# **Operation Manual**

Network Tuner





### Welcome

#### A personal welcome to you from the management and employees of Inter-M

All of the co-workers here at Inter-M are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products.

We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to Inter-M, and thank you for becoming part of our worldwide extended family!



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

#### WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant on une autre sortie de courant, sauf si les lames peuvent étre insérées à fond sans en laisser aucune partie à découvert.

\*WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING-WATER AND MOISTURE: Unit should not be used near water(e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so than objects do not fall and liquids are not spilled into the enclosure through openings.

\*CLASS 2 WIRING (Adjacent to speaker terminal): The speaker output of this apparatus can exceed 10 Watts and could be a shock injury. Connection to speakers should be performed by a skilled person.

\*Do not install this equipment in a confined space such as a book case or similar unit.

\*This apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such vases, shall be placed on the apparatus. \*This apparatus shall be connected to a mains socket outlet with a protective earthing connection.

\*It has heed to be easy to disconnect the device. To disconnect the device from power, separate AC input cable from inlet or unplug the AC Cord.

#### CAUTION

\*These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

#### NOTE

\*This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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NTU-100

# Unpacking

Although your NTU-100 is neither complicated nor difficult to operate, we recommend you take a few minutes to read this brief manual and familiarize yourself with the important information regarding product features, setup and operation.

As with most electronic devices, we strongly recommend you retain the original packaging. In the unlikely event the product must be returned for servicing, the original packaging (or reasonable equivalent) is required.

## Installation

#### Environment

Never place this product in an environment which could alter its performance or reduce its service life. Such environments usually include high levels of heat, dust, moisture, and vibration.

# **IMPORTANT SAFETY INSTRUCTIONS**

- 1. Read these instructions.
- 2. Keep these instructions.
- 3. Heed all warnings.
- 4. Follow all instructions.
- 5. Do not use this apparatus near water.
- 6. Clean only with dry cloth.
- 7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11. Only use attachments/accessories specified by the manufacturer.
- 12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13. Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



### **Features**

- Internet Radio Plays internet radio over the network.

- Preprogrammed stations and user-defined stations Preprogrammed 20 stations and additional 20 stations can be stored by the users.

#### - Time scheduled broadcasting include holiday

It allows you to set up scheduled the radio stations to be playback. 50 scheduled broadcasting can be set with 30 different holiday options

- Front OLED DISPLAY

The bright OLED display shows a station info which is currently paying and the status of the unit.

- Contacts Output

When scheduled broadcasting is on. It will be interconnected with external equipment through the output of "dry" contact output.

- Stereo Output (EURO 3P, RCA)

# **Contents and Accessories**

- 1. Power Cord x 1 2. 3P terminal block x 3 3. Screw for Rack Mount x 4 4. Washer x 4 5. Lan Cable x 1
- 6. Operation Manual x 1

### **Front Panel**

1 2 3 4 3	

#### 1. MODE

Use this button to check the firmware version info or IP address

#### 2. CH▲ / CH▼

Selects the desired station by using UP KEY / DOWN KEY

#### 3. ENTER

Use this key to start or stop the selected station. By pressing the button briefly, It will play the selected station and pressing the button for a longer period, it will stop the playing.

#### 4. OLED DISPLAY

It displays a network setting IP address, server connection and radio operation status.

#### 4-1 Booting screen



While the unit is in booting mode, 'BOOTING...' message will be appeared in the screen.

#### 4-2 Standby screen



When the booting is completed, 'BOOTING...' message will be disappeared in the screen.

#### 4-3 Station selection screen



Can be identified the stored station list by pressing the CH▲ / CH▼ button

4-4 connecting screen



ENTER button is pressed to play then 'Connecting' message will be displayed in the screen.

#### 4-5 radio playback screen



When the selected station starts to broadcast, 'Playing' message and a title of station will be displayed in the screen.

#### 4-6 connection fail screen



If network connection is unstable or the desired station has problem with server, 'Connect Fail' message is displayed in the screen.

4-7 time schedule playback screen



When times scheduled broadcasting is activated, 'Playing' message and the title of a scheduled broadcasting will be displayed in the screen.

#### 4-8 system info display



By pressing MODE button once, it displays IP address



by pressing MODE button once more, it displays current software version And by pressing MODE button once more, it goes back to initial screen

#### 4-9 Upgrade screen



While a firmware is being updated, 'UPGRADE...' message is appeared in the screen.

#### 4-10 Factory reset screen



While a firmware is being updated, 'FACTORY...' message is appeared in the screen.

#### 4-11 Display OFF screen



The display is will be off when there is no operation detected for 3 minutes.

#### 5. POWER LED

It displays a power status.

### **Rear Panel**



#### 1. AC INLET

Connect the power cable which is supplied with the unit.

#### 2. REMOTE OUTPUT

This is a terminal to transmit "dry" contacts output when a scheduled broadcast is activated.

#### 3. EURO TERMINAL AUDIO OUTPUT(STEREO OUTPUT)

EURO 3P Balanced Audio output

#### 4. RCA AUDIO OUTPUT

Unbalanced Audio output

#### 5. SERVICE PORT

This is a Debug Port for service

#### 6. NETWORK CONNECTION TERMINAL

This is a RJ45 network terminal It connets NTU-100 to the internet using an ethernet switch, router or PC. The network port supports 10/100mbps



PIN NO.	Function
1	TXN
2	ТХР
3	RXN
4	NA
5	NA
6	RXP
7	NA
8	NA



#### 7. RESET SWITCH

This is a factory reset switch. By pressing the switch for more than 5 seconds, all setting values are initialized to the factory release/default status.

# Webpage Setting

#### 1. Accessing to the NTU Web-browser

Enter the basic address of NTU-100 '192.168.1.99' in the address window of Internet browser. As IP address is changed, pressing the MODE button and checking IP or pressing the reset switch on the rear side of the equipment for 5 seconds, the factory is initialized to 192.168.1.99.

🕜 http	o://192.168.1.99/	
ID :	admin	]
PW:	•	]

Default (ID : admin , PW : 1)

#### 2. Network Setting

		NTU-100 / 192.168.1	.99 / Version : 1.9.1.5 한국어 English						
System Setup Network Setup	Setup network co	onfigurations							
a Radio Setup	MAC address	00:1D:1D:01:08:64							
□ Time Setup □ View Log	Host name	NTU-100							
<ul> <li>Administrator Menu         <ul> <li>Upgrade System</li> <li>Restart System</li> <li>Factory Set System</li> <li>Password Change</li> </ul> </li> </ul>	IP address	C Dynamic IP assignment from DHCP Server Manual Setting IP address 192.168.1.99 Subnet Mask 255.255.0 Gateway 192.168.1.1 DNS 1 Server 168.126.63.1 DNS 2 Server 168.126.63.2 Apply In							
	<ul> <li>* Help&amp;Tips</li> <li>It configures the way for system to connect to Internet.</li> <li>If the IP Address changes Please access the web page again.</li> <li>Space cannot be included in the host name.</li> <li>The character of the host name must be an alphabet or a digit!</li> </ul>								
	c	Copyright (c) 2013 <b>Inter-M</b> All righ	ts reserved.						

1) Collect information on your network configuration.

- A range of free IP addresses that can be allocated to the NTU-100 unit(s) without network conflicts.

- The correct subnet mask.

- The address of the Gateway and the DNS servers if you want your NTU-100 to be able to connect to the Internet.

2) Open the web interface of your NTU-100.

3) Select the Network Setting page.

- In the IP Address window, it shows the current network configuration of the NTU-100 including the IP address, host name and MAC address. If the NTU-100 is configured to use DHCP, then these details will not be shown.

4) Enter the static IP address and the subnet mask.

- Select the manual setting.

- Assign a static IP address to the NTU-100.

- Ensure that the subnet mask and Gateway corresponds to your network configuration.

- Other network settings are optional.

5) Validate the changes.

- Validate the new network configuration with the Apply button.

If IP address or network configuration is changed, then have to connect the network with the changed IP address.

#### 3. Time Signal Setting

This menu allows you to set up scheduled radio to be playback.

	NTU-100										
		NTU-100/192.168.1.99/Version: 1.9.1.5 한국어 English									
System Setup Network Setup Time Sized Setup	Time Signal Setup										
Radio Setup     Time Setup     Time Setup	ENABLE	© On C Off									
J View Log	Config File	info_schedule.xml Download									
<ul> <li>Administrator Menu</li> <li>Upgrade System</li> <li>Restart System</li> </ul>	Schedule Table View	View Table									
<ul> <li>Factory Set System</li> <li>Password Change</li> </ul>	Schedule List	Add Delete Modify									
	Holiday	Setup Delete									
	* Help&Tips										
	Time signal can be set up.										
	<ul> <li>Upload the maximum capacity of the disk usage is up to 95 percent.</li> </ul>										
	<ul> <li>The maximum number of time signal list is 50.</li> </ul>										
	<ul> <li>The maximum number of</li> </ul>	holiday list is 30.									
	<ul> <li>case that Internet Explorer version is lower than 9, Function about download or upload is not work properly.</li> </ul>										
	Copyrig	ht (c) 2013 Inter-M All rights reserved.									

#### 1) USE

Activates the time signal schedule.

#### 2) View Table

Shows the current schedule. The following window will be opened when you click 'VIEW TABLE'.

Inter	7	Time Schedule list														2014.0 9:06	5.26 :41														
			Hour Day of the week																												
Name URL	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	SUN	MON	TUE	WED	THU	FRI	SAT
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(1) Name : Indicates the title of the Schedule.

(2) URL : Put your mouse over the icon and the set URL name will appear.

(3) Hour : Displays the set start and end time.

(4) Day of the Week : Displays the day of the week.

#### 3) ADD

Press the 'Add' button to add a internet radio station. The following screen will appear.

Time Schedu	ule Add Event
Title	
File	mbc standard fm MBC FM4U MBC AM SBS PowerFM CBS STANDARD FM CBS MUSIC FM YTN FM 94.5MHz KUKDONG BROADCASTING BUDDHISM BROADCASTING BBS PYLINGHWA BROADCATING PBC
Time	Current Time : 2014.02.15 22:28:53           Start         HH           MM           End         HH
Day of Week	SUN     MON     TUE     WED     THU     FRI     SAT     All       Image: Im
	Initialize Save

(1) Title : Indicates the title of the schedule.

(2) File : Select a internet radio station play.

(3) Time : Playing time.

(4) Current Time : Current NTU-100 internal time is displayed.

(5) Specified Time : The selected station will play for the interval set from 'start time' will repeat until the 'end time'.

(6) Day of Week : Set the desired day of broadcasting.

(7) Time schedule can be stored up to 50 events.

4) Delete : Press to delete a schedule and the following screen will appear:



- (1) Delete : Delete the selected schedule.
- (2) Select all : Select or clear the entire list.

5) Modify : Modify the time schedule. After modify the schedule, press the Apply button

Time Schedu	ule Modify Event
Schedule List	test sample
Title	test sample
File	mbc standard fm MBC FM4U MBC AM SBS PowerFM CBS STANDARD FM CBS MUSIC FM YTN FM 94.5MHz KUKDONG BROADCASTING BUDDHISM BROADCASTING BBS PYLINGHWA BROADCATING PBC
Time	Current Time : 2014.02.15 22:28:00           Start 12 HH         10 MM           End 13 HH         10 MM
Day of Week	SUN     MON     TUE     WED     THU     FRI     SAT     All       Image: Comparison of the state o
	Initialize Apply Copyright (c) 2013 Inter-M All rights reserved.

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#### 6) Holiday

Holiday schedule programming. The schedule is not broadcasted on the selected date. The following screen will appear.



- (1) Add : Add a holiday.
- (2) Enable : Select ENABLE to use the holiday setup.
- (3) Start/End Date : Set the start date and the end date of the holiday setup.
- (4) Start/End Time : set the start time and the end time of the holiday setup. Press the save button to save the holiday setup.
- (5) holiday can be set up to 30 events.

#### 7) Delete



(1) Delete : Delete the selected holiday schedule.

(2) Select all : Select or clear the entire list.

#### 4. Internet Radio Setting

		NTU-100							
System Setup	Radio Setup	NTU-100 / 192.168.1.99 / Version : 1.9.1.5 한국어 English							
J Time Signal Setup J Radio Setup	Channel list	Fixed channel							
J Time Setup	Only user-defined channels displayed on the LCD								
J VIEW LOG	Channel title	Classic FM 100.9MHz							
<ul> <li>Administrator Menu</li> <li>Upgrade System</li> <li>Restart System</li> <li>Factory Set System</li> <li>Password Change</li> </ul>		Play     Stop       User defined							
	* Help&Tips								
	<ul> <li>From the [channel list] and selecting a major category, you will see a small classified in the [channel title].</li> </ul>								
	<ul> <li>When you press the Play button, the radio button that corresponds to the [title of the channel] is playing.</li> </ul>								
	Соруг	ight (c) 2013 Inter-M All rights reserved.							

The channel list consists of two different categories which are Fixed channel and User defined channel. Fixed channel consists with 20 preset channels and User defined channel can be set up to 20 channels.

- (1) The fixed channel or user-defined channel can be selected from Channel list.
- (2) Then selects desired broadcasting title from the Channel title then click the play button to play and click the STOP button to finish.

#### 4-1 Internet Radio Setting- user defined channel

The following window will appear when the user define button is selected

	User defined	
Apply	Initialize	
User de	fined broadcast #1	
Title		
URL		Remove
User de	fined broadcast #2	
Title		
URL		Remove
User de	fined broadcast #3	
Title		]
URL		Remove
User de	fined broadcast #4	
Title		
URL		Remove
User de	fined broadcast #5	
Title		]
URL		Remove
User de	fined broadcast #6	
Title		
URL		Remove
User de	fined broadcast #7	
Title		]
URL		Remove

Type the title and URL of desired station then click the Apply button to finish. Up to 20 channels can be added or deleted randomly by user

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#### 5. Time Setting



Time zone and current time can be set.

1) Time Zone

The default time zone is (GMT+09:00) Seoul.

- Select a correct time zone in the box according to your geographical zone.
- 2) Current Time

Displays the current date and time.

- 3) Time Setup
- (1) Manual Setup

NTU-100 uses internal clock to make time so that its time has some drift from the correct time. It is needed to adjust the time regularly.

(2) Automatic Time Synchronization

It synchronizes the time from the time server so that NTU-100 can maintain the correct time. The default time server is time.bora.net.

6. Log View

	NTU-100	
	NTU-100/192.168.1.99/Version:1.9.1.5 한국어	English
System Setup	View log file	
<ul> <li>Time Signal Setup</li> <li>Radio Setup</li> </ul>	End of log file	*
J Time Setup		
J View Log		
🗵 Administrator Menu		
Upgrade System		
Restart System		
Password Change		
	Refresh Clear Log	
	* Help&Tips	50
	<ul> <li>You may clear all log by clicking 'Clear Log' button.</li> </ul>	
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This page displays the log information of the NTU-100 setting and history of modification with time. Refresh – the current log details will be renewed Clear Log – the current log details will be deleted.

#### 7. System Upgrade

Inter		NTU-100 / 192.168.1.99 / V	ersion : 1.9.1.5 한국어 English		
System Setup	System Upgrade				
<ul> <li>Time Signal Setup</li> <li>Radio Setup</li> </ul>	S/W Upgrade		Apply		
J Time Setup	MainBoard Upgrade		Apply		
Administrator Menu Upgrade System Restart System Factory Set System Password Change	* Holp&Tips				
	<ul> <li>Firmware file is an ungrade-file that is located in upur local PC</li> </ul>				
	<ul> <li>It may several minutes to complete upgrading. Please do not leave this page until a new page appears.</li> </ul>				
(Caution) Upgrading with inappropriate file may cause harm to the system.					
	<ul> <li>(Caution) Do not turn off the system during upgrading.</li> </ul>				
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Down load the new firmware to your computer.

Go to the system upgrade page.

Choose the firmware from your computer using the ' … ' Tab. Start the firmware upgrade by clicking the 'Apply' button. Network settings will be retained after the upgrade.

#### 8. Restart



To restart the NTU-100, press the 'Apply' button. Reboot process takes about 30 seconds.

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#### 9. Factory Setting



To reset the NTU-100 to factory default, press the 'Apply' button.

Reset process takes about 30 seconds. The network and time setting will be reset to default setting.

#### 10. Password Setting

Intorvi	NTU-100			
IIIIGI MI		NTU-100/192.168.1.99/Version:1.9.1.5 한국어	English	
<ul> <li>System Setup         <ul> <li>Network Setup</li> <li>Time Signal Setup</li> <li>Radio Setup</li> <li>Time Setup</li> <li>View Log</li> </ul> </li> </ul>	Password Change			
	Current Password			
	New Password			
<ul> <li>Administrator Menu</li> <li>Upgrade System</li> <li>Restart System</li> <li>Factory Set System</li> <li>Password Change</li> </ul>	Password Confirm			
	Apply Initialize			
	* Help&Tips			
	Change the new password.			
	<ul> <li>15 letters and numbers you entered.</li> </ul>			
	Copyright (c) 2013 <b>Inter-M</b> All rights reserved.			

Current Password – Enter the current password. New Password – Enter the new password. Password Confirm – Confirm the new password. Press the 'Apply' button. Default password is '1'.

To keep security, the password have to be changed to new one before use.

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# System Connection



# **Block Diagram**



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# **Specifications**

		NTU-100	
Broadcasting Reception		Network (TCP/IP), RJ-45 connector	
T.H.D @ 1kHz		Less than 0.1%	
S/N @ 1kHz		Better than 85dB	
Level	RCA	0dBV	
of Speaker Output	XLR	OdBV	
Operating Temperature		0°C ~ +40°C	
Power Source		AC 220-240V 50/60Hz	
Power Consumption		8.5W	
Weight (Set)		3.08kg/6.8lb	
Dimensions (Set)		482(W) x 44(H) x 280(D) mm / 19(W) x 1.7(H) x 11(D)in	

#### **\***DIMENSIONS



# InterM



Inter-M, Ltd. (Korea) began operations in 1983.

Since then, Inter-M has grown to become one of the largest manufacturers of professional audio and commercial sound electronics equipment in the world.

Inter-M has gained worldwide recognition for its own branded products, as well as private label manufacturing of electronics sold under other names (OEM).

The company is no longer just a Korean company, but rather a global company that is truly international in scope, with factories and offices in Korea and China, and sales and marketing operations located in Japan, Europe, and the U.S.A.

With more than 850 employees around the globe, Inter-M is well-poised for further growth and expansion.

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