

# marantz®

## Model ST-15S1 User Guide

---

DAB / FM / AM Tuner

## ENGLISH

### **WARRANTY**

For warranty information, contact your local Marantz distributor.

### **RETAIN YOUR PURCHASE RECEIPT**

Your purchase receipt is your permanent record of a valuable purchase. It should be kept in a safe place to be referred to as necessary for insurance purposes or when corresponding with Marantz.

### **IMPORTANT**

When seeking warranty service, it is the responsibility of the consumer to establish proof and date of purchase. Your purchase receipt or invoice is adequate for such proof.

### **FOR U.K. ONLY**

This undertaking is in addition to a consumer's statutory rights and does not affect those rights in any way.

## FRANÇAIS

### **GARANTIE**

Pour des informations sur la garantie, contacter le distributeur local Marantz.

### **CONSERVER L'ATTESTATION D'ACHAT**

L'attestation d'achat est la preuve permanente d'un achat de valeur. La conserver en lieu sûr pour s'y reporter aux fins d'obtention d'une couverture d'assurance ou dans le cadre de correspondances avec Marantz.

### **IMPORTANT**

Pour l'obtention d'un service couvert par la garantie, il incombe au client d'établir la preuve de l'achat et d'en corroborer la date. Le reçu ou la facture constituent des preuves suffisantes.

## DEUTSCH

### **GARANTIE**

Bei Garantiefragen wenden Sie sich bitte an Ihren Marantz-Händler.

### **HEBEN SIE IHRE QUITTING GUT AUF**

Die Quittung dient Ihnen als bleibende Unterlage für Ihren wertvollen Einkauf. Das Aufbewahren der Quittung ist wichtig, da die darin enthaltenen Angaben für Versicherungszwecke oder bei Korrespondenz mit Marantz angeführt werden müssen.

### **WICHTIG!**

Bei Garantiefragen muß der Kunde eine Kaufunterlage mit Kaufdatum vorlegen. Ihre Quittung oder Rechnung ist als Unterlage ausreichend.

## ESPAÑOL

### **GARANTIA**

Para obtener información acerca de la garantía póngase en contacto con su distribuidor Marantz.

### **GUARDE SU RECIBO DE COMPRA**

Su recibo de compra es su prueba permanente de haber adquirido un aparato de valor. Este recibo deberá guardarlo en un lugar seguro y utilizarlo como referencia cuando tenga que hacer uso del seguro o se ponga en contacto con Marantz.

### **IMPORTANTE**

Cuando solicite el servicio otorgado por la garantía el usuario tiene la responsabilidad de demostrar cuándo efectuó la compra. En este caso, su recibo de compra será la prueba apropiada.

## ITALIANO

### **GARANZIA**

L'apparecchio è coperto da una garanzia di buon funzionamento della durata di un anno, o del periodo previsto dalla legge, a partire dalla data di acquisto comprovata da un documento attestante il nominativo del Rivenditore e la data di vendita. La garanzia sarà prestata con la sostituzione o la riparazione gratuita delle parti difettose.

Non sono coperti da garanzia difetti derivanti da uso improprio, errata installazione, manutenzione effettuata da personale non autorizzato o, comunque, da circostanze che non possano riferirsi a difetti di funzionamento dell'apparecchio. Sono inoltre esclusi dalla garanzia gli interventi inerenti l'installazione e l'allacciamento agli impianti di alimentazione.

Gli apparecchi verranno riparati presso i nostri Centri di Assistenza Autorizzati. Le spese ed i rischi di trasporto sono a carico del cliente.

La casa costruttrice declina ogni responsabilità per danni diretti o indiretti provocati dalla inosservanza delle prescrizioni di installazione, uso e manutenzione dettagliate nel presente manuale o per guasti dovuti ad uso continuato a fini professionali.

# CE MARKING

- CE English**  
The ST-15S1 is in conformity with the EMC directive and low-voltage directive.
- CE Français**  
Le ST-15S1 est conforme à la directive EMC et à la directive sur les basses tensions.
- CE Deutsch**  
Das Modell ST-15S1 entspricht den EMC-Richtlinien und den Richtlinien für Niederspannungsgeräte.
- CE Español**  
El ST-15S1 está de acuerdo con las normas EMC y las relacionadas con baja tensión.
- CE Italiano**  
Il ST-15S1 è conforme alle direttive CEE ed a quelle per i bassi voltaggi.

## English

### WARNINGS

- Do not expose the equipment to rain or moisture.
- Do not remove the cover from the equipment.
- Do not insert anything into the equipment through the ventilation holes.
- Do not handle the mains cord with wet hands.
- Do not cover the ventilation with any items such as tablecloths, newspapers, curtains, etc.
- No naked flame sources, such as lighted candles, should be placed on the equipment.
- When disposing of used batteries, please comply with governmental regulations or environmental public instruction's rules that apply in your country or area.
- Make a space of about 0.1 meter around the unit.
- No objects filled with liquids, such as vases, shall be placed on the equipment.
- When the switch is in the OFF position, the equipment is not completely switched off from MAINS.
- The equipment shall be installed near the power supply so that the power supply is easily accessible.

## Français

### AVERTISSEMENTS

- Ne pas exposer l'appareil à la pluie ni à l'humidité.
- Ne pas essayer de retirer le boîtier de l'appareil.
- Ne rien insérer dans l'appareil par les orifices de ventilation.
- Ne pas manipuler le cordon d'alimentation avec les mains mouillées.
- Ne pas recouvrir les ouïes de ventilation avec un objet quelconque comme une nappe, un journal, un rideau, etc.
- Ne placer aucune source de flamme nue, comme une bougie allumée, sur l'appareil.
- Pour mettre au rebut les piles usées, respecter les lois gouvernementales ou les règlements officiels concernant l'environnement qui s'appliquent à votre pays ou région.
- Veiller à ce qu'aucun objet ne soit à moins de 0,1 mètre des côtés de l'appareil.
- Aucun objet rempli de liquide, un vase par exemple, ne doit être placé sur l'appareil.
- Lorsque l'interrupteur est sur la position OFF, l'appareil n'est pas complètement déconnecté du SECTEUR (MAINS).
- L'appareil sera installé près de la source d'alimentation, de sorte que cette dernière soit facilement accessible.

