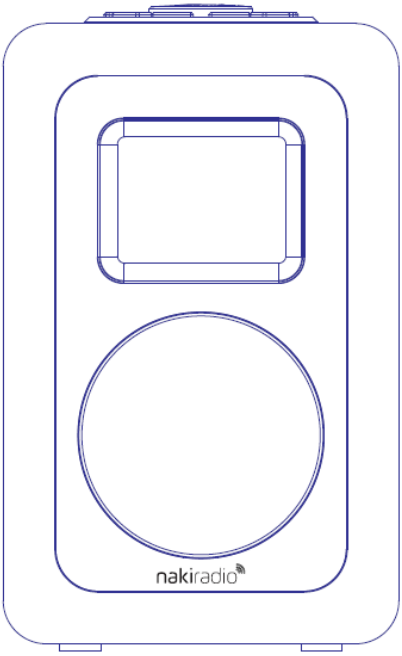
MK100 internet Radio

Instruction Manual



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1. Safety

1.1 Safety Instructions

Please store this instruction manual for future reference.

- WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.

- WARNING: The direct plug-in adapter is used as disconnect device, the disconnect device shall remain readily operable.

-

- - This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

- - Warning: To reduce the risk of electric shock, do not remove cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.

- - The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.

- Correct Disposal of this product. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To

prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

- No naked flame sources, such as lighted candles, should be placed on the apparatus.
- CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
- WARNING: The battery (battery or batteries or battery pack) shall not be exposed to excessive heat such as sunshine, fire or the like.
- Do not use this product near water or moisture.
- Clean only with a dry cloth.
- Unplug this product from the wall outlet before cleaning.
- Place the unit on a solid surface.
- Do not put it in a closed bookcase or a cabinet that may keep air from flowing through its ventilation openings.
- Do not install near any heat sources, such as radiators, heat registers, stoves or other appliances that produce heat.
- Protect the power cord from being walked on or pinched, particularly at plugs and the point where they exit from the product.
- Servicing is required when the product has been damaged. Do not attempt to service this product yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Please contact the manufacturer to be referred to an authorized service center near you.
- To prevent risk of fire or electric shock, avoid over loading wall outlets extension cords, or integral convenience receptacles.
- Do not let objects or liquids enter the product.
- Use proper power sources. Plug the product into a proper power source as described in the operating instructions or as marked on the product.

1.2 Features

This manual describes how to use the MK100, an advanced but easy-to-use Wi-Fi connected audio system with the following modes:

- **Internet Radio** with access to over 20,000 stations by wifi streaming or Wired Ethernet connected, 'Listen again' broadcasts and podcasts
- **Aux in** for external MP3 music sources from iPod/iPad or other MP3 players

MK100 also provides the following features:

- TFT color display for easy control and clear information display.
- Clock with auto-update capability and dual independent alarms Sleep/snooze
- Multiple network profiles for easy setup and portability
- Multiple languages options.

1.3 Carton contents

After you unpack the box, you will find the following items

- 1 MK100 unit
- 1 DC 9V 1.5A power adapter
- 1 owner's manual

1.4 External resources

To operate MK100, the following external resources are needed:

- A power source (100-240 V mains supply)
- A wireless (Wi-Fi) network (provided through a router) with Appropriate permissions and password if necessary (for Internet radio and Network Music player modes)

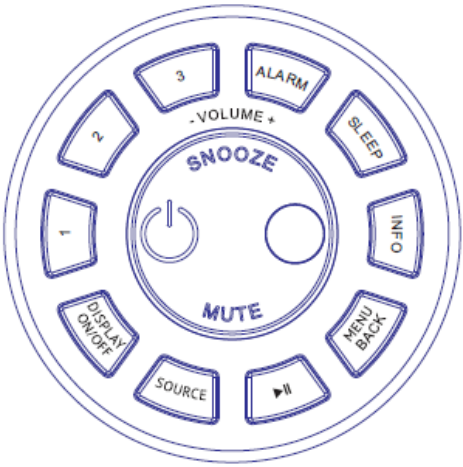
- Broadband Internet access (for Internet radio mode and Spotify mode and Internet Software Update)
- An external audio source (for Aux in mode)

1.5 Conventions used in this manual

Button	(press) Physical button on the keypad
Option	(select) Menu option shown on the display
Name	Menu, screen or other name

2. Controls, connectors and display

2.1 Main controls



1 **SELECT/ VOLUME/MUTE/SNOOZE:**

a. SELECT: Turn to scroll through a menu or station list. The chosen option is highlighted in yellow text), Press to the button to select.

b. VOLUME: Turn to the button to adjust the volume up or down when playback.

c. MUTE: Press to the button to mute the music when playing.

d. SNOOZE: Press the button to snooze a set time when alarm sounding.

e. **Power on / off:** Turn on or back to standby mode (showing clock and date), or cancel sleep, or cancel alarm function.

2 **SLEEP:** When playing, press to Sleep, MK100 will back to set sleep time.

When playing, opens the sleep menu to set the time interval before the unit is set to Standby mode. When alarm is sounding, allows you to set the snooze interval.

3 **SOURCE**: Press to Source to select different modes internet radio, Aux.

4 **ALARM:** Press to Alarm, the screen will display Alarm 1 and Alarm 2; then Rotate and press the SELECT tune knob to select alarm 1 or alarm 2 to set up.

5 **INFO:** View more information about the station or track playing. Press again to cycle through further information screens then return to the Now playing screen.

6 **BACK/MENU**:

BACK: press the BACK to return to the previous screen.

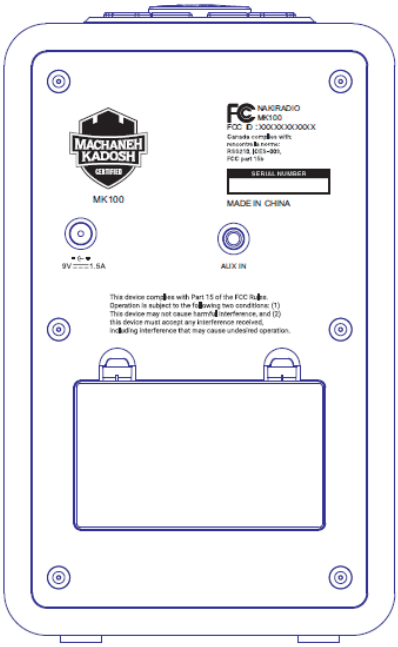
MENU: press the MENU to show the MENU for the current mode. Press again to show now playing screen.

7. DISPLAY ON /OFF

8. **PRESET:** Long press button 1,2,3 to preset and save your favorite stations save 20 favorite stations); Short Press button 1,2,3 to select the favorite station to play or Preset recall. You can save 20 stations by press button 3 and by scroll the preset list to achieve.

9. ▶ II : Press to select Play/Pause under internet radio, Spotify, My music and WIFI model.

2.2 Connectors



As shown below has connectors (from left to right) for the following:

- DC power in (9V)
- Aux in (to connect external MP3 music source from the iPod, or Pad other device)

2.4 Screens

The screen shows various menus, dialogues and displays as described below. There are basically six types of screen:

• Standby (clock)

• Splash (mode)

• Now playing

• Dialogue

• Error/Information

• Menu

Where there is more text than can be fitted onto a screen, the text automatically scrolls right to left after a brief pause.

The **Standby screen** shows the time, date and any active alarm times.

A **splash screen** is displayed for each mode. Press source to cycle through the listening modes.

Now playing screens show information about the audio source and track now playing, where available.

Dialogue screens are shown to allow the user to change settings. They vary in complexity from simple Yes/No options up to the scrollable network passphrase input screen.

The selected option is highlighted with a yellow background. Dialogue screens mark the currently saved setting with an asterisk (*).

Error/Information screens give specific messages for a few seconds, then change automatically to the next screen.

Menu Screens – for details of menu screens see under Section 2.7 Menu**.**

2.5 Operation

After the initial setup, MK100 is ready for operating in most Modes.

To select a Mode, press source until the required Mode splash screen is displayed. After a brief moment MK100 switches to that mode. The last station or track previously used in that mode is selected. If this is not possible, MK100 scans for relevant stations, networks, or prompts the user for appropriate input. See the relevant Mode section for details of how to use each listening mode.

The Common local controls for sound volume, Mute and Play/Pause are available in all listening modes.

2.6 Menu navigation

The primary control for moving through menus and options is the Select Control. Rotate the control to move up or down a menu. Once the required option or value is highlighted press the Select Control. All menus and lists act as loops such that turning the control to go beyond the first or last entry in a menu or list takes you to the opposite end of the menu or list. So going up from the first entry in a menu will take you to the last option in the menu, etc.

A “>” appears on the right of the screen if there are more options above or below those visible.

To enter the menu tree in a particular mode press Menu . To move back a menu level press Back. To exit the menu system, press Menu again. Each mode has a **Mode menu**, with options specific to that mode.

For example, the FM mode menu has two mode specific options: Scan setting and Audio setting.

In addition, each mode menu has two final options: **System settings >** and **Main menu >**. The ‘**>**’ indicates options leading to further menus.

The **System settings menu** presents system setting functions to allow the user to setup how the unit behaves. This includes Equalizer, network, time/date, language, factory reset and software update…….

3. Started and setup

MK100 is easy to use. To play DAB or FM radio, all you need is a power source (a 100-240 V mains supply); For Music Player mode, you need a wired/wireless Ethernet network and a UPnP music server (e.g. a PC). For Internet-connected modes such as Internet radio, you also need a broadband Internet connection.

3.1 Setup wizard

When MK100 is started for the first time, it runs through a setup wizard to configure Settings for date/time and network. Once this has finished, the system is ready to use in

modes.

Note: To change these settings later, select **Menu** > System settings >.

To run the setup wizard again, select **Menu** > System settings > Setup wizard.

Select Yes to start the setup wizard.

If you choose No, the next screen asks if you would like to run the wizard next time MK100 is started. The system then starts without configuring time/date and network settings and enters the Main Menu.

Note: If power is removed while the wizard is in progress, the wizard will run again next time MK100 is started.

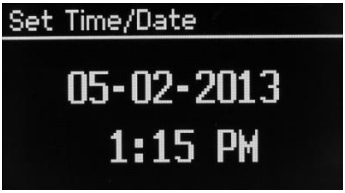
3.1.1 12/24 hour display

To change between 12 and 24 hour display, select Set 12/24 hour and then select your preference.

3.1.2 Set Time/Date (wizard)

The date and time are displayed as dd-mm-yyyy and hh:mm AM/PM with the first value, dd, active (flashing).

Adjust each value with the Select control. As each value is set by pressing the Select control, the next value becomes active ready for adjustment.



Auto-update

Auto-update works with data sent over the Internet. The clock is only updated when in a corresponding mode, so it is best to select a mode you use regularly.

DAB and FM use time signals broadcast with radio transmissions.

Network uses a time signal sent from the Internet radio portal when in any network-connected mode.

1.Select Update from DAB, Update from FM, Update from Network or No update.

2. If you are updating from the network, set your time zone.

3. If your country uses daylight saving, the automatically updated time from the network may be wrong by one hour. When daylight savings are in effect (during the winter), turn on the Daylight savings option to rectify this.

Note that if you are updating the time from DAB or FM, the Daylight savings option has no effect on the clock's time.

MK100 will auto-update from the selected source when time information is available.

Manual set

If you set No update, the wizard now prompts you to set the time and date manually.

The date and time are displayed as dd-mm-yyyy and hh:mm AM/PM with the first value, dd, active (flashing).

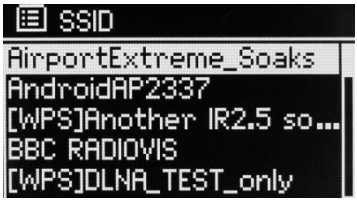
Adjust each value with the **Select** control.

As each value is set, the next value becomes active and flashes.

3.1.3 Network

MK100 is compatible with all common network protocols and encryption methods, including Wi-Fi Protected Setup (WPS).

To connect MK100 to your network, you need a Wi-Fi wireless router, together with password key if set Select WLAN region/country >Wi-Fi network (SSID), and then select a network from the list.



If the network is open (non-encrypted), MK100 connects and no further details are required; see Completion below.

Standard encrypted network

To enter the network's key (password), use the Select control to highlight the next relevant character and press to select each character in turn. As each character is selected, the key is built up near the top of the display.

The three options – Backspace, OK and Cancel are included in the selection loop. These can be accessed just using the Select control, or, a short cut is available, pressing the Info key, which moves the selection highlight to the Back Space option.

WPS setup

WPS encrypted networks are identified by '[WPS]' at the start of the network name, and have two methods of connection. Select one and follow the prompts. When using the network wizard an additional option to Skip WPS is available.

Select one and follow the prompts:

• Push Button >

MK100 prompts you to press the connect button on the router. It then press the select control.

• Pin > (code number)

MK100 generates an 8-digit code number which you enter into the wireless router, access point.

• Skip WPS >

Enter key as for a standard encrypted network, above. For more information on setting up a WPS encrypted network, see your WPS router's instructions.

On completion

MK100 connects to the selected network.

If connecting fails, MK100 returns to a previous screen to try again. To exit the process use the Back/Menu button

3.2 Other settings

Sections for those modes. Common settings are covered below.

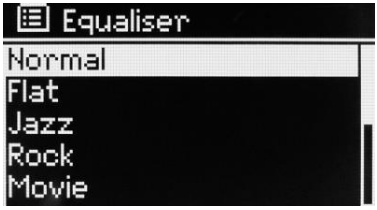
3.2.1 Equalizer

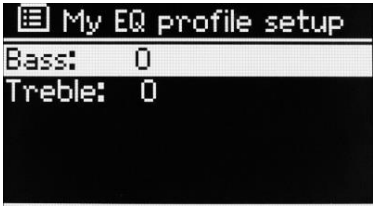
Several preset EQ modes are available; also a user-defined setting (My EQ).

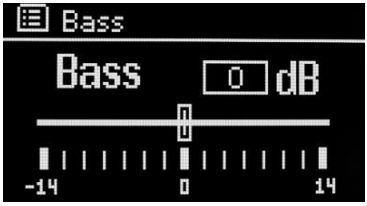
To choose an EQ setting, select **Menu >System settings > Equaliser.**

You can then choose from a variety of preset modes and My EQ

The last option 'My EQ profile setup' allows you to define your own settings for the 'My EQ' option, with custom bass, and treble settings.







3.2.2 Network

MK100 remembers the last four wireless networks it has connected to, and automatically tries to connect to whichever one of them it can find. You can see the list of registered networks through **Menu** > System settings >Network > Network profile >From here you can delete unwanted networks by turning and pressing Select then confirming delete Yes.

There are also other options for viewing and manually altering network settings from **Menu** > System settings > Network > (for example setting up a wired network).

Users experienced with networking may find these options useful for diagnosing and fixing network problems.

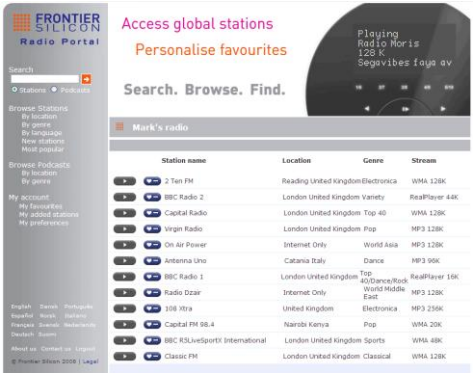
3.2.3 Language

The default language is English. To change, select **Menu > System settings**

>Language >then select your language.

3.3 Internet radio portal registration

MK100 uses the Frontier Silicon Internet radio portal website that allows you to organize your favorite's lists and also listen to Internet radio on a computer.



To register your MK100 with the portal, switch to Internet radio mode and then obtain your radio's unique portal access code by selecting **Menu >Station list > Help > Get access code >**Write down the access code.

Note: The displayed access code is only valid for a few minutes. If you fail to register your radio within the time window you will need to repeat the above step to get a new access code and try again. Do not confuse the portal access code with the Radio ID (from Menu > **System settings > Info**.)

Visit the portal website at www.wifiradio-frontier.com.

If this is your first visit to the portal, register for a new account, entering the following information:

- access code,
- your e-mail address,
- passphrase,
- radio model (MK100).

If you already have an account and wish to add an additional radio, log in to your account and select **My preferences** > **Add another Wi-Fi radio**.

Once your radio is registered with the portal, you can immediately use the Internet radio favorites and added stations features.

4. Internet radio mode

MK100 can play thousands of radio stations and podcasts from around the world though a broadband Internet connection.

When you select Internet radio mode, MK100 contacts the Frontier Silicon Internet radio portal to get a list of stations, organized into different categories like Country, Most popular and Genre.

Once you select a station, MK100 connects directly to that station.

The portal also enables multiple lists of favourite stations that you can personalise, for example Andy's stations, Jo's favourites, Talkshows. To use the favourites feature, register your radio with the portal website as described on page 29. If you have several Frontier Silicon radios, you can register them all on the same account so that each radio has access to your favourite's lists. It is possible to add favourites either directly through MK100 or through any computer with a web browser.

To enter Internet Radio mode, either press **Mode** until the display shows Internet Radio or select **Menu >Main menu > Internet Radio.**

Note: The station list menu is provided from the Internet radio portal, so it is only accessible when MK100 is connected to the Internet. Station lists and submenus may change from time to time.

There are several ways of selecting stations.

Directly from the radio:

• Last listened

• Presets

From the portal through the **Menu > Station list> menu:**

• Favourites lists

• Browse by Country, Genre, Most popular, Newest

• Search by keyword

• My added stations

4.1 Last listened

When Internet radio mode restarts, the last-listened station is selected. To select another recently used station, select **Menu** > Last listened then one of the stations listed. Most recent stations appear at the top of the list.

4.2 Presets

Presets are stored in the radio and cannot be accessed from other radios.

To store an Internet radio preset, press and hold **Preset** until the display shows the Save preset screen. Select one of the presets to save the currently playing station.

To select a preset, press **Preset** briefly, then select one of the listed preset stations.

When a preset station is playing, it shows ⭐ 1,2,3 etc in the bottom middle of the screen. Note: Operation of presets is identical for Internet radio, DAB and FM.

4.3 Favourites

Favourites are stored on the Internet radio portal. Before you set up an account on the portal from its Web interface (www.wifiradio-frontier.com), the favourites are associated solely with the radio on which you set them. After you set up a portal account, all the favourites from your different radios are merged into a combined favourites list. This combined list is available to all the radios on your account.

To store a playing station as a favourite, press and hold Select until the display shows ‘Favourite added’. The station appears in the default favourites list Stations.

To select a favorite, select **Menu** > Station list > My favorites’ > [Favorites’ list] > [Station].

4.4 Browse

To browse Internet broadcasts, select **Menu**> Station list> then either Stations > or Podcasts >Browse through the menus to find broadcasts.

4. 5 Search

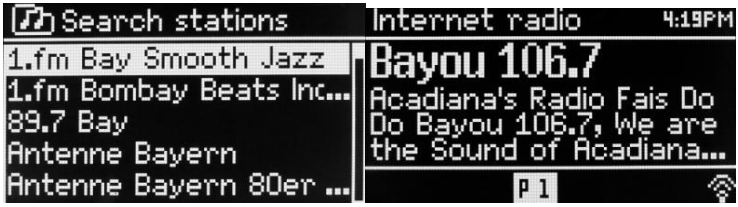
You can also search through Internet broadcasts for stations or podcasts with particular keywords in their title.

To search, select **Menu** > Station list > then either Stations > or Podcasts >

Enter a keyword by selecting characters then OK. The search entry screens are similar in operation to the Wi-Fi password entry screen.

Select a broadcast from the list.

For podcasts, you may be able to select a particular episode.



4.6 My added stations

Even though the Internet radio portal contains thousands of stations, you may want to listen to stations not listed. You can add your own stations via the portal. These added stations are accessible from MK100 by selecting **Menu** > Station list > My added stations > [Station].

4.7 Now playing information

While the stream is playing, the screen shows its name and description. If

artist and track information is available, this is also shown. To view further information, press **Info .**

Each time you press **Info**, another set of information is displayed, cycling through the following details:

• Artist and track name (default; where available)

• Description

• Genre and show country

• Reliability

• Bit rate and Codec and Sampling

• Playback buffer

• Today’s Date

10. AUX mode

Aux in mode plays audio from an external source such as an MP3 player.

To play audio with Aux in mode,

1).Connect the external audio source to the Aux In 3.5 mm stereo socket.

2). Either press **Mode** until the display shows AUX in or select **Menu**> Main menu > AUX in.

3). Adjust the volume of MK100 (and, if necessary, the audio source device) as required.

12. Alarms and sleep

As well as a clock/calendar, there are two versatile wake-up alarms with snooze facility, and a sleep function to turn the system off after a set period. Each alarm can be set to start in a particular mode.

12.1 Alarms

To set or change an alarm, either press **Alarm** or select **Menu** > Main **Menu** > Alarms.

Select the alarm number (1 or 2) then configure the following parameters:

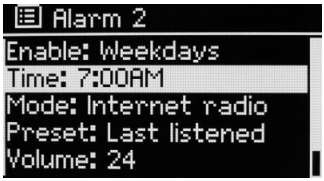
- Enable: on/off,
- Frequency: Daily, Once, Weekends or Weekdays,
- Time,
- Mode: Buzzer, Internet radio
- Preset: Last listened or 1-20,
- Volume: 0 - max.

To activate the new settings, scroll down and select Save.

The screen shows active alarms with an icon at the bottom left.

At the set time, the alarm will sound. To temporarily silence it, press **Snooze** .

You can change the snooze period with the **Select** control if you like. The radio returns to standby for the set period, with the silenced alarm icon flashing.



12.2 Sleep

To set the sleep timer, select **Menu** > Main menu > Sleep then choose from Sleep OFF, 15 MINS,30 MINS, 45 MINS or 60 MINS.

Once you select a sleep period, the system returns to the main menu.

Press **Menu** to return to the Now playing screen.

13. Software upgrades and factory reset

13.1 Software upgrade

From time to time, MK100 may make software upgrades available with bug Fixes and/or additional features. You can either check manually, or set MK100 to check periodically automatically (this is the default). If MK100 detects that newer software is available, it asks if you want to go ahead with an update.

If you agree, the new software is then downloaded and installed. After a software upgrade, all user settings are maintained.

CAUTION: Before starting a software upgrade, ensure that MK100 is plugged into a stable mains power connection. Disconnecting power during a software update may permanently damage the unit.

To turn automatic checking on or off, select Menu > System settings >Software update >Auto-check setting.

13.2 Factory reset

A factory reset resets all user settings to default values, so time/date, network configuration and presets are lost. However, the radio's current software version is maintained, as is registration with the Internet radio portal. Internet radio favourites therefore remain unless you re-register your radio with another account on the portal website.

To perform a factory reset, select **Menu** > System settings > Factory reset proceed >Yes.

14. Troubleshooting and error messages

14.1 Error messages

Message	Description	Example
Failed to connect	Correct key entered, But router rejects request	MAC filtering enabled on router
Format error	Cannot recognise file format -independent of network	Received.wma, but found that the stream wasn't WMA when trying to decode
Network error	Problem past router -incorrect data being received from network	Data obtained from server is unreadable.
Network not ready	Problem with connection to router	Router switched off
Network timeout	Problem past router – no response being received from network	Streaming IR station and suddenly station becomes unavailable

Update failed	Software upgrade failed	

14.2 Troubleshooting

Problem	Cause	Solutions
Cannot connect to network	Network down	Check that network is working between a computer and the router
	Router restricts access to listed MAC addresses	Obtain the MK100 MAC address from Menu > **System settings > Network > View settings** and add to router list.
		Note: MK100 has separate MAC addresses for wired and wireless networks; only the current network adaptor method address is displayed, but the other address can be obtained by changing the first pair of digits between ‘00’ (wireless) and ‘02’ (wired)
	Insufficient Wi-Fi signal strength	Check distance to router; see if a computer can connect to the network in this location
	Unknown encryption method	Change encryption method on router. MK100 supports WEP, WPA and WPA2
	Unusual network configuration	Setup network manually through Menu > **System settings > Network > Manual settings**
	Firewall preventing access	Check the following ports are open on the router: UDP and TCP ports 80 and 123; DNS port 53. Windows shares: ports 135 – 139 and 445. Windows Media Player: varies – non-Microsoft firewalls may require configuration for UPnP.

Problem	Cause	Solutions
Cannot connect to Internet	Internet connection down	Check that Internet is working for a computer connected to the same network
	Firewall preventing access	Check the following ports are open: UDP and TCP ports 80 and 123; DNS port 53. Some Internet radio stations may require additional ports to be opened.
Cannot play particular Internet radio station	Station not broadcasting, overloaded or insufficient bandwidth. Station broadcasting using unknown codec. Link out of date.	Try other stations; try listening on computer via Internet radio portal website; try later.

15 Technical Specification :

Model:	MK100 Internet Radio
Speaker:	1 X 2.5” full range driver
Power:	20W RMS
Power Supply:	9V DC
Dimension (mm):	270W x 110H x 180D
Weight:	1.2Kg

Specifications are subject to change without notice.

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.The device has been evaluated to meet general RF exposure requirement.

To maintain compliance with FCC’s RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.