## Deutsch

### WARNHINWEISE

- Das Gerät nicht Regen oder Feuchtigkeit aussetzen.
- Die Abdeckung nicht vom Gerät abnehmen.
- Keine Gegenstände durch die Belüftungsschlitze stecken.
- Das Netzkabel nicht mit feuchten oder nassen Händen anfassen.
- Decken Sie die Lüftungsöffnungen nicht mit einem Tischtuch, einer Zeitung, einem Vorhang usw. ab.
- Es dürfen keine Gegenstände mit offener Flamme, wie etwa brennende Kerzen, auf dem Gerät aufgestellt werden.
- Beachten Sie bei der Entsorgung der verbrauchten Batterien alle geltenden lokalen und überregionalen Regelungen.
- Auf allen Geräteseiten muß ein Zwischenraum von ungefähr 0,1 meter vorhanden sein.
- Auf das Gerät dürfen keine mit Flüssigkeiten gefüllte Behälter, wie etwa eine Vase, gestellt werden.
- Wenn der Schalter ausgeschaltet ist (OFF-Position), ist das Gerät nicht vollständig vom Stromnetz (MAINS) abgetrennt.
- Das Gerät sollte in der Nähe einer Netzsteckdose aufgestellt werden, damit es leicht an das Stromnetz angeschlossen werden kann.

## Español

### ADVERTENCIAS

- No exponga el equipo a la lluvia ni a la humedad.
- No extraiga la tapa del equipo.
- No introduzca nada en el interior del equipo a través de los orificios de ventilación.
- No maneje el cable de alimentación con las manos mojadas.
- No cubra la ventilación con objetos como manteles, periódicos, cortinas, etc.
- No deben colocarse sobre el equipo elementos con fuego, por ejemplo velas encendidas.
- Cuando se eliminan baterías usadas, deben cumplirse las regulaciones oficiales o las normas de protección medioambiental aplicables en su país o en su zona.
- Deje un espacio de unos 0,1 metro alrededor de la unidad.
- No se deben colocar sobre el aparato recipientes que contengan líquidos, como por ejemplo jarrones.
- Cuando el interruptor está en la posición OFF, el equipo no está completamente desconectado de la alimentación MAINS.
- El equipo se instalará cerca de la fuente de alimentación de manera que resulte fácil acceder a ella.

## Italiano

### AVVERTENZE

- Non esporre l'apparecchio alla pioggia o all'umidità.
- Non rimuovere il coperchio dell'apparecchio.
- Non introdurre oggetti all'interno dell'apparecchio attraverso i fori di ventilazione.
- Non toccare il cavo di alimentazione con le mani bagnate.
- Non coprire le fessure di ventilazione con tovaglie, giornali, tende o oggetti analoghi.
- Non posare sull'apparecchio sorgenti di fiamme scoperte quali candele accese.
- Smaltire le pile usate in conformità alle norme governative o disposizioni ambientali vigenti nel proprio paese o zona.
- Lasciare 0,1 metro liberi tutto intorno l'unità.
- Non mettere sull'apparecchiatura alcun contenitore di liquido, come ad esempio dei vasi.
- Quando l'interruttore è nella posizione OFF, l'apparecchiatura non è completamente scollegata da MAINS.
- L'apparecchio va installato in prossimità della fonte di alimentazione, in modo che quest'ultima sia facilmente accessibile.

# CONTENTS

FEATURES .....	1
BEFORE USE .....	2
PART NAMES AND FUNCTIONS .....	3
FRONT PANEL .....	3
REAR PANEL .....	4
CONNECTIONS .....	5
CONNECTING THE ANTENNA TERMINALS .....	5
CONNECTING THE AMPLIFIER .....	6
OPERATION .....	7
LISTENING TO FM/AM .....	7
LISTENING TO DAB BROADCAST .....	13
SEARCH MODE .....	15
SORT MODE (SORTING COMPONENTS) .....	16
OTHER OPERATION .....	18
LAST FUNCTION MEMORY .....	18
INITIALIZATION OF THE MICROPROCESSOR .....	18
HOW TO OPERATE THE ILLUMINATION LAMP .....	18
CONVENIENT FEATURE .....	19
CONTROL BY REMOTE CONTROLLER .....	19
TROUBLESHOOTING .....	20
SPECIFICATIONS & DIMENSIONAL DRAWINGS .....	21
OTHERS .....	22

## FEATURES

- **Equipped for Both Band III and L-Band Reception**
- **High Performance D/A Converter**
- **200 Channels, Group Presets**
- **Customizable Station Names**
- **RDS-Compatible**
- **DRC(Dynamic Range Control)**
- **Optical and Coaxial Digital Output Jacks**
- **RDI-Compatible Optical Output Jack**

## A NOTE ABOUT RECYCLING



This product's packaging materials are recyclable and can be reused. This product and the accessories packed together are the applicable product to the WEEE directive except batteries.

Please dispose of any materials in accordance with your local recycling regulations.

When discarding the unit, comply with your local rules or regulations.

Batteries should never be thrown away or incinerated but disposed of in accordance with your local regulations concerning chemical wastes.

# BEFORE USE

This section must be read before any connection is made to the mains supply.

## ■ EQUIPMENT MAINS WORKING SETTING

Your Marantz product has been prepared to comply with the household power and safety requirements that exist in your area.

ST-15S1 can be powered by 230V AC only.

## ■ COPYRIGHT

Recording and playback of any material may require consent. For further information refer to the following:

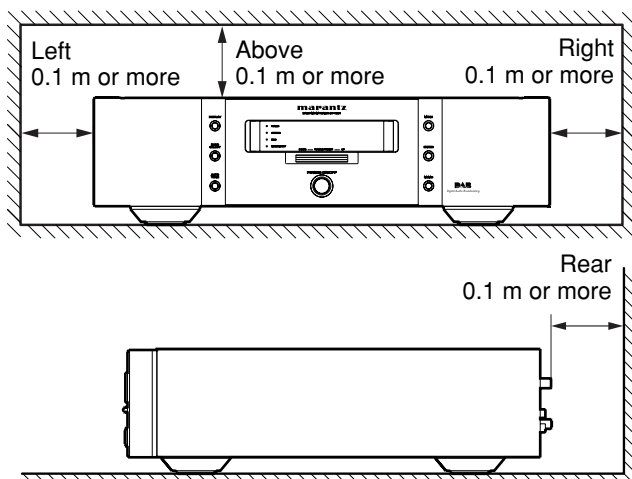
- Copyright Act 1956
- Dramatic and Musical Performers Act 1958
- Performers Protection Acts 1963 and 1972
- Any subsequent statutory enactments and orders

## ■ Do Not Locate in the Following Places

To ensure long-lasting use, do not locate the ST-15S1 where:

- Exposed to direct sunlight.
- Near to sources of heat such as heaters.
- Highly humid or poorly ventilated.
- Dusty.
- Subjected to mechanical vibrations.
- On wobbly, inclined or otherwise unstable surfaces
- Radiated heat is blocked such as in cramped audio racks.

To ensure proper heat radiation, ensure the below clearance from walls and other equipment.



Noise or disturbance of the picture may be generated if this unit or any other electronic equipment using microprocessors is used near a tuner or TV.

If this happens, take the following steps:

- Install this unit as far as possible from the tuner or TV.
- Set the antenna wires from the tuner or TV away from this unit's mains cord and input/output connection cords.

- Noise or disturbance tends to occur particularly when using indoor antennas or 300  $\Omega$ /ohms feeder wires. We recommend using outdoor antennas and 75  $\Omega$ /ohms coaxial cables.

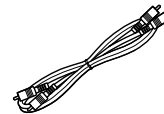
### Note

For heat dispersal, do not install this equipment in a confined space such as a book case or similar unit.

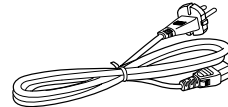
## ■ Accessories Check

Before use, check the below accessories were included in the package.

- Audio connecting cord x 1



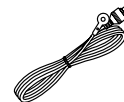
- Mains cord x 1



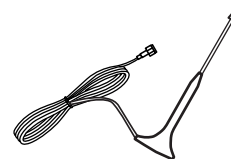
- AM loop antenna x 1



- FM indoor antenna x 1



- DAB indoor antenna x 1

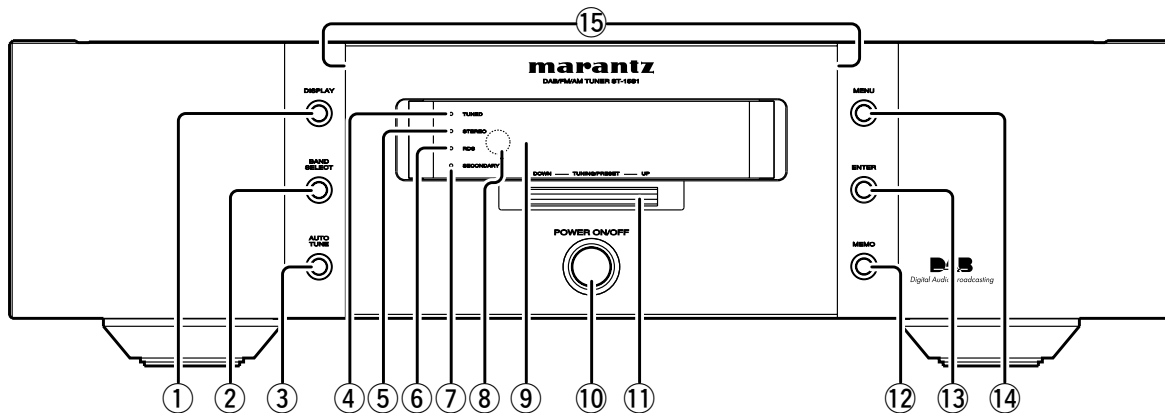


- Remote Control Connecting Cord x 1
- User Guide x 1
- Registration Card x 1

# PART NAMES AND FUNCTIONS

## FRONT PANEL

For details on the functions of these parts, refer to the pages given in parenthesis.



### ① DISPLAY button

This button is used to select the display mode (☞ page 9, 11, 17).

### ② BAND SELECT button

This button is used to select DAB, FM or AM.

### ③ AUTO TUNE button

#### • When FM (AM) is selected.

Press to preset automatically FM (AM) stations. (☞ page 7)

#### • When DAB is selected.

Press to active auto location of all available DAB services.

Press once for UK service or hold for longer than 2 seconds to activate an inter national search.

### ④ TUNED indicator

This indicator illuminates when a station is properly tuned in.

### ⑤ STEREO indicator

This indicator illuminates when an FM station is being tuned into stereo condition.

### ⑥ RDS indicator

This indicator illuminates when receiving RDS broadcasts, and flashes during the RDS search.

### ⑦ SECONDARY indicator

This indicator illuminates when a secondary service is available (☞ page 14).

### ⑧ Remote control sensor

This sensor receives the infrared light transmitted from the wireless remote control unit.

For remote control, point the wireless remote control unit to the sensor.

Some of the functions can be operated with the remote control unit (Accessory of Marantz's integrated amplifier PM-11/15 series etc.).

### ⑨ Display

### ⑩ Power ON/OFF switch

This is used to turn the unit's power ON and OFF.

When it is pressed, the display lights and the power is turned on; when it is pressed again, the power is turned off.

### ⑪ GYRO TUNING dial

This dial is used in conjunction with the MENU button, and is used to select and determine the operation mode. Also, this dial is used for the TUNING/PRESET search.

In the tuning mode, the reception frequency is tuned up or down. Turning the control in the right direction tunes the frequency up. Turning the control in the left direction tunes the reception frequency down.

In the preset mode, the selection of the preset channel is moved up or down. The auto tuning operation cannot be used when in this mode.

When entering station names, use this control to select the letters (☞ page 12).

### ⑫ MEMO button

Press this button to enter the tuner preset memory numbers or station names.

### ⑬ ENTER button

This button is used to set the menu.

### ⑭ MENU button

This button to ENTER/EXIT menu mode.

The unit times out if no operation is performed for about 5 seconds after the menu mode is set.

### ⑮ Illumination Lamp

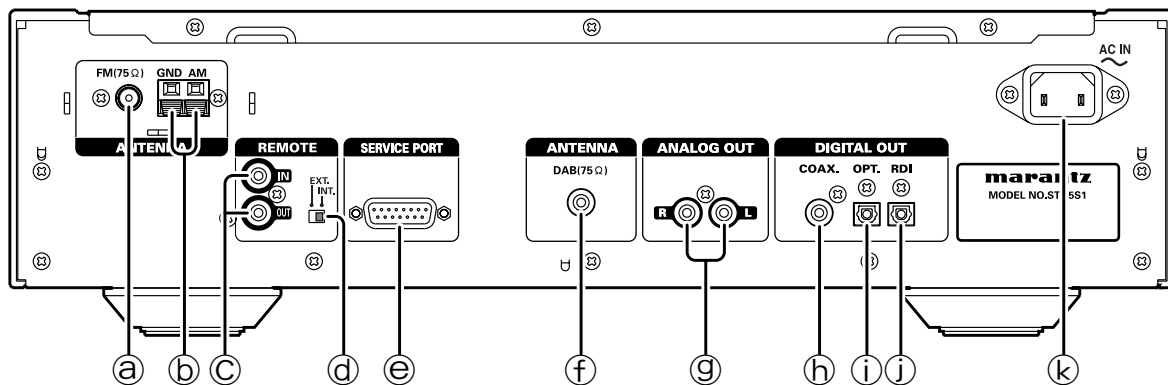
The side illumination casts a blue light over switches and buttons. It can be turned ON and OFF from the DISPLAY button. For instructions on how to operate the side illumination, see "HOW TO OPERATE THE ILLUMINATION LAMP" on page 18.

#### Memo

- Please be sure to unplug the cord when you leave home for, say, a vacation.
- Noise may be generated if a near-by television set is on during AM, FM or DAB broadcasting reception. The tuner should be used as far away from a television as possible.
- Effective period of memory back-up is about a month under normal temperature.

## PART NAMES AND FUNCTIONS

## REAR PANEL



**a FM antenna terminal (75 ohms)**

Connect an external FM antenna with a coaxial cable, or a cable network FM source.

**b AM antenna and ground terminals**

Connect the supplied AM loop antenna. Use the terminals marked "AM" and "GND". The supplied AM loop antenna will provide good AM reception in most areas. Position the loop antenna until you hear the best reception.

**c REMOTE CONTROL IN and OUT connectors**

Using the supplied remote control connecting cord, these connectors enable this unit to be connected to a Marantz component equipped with remote control connectors. These connections make it possible to control an entire system that centers on the amplifier or other such component.

**d EXTERNAL/INTERNAL switch**

Before the unit was shipped from the factory, this switch was set to INTERNAL to enable the remote sensor built into the unit to be used.

Before using the supplied connecting cord to make the connection between the unit and the remote control connectors on a Marantz equipment, set the switch to EXTERNAL.

**Note**

- Signals cannot be received from the remote control unit if the switch is kept at EXTERNAL when the unit is to be used on its own.

**e SERVICE PORT**

This port is to be used for service purpose. Normally, it is not used.

**f DAB antenna terminal**

Connect an external DAB antenna with a coaxial cable.

**g ANALOG OUT (analog output) connectors**

The audio signals are output from these connectors.

**h DIGITAL OUT COAX. (digital coaxial output) connector**

The audio signals are output digitally from this coaxial output connector.

**i DIGITAL OUT OPT. (digital optical output) connector**

The audio signals are output digitally from this optical output connector.

**j RDI OUT (digital optical output) connector**

The RDI (Receiver Data Interface) optical connector provides access to multiplex data.

This is used for connection to external data or a computer to access services that will likely be added in the future.

These services may not yet be provided in your reception area.

**k AC INLET**

Plug the supplied mains cord into this AC INLET and then into the power outlet on the wall.

ST-15S1 can be powered by 230V AC only.

# CONNECTIONS

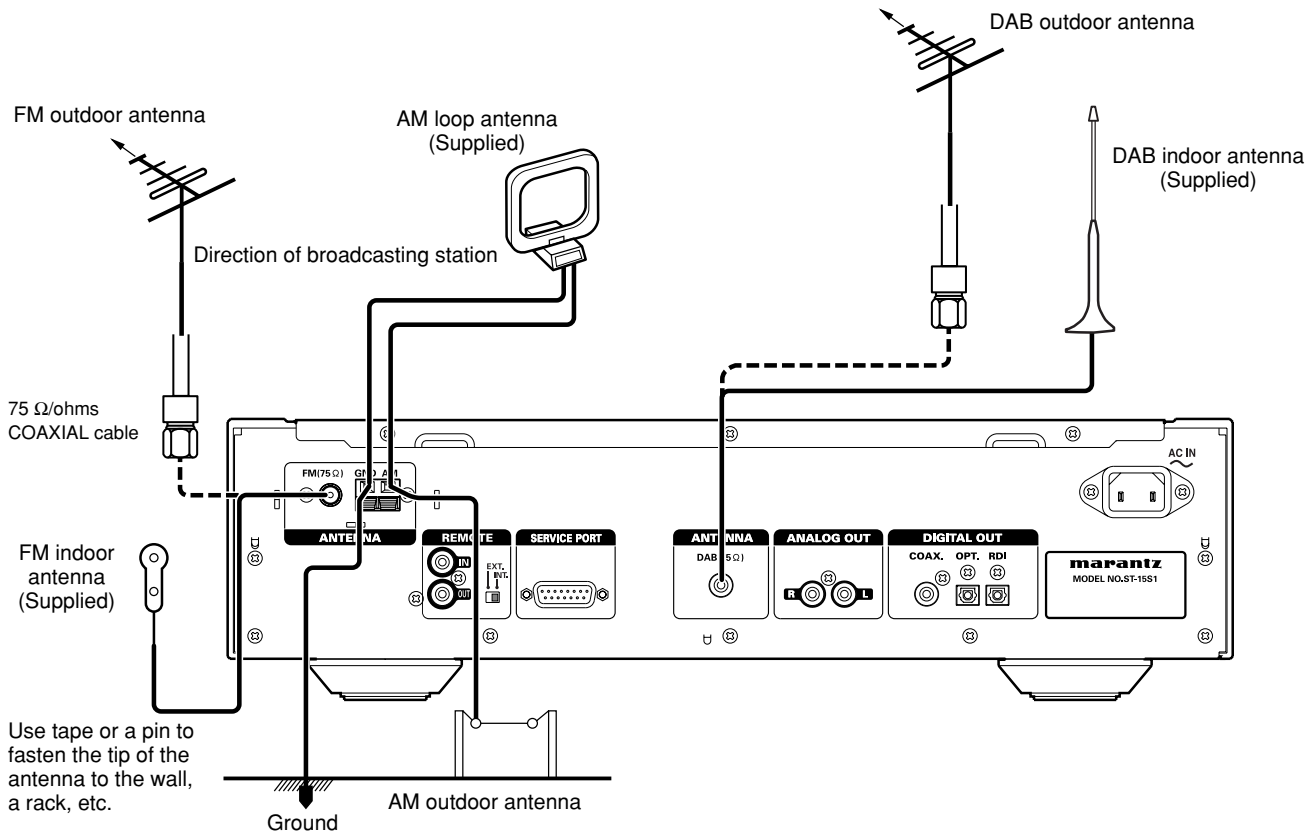
## CONNECTING THE ANTENNA TERMINALS

### ■ Connecting a DAB outdoor antenna

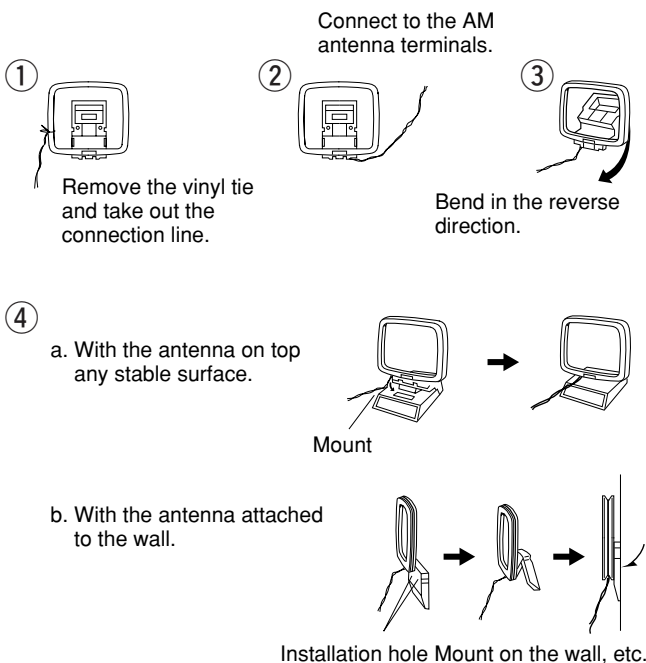
- If good reception cannot be achieved with the included DAB indoor antenna, use a DAB outdoor antenna. Connect an F male type connector to the coaxial cable and connect the antenna to the DAB COAX 75 Ω/ohms terminal.

### ■ Installing the DAB indoor antenna

- ① DAB station reception (☞ page 13).
- ② Use "Tuning aid" to set position at which reception sensitivity is optimum (☞ page 15).

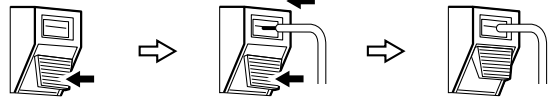


### ■ AM loop antenna assembly

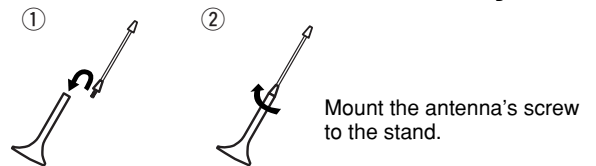


### ■ Connection of AM antennas

1. Push the lever.
2. Insert the conductor.
3. Return the lever.



### ■ DAB indoor antenna assembly



#### Note

- Do not connect two FM antennas simultaneously.
- Even if an external AM antenna is used, do not disconnect the AM loop antenna.
- Make sure AM loop antenna lead terminals do not touch metal parts of the panel.
- There is a magnetic on the bottom surface of the DAB indoor antenna. Keep it away from monitors, etc.



# CONNECTIONS

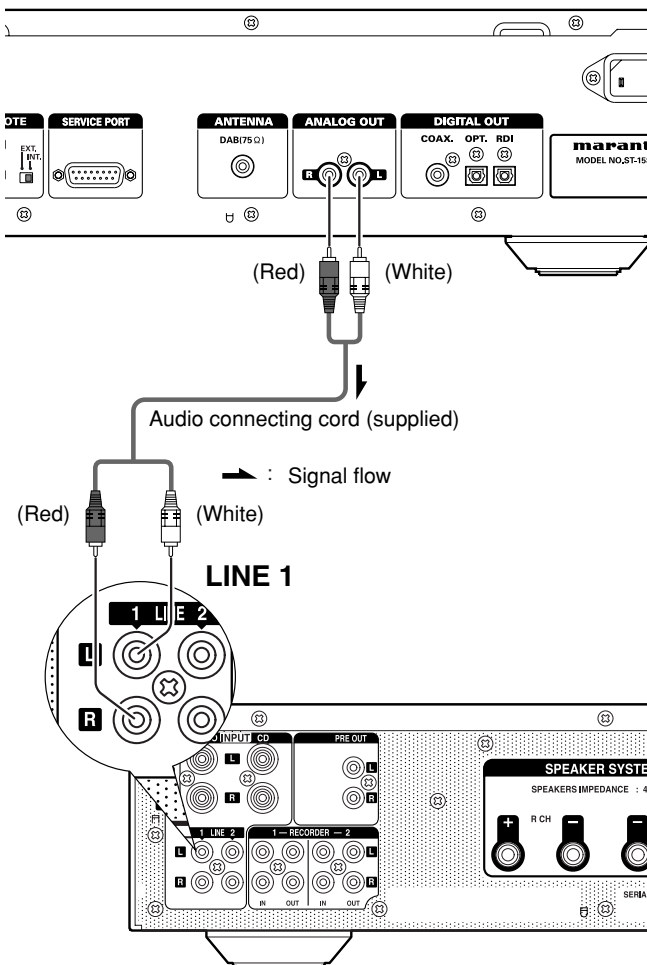
## CONNECTING THE AMPLIFIER

### Note

- If you want to enjoy listening to the digital output audio of the DAB, connect to an amplifier outfitted with a digital optical or coaxial input.
- Do not plug in the mains cord until all connections have been completed.
- When making connections, also refer to the operating instructions of the other components.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Note that binding pin-plug cords together with mains cords or placing them near a power transformer will result in generating hum or other noise.

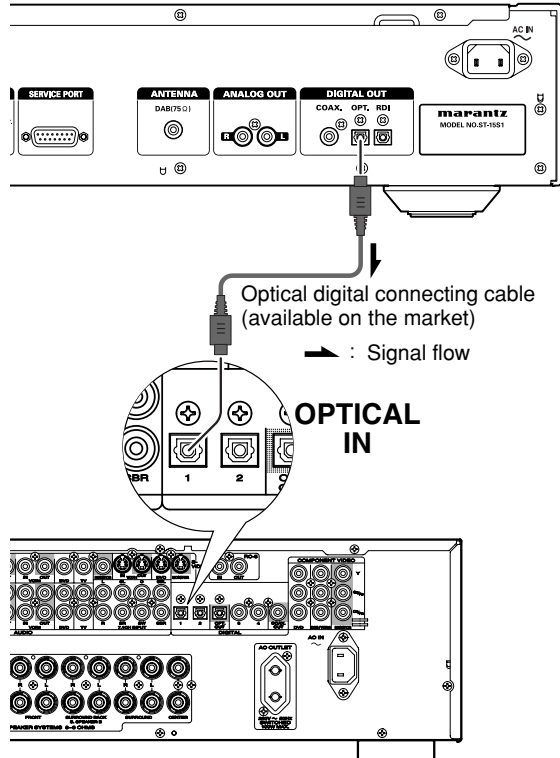
### ■ Connecting the analog output connector

Use the audio connecting cord to connect the unit with a stereo amplifier or AV amplifier. Do not connect the unit to the PHONO input connectors on the amplifier. When making the connections, insert the plugs securely into the connectors. Failure to insert the plugs securely may result in noise.



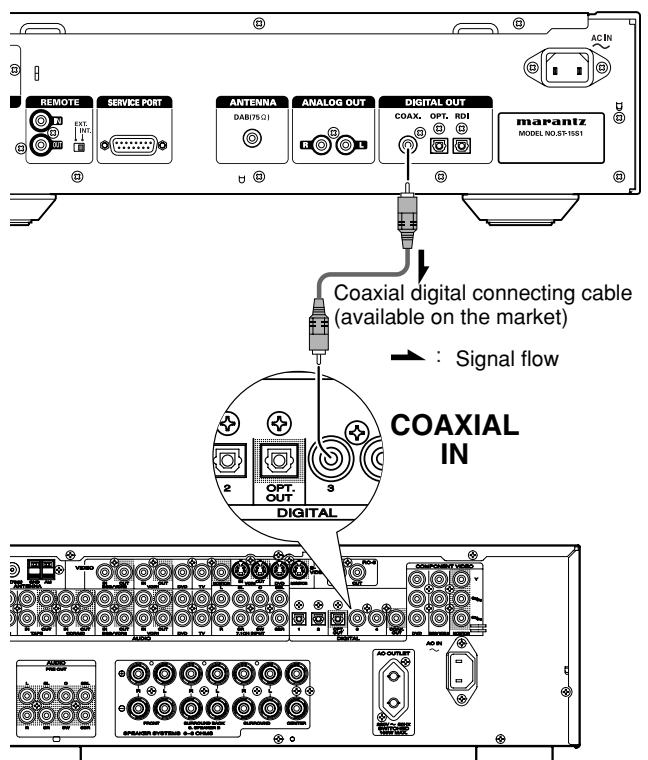
### ■ Connecting the optical output connector

Use an optical digital connecting cable available on the market. Insert the plug firmly in until it clicks into place. Do not bend or bundle the optical digital connecting cable.



### ■ Connecting the coaxial output connector

Use a coaxial digital connecting cable available on the market.

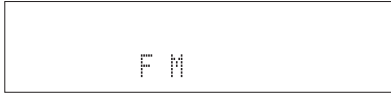


# OPERATION

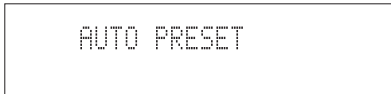
## LISTENING TO FM/AM

### FM (AM) Auto preset memory

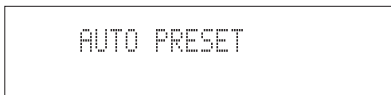
1. Press the **POWER ON/OFF** switch ⑩ to turn on the power.
2. Watching the display, press the **BAND SELECT** button ② to select the FM band.



3. Press the **AUTO TUNE** button ③.



4. Press the **ENTER** button ⑬.
  - The unit automatically begins searching for FM (AM) broadcast stations.



- When the first FM (AM) broadcast station is found, that station is stored in the preset memory at channel A1.
- Subsequent stations are automatically stored in order at preset channels A1 to A10, B1 to B10, C1 to C10, D1 to D10, E1 to E10, F1 to F10, G1 to G10, H1 to H10, I1 to I10 and J1 to J10 for a maximum of 100 stations.
- Channel A1 is tuned in after the auto preset memory operation is completed.

#### Note

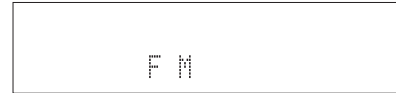
- If an FM (AM) station cannot be preset automatically due to poor reception, use the "Manual tuning" operation to tune in the station, then preset it using the manual "Preset memory" operation.
- To interrupt this function, press the **POWER ON/OFF** switch ⑩.

### DEFAULT VALUE

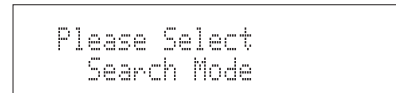
Auto tuner presets	
A1 ~ A10	87.5 / 89.1 / 98.1 / 108 / 90.1 / 90.1 / 90.1 / 90.1 / 90.1 / 90.1 MHz
B1 ~ B10	522 / 603 / 999 / 1404 / 1611 kHz, 90.1 / 90.1 / 90.1 / 90.1 / 90.1 MHz
C1 ~ C10	90.1 MHz
D1 ~ D10	90.1 MHz
E1 ~ E10	90.1 MHz
F1 ~ F10	90.1 MHz
G1 ~ G10	90.1 MHz
H1 ~ H10	90.1 MHz
I1 ~ I10	90.1 MHz
J1 ~ J10	90.1 MHz

### Auto tuning (FM/AM)

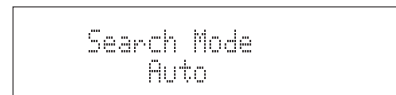
1. Press the **POWER ON/OFF** switch ⑩ to turn on the power.
2. Watching the display, press the **BAND SELECT** button ② to select the desired band (AM or FM).



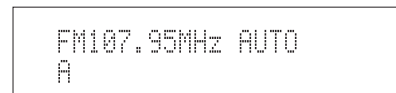
3. Press the **MENU** button ⑭ to select menu.



4. Press the **ENTER** button ⑬ to set search mode.
5. Turn the **GYRO TUNING** dial ⑪ to select "Auto".



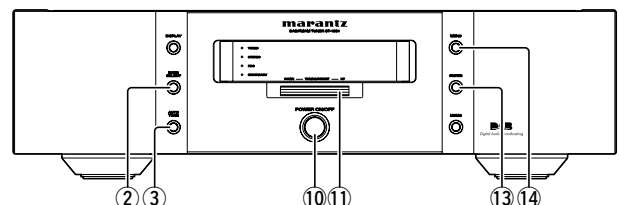
6. Press the **ENTER** button ⑬ to set the auto tuning mode.



7. Turn the **GYRO TUNING** dial ⑪.
  - Automatic searching begins, then stops when a station tuned in.

#### Note

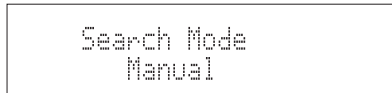
- When in the auto tuning mode on the FM band, the "STEREO" indicator lights on the panel when the stereo broadcast is tuned in. At open frequencies, the noise is muted and the "TUNED" and "STEREO" indicators tuned off.
- If the signal is weak, it may be difficult to tune into the station in stereo.
- If tuning does not stop at the desired station. Use "Manual tuning" operation.



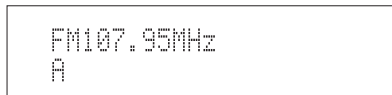
## OPERATION

### Manual tuning (FM/AM)

1. Press the **POWER ON/OFF** switch ⑩ to turn on the power.
2. Watching the display, press the **BAND SELECT** button ② to select the desired band (AM or FM).
3. Press the **MENU** button ⑭ to select menu.
4. Press the **ENTER** button ⑬ to set search mode.
5. Turn the **GYRO TUNING** dial ⑪ to select "Manual".



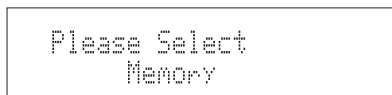
6. Press the **ENTER** button ⑬ to set the manual tuning mode.



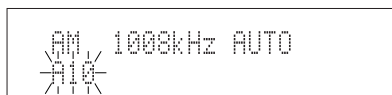
7. Turn the **GYRO TUNING** dial ⑪ to tune in the desired station.

### Preset stations (FM/AM)

1. Use the "Auto tuning" or "Manual tuning" operation to tune in the station to be preset in the memory.
2. Press the **MENU** button ⑭ to select menu.
3. Turn the **GYRO TUNING** dial ⑪ to select "Memory".



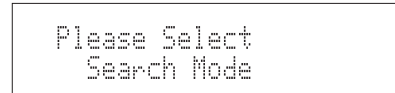
4. Press the **ENTER** button ⑬ to set the preset mode and make the preset channel number flash.



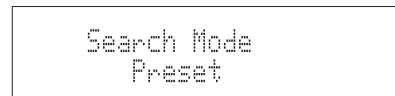
- Steps 1 to 4 can be skipped when using the **MEMO** ⑫ button.  
When this button is pressed, the preset memory standby mode is set, regardless of the menu setting at that time.
5. While the preset channel number is flashing, turn the **GYRO TUNING** dial ⑪ to select the desired preset channel (1 to 10).
  6. While the preset channel number is flashing, press the **ENTER** button ⑬ or **MEMO** button ⑫ to store the station in the preset memory.
    - To preset other channels, repeat steps 2 to 6.
    - A total of 100 broadcast stations can be preset — 10 stations (channels 1 to 10) in each of groups A to J.

### Recalling preset stations (FM/AM)

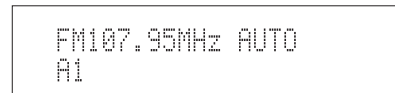
1. Press the **POWER ON/OFF** switch ⑩ to turn on the power.
2. Watching the display, press the **BAND SELECT** button ② to select the desired band (AM or FM).
3. Press the **MENU** button ⑭ to select menu.



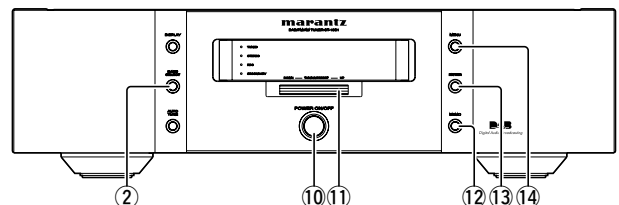
4. Press the **ENTER** button ⑬ to set search mode.
5. Turn the **GYRO TUNING** dial ⑪ to select "Preset".



6. Press the **ENTER** ⑬ button and set the preset mode.



7. Watching the display, turn the **GYRO TUNING** dial ⑪ to select the desired preset channel.



### ■ RDS (Radio Data System)

- RDS (works only on the FM band) is a broadcasting service which allows station to send additional information along with the regular radio program signal.
- The following three types of RDS information can be received on this unit:

#### • Program Type (PTY)

- PTY identifies the type of RDS program.
- The program types and their displays are as follows:

<b>NEWS</b>	News	<b>OTHER M</b>	Other Music
<b>AFFAIRS</b>	Current Affairs	<b>WEATHER</b>	Weather
<b>INFO</b>	Information	<b>FINANCE</b>	Finance
<b>SPORT</b>	Sports	<b>CHILDREN</b>	Children's Programs
<b>EDUCATE</b>	Education	<b>SOCIAL</b>	Social Affairs
<b>DRAMA</b>	Drama	<b>RELIGION</b>	Religion
<b>CULTURE</b>	Culture	<b>PHONE IN</b>	Phone In
<b>SCIENCE</b>	Science	<b>TRAVEL</b>	Travel
<b>VARIED</b>	Varied	<b>LEISURE</b>	Leisure
<b>POP M</b>	Pop Music	<b>JAZZ</b>	Jazz Music
<b>ROCK M</b>	Rock Music	<b>COUNTRY</b>	Country Music
<b>EASY M</b>	Easy Listening Music	<b>NATION M</b>	National Music
<b>LIGHT M</b>	Light Classical	<b>OLDIES</b>	Oldies Music
<b>CLASSICS</b>	Serious Classical	<b>FOLK M</b>	Folk Music
		<b>DOCUMENT</b>	Documentary

#### • Traffic Program (TP)

- TP identifies programs that carry traffic announcements.
- This allows you to easily find out the latest traffic conditions in your area before you leaving home.

#### • Radio Text (RT)

- RT allows the RDS station to send text messages that appear on the display.

#### Note

- The following RDS functions are not applicable where there is no RDS signal, and pressing the **DISPLAY** button ① will not alter display.

### ■ RDS search

Use this function to automatically tune to FM stations that provide RDS service.

1. Press the **MENU** button ⑭ to select menu.

Please Select  
Search Mode

2. Turn the **GYRO TUNING** dial ⑪ to display "RDS".

Please Select  
RDS

3. Press the **ENTER** button ⑬ to set the RDS search selection mode.

4. Turn the **GYRO TUNING** dial ⑪ to display "RDS Search".

RDS Search

5. Press the **ENTER** ⑬ button to set the RDS search standby mode.

<Search Start>

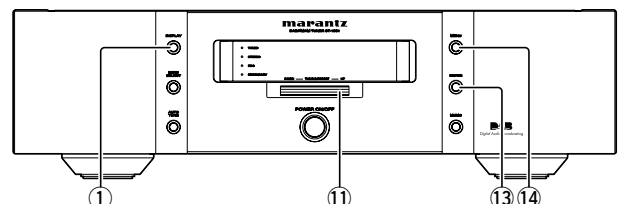
6. Turn the **GYRO TUNING** dial ⑪. The RDS search automatically begins and the RDS LED flashes.

- If no RDS station is found with above operation, all the reception band are searched.
- When the broadcast station is found, that station's name appears on the display.

- 7.

NO RDS

- If no other RDS station is found when all the frequencies are searched, "NO RDS" is displayed.

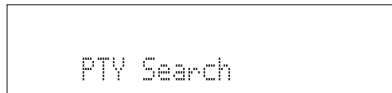


## OPERATION

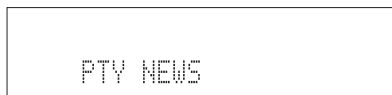
### ■ PTY search

- Use this function to find RDS stations broadcasting a designated program type (PTY).
- For a description of each program type, refer to “Program Type (PTY)”.

1. Press the **MENU** button ⑭ to select menu.
2. Turn the **GYRO TUNING** dial ⑪ to display “RDS”.
3. Press the **ENTER** button ⑬ to set the RDS search selection mode.
4. Turn the **GYRO TUNING** dial ⑪ to display “PTY Search”.

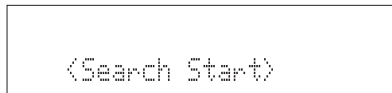


5. Press the **ENTER** button ⑬ to set the PTY search selection mode.
6. Watching the display, turn the **GYRO TUNING** dial ⑪ to call out the desired program type.



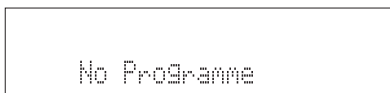
- When receiving an RDS station, its program type is displayed first.
- When not receiving an RDS station, “PTY” flashes.

7. Press the **ENTER** button ⑬ to set the PTY search standby mode.



8. Turn the **GYRO TUNING** dial ⑪. The RDS search automatically begins and the RDS LED flashes.
  - If there is no station broadcasting the designated program type above operation, all the reception bands are searched.
  - The station name is displayed on the display after searching stops.

9.

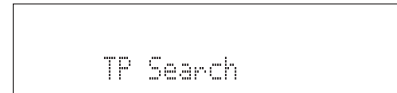


- If no other station broadcasting the designated program type is found when all the frequencies are searched, “NO programme” is displayed.

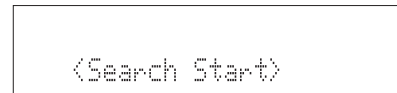
### ■ TP search

Use this function to find RDS stations broadcasting traffic program (TP).

1. Press the **MENU** button ⑭ to select menu.
2. Turn the **GYRO TUNING** dial ⑪ to display “RDS”.
3. Press the **ENTER** button ⑬ to set the RDS search selection mode.
4. Turn the **GYRO TUNING** dial ⑪ to display “TP Search”.

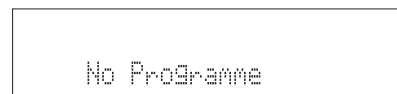


5. Press the **ENTER** button ⑬ to set the TP search standby mode.

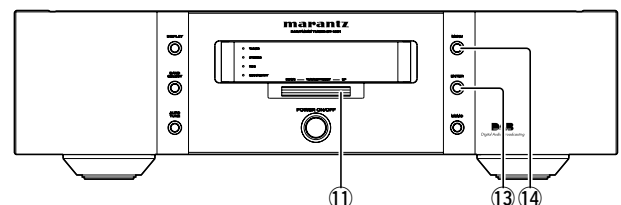


6. Turn the **GYRO TUNING** dial ⑪. The RDS search automatically begins and the RDS LED flashes.
  - If no TP station is found with above operation, all the reception bands are searched.
  - The station name is displayed on the display after searching stops.

7.



- If no other TP station is found when all the frequencies are searched, “NO programme” is displayed.

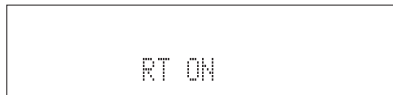


## ■ RT (Radio Text)

1. Press the **MENU** button ⑭ to select menu.
2. Turn the **GYRO TUNING** dial ⑪ to display "RDS".
3. Press the **ENTER** button ⑬ to set the RDS search selection mode.
4. Turn the **GYRO TUNING** dial ⑪ to display "RT ON/OFF".



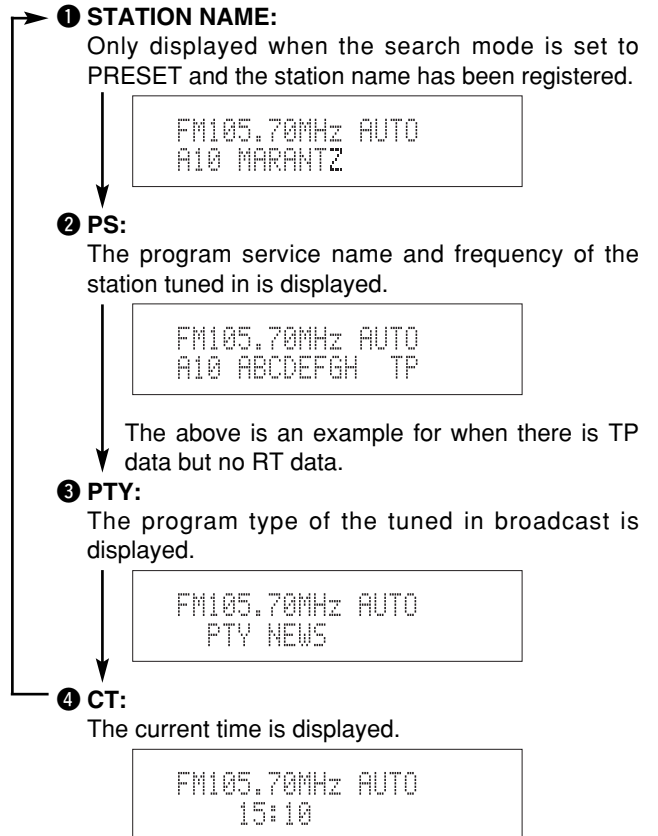
5. Press the **ENTER** button ⑬ to set the RT ON/OFF selection mode.
6. Turn the **GYRO TUNING** dial ⑪ to choose the "RT ON" or "RT OFF".



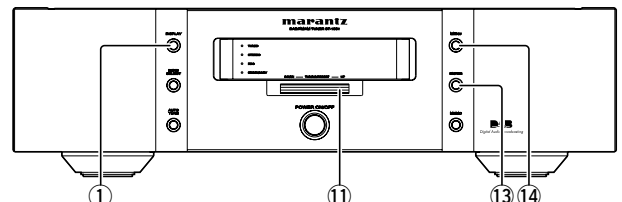
7. Press the **ENTER** button ⑬ to set whether to enable or stop the RADIO TEXT function.
  - If no text data is being broadcast, "NO TEXT DATA" is displayed.

## ■ Switching RDS information display

1. Use the procedure described at "Auto tuning", "Manual tuning" or "Recalling preset stations" to tune in a frequency with an RDS station.
2. Press the **DISPLAY** button ① to switch the RDS reception information.
  - The display switches as shown below each time the **DISPLAY** button ① is pressed.



- When the "STATION NAME" is not registered, ① is not displayed.



## OPERATION

## ■ Registering station names (FM/AM only)

1. Use the procedure described at “Auto tuning”, “Manual tuning” or “Recalling preset stations” to tune in the desired frequency.

**Example:** To register “MARANTZ” as the FM station name at preset channel “A2”.

2. Press the **MENU** button ⑭ to select menu.

```
Please Select
Search Mode
```

3. Turn the **GYRO TUNING** dial ⑪ to display “Station Name”.

```
Please Select
Station Name
```

4. Press the **ENTER** button ⑬ to display the Station Name setting.

```
FM107.95MHz AUTO
A2 _
```

5. While “\_” is flashing, turn the **GYRO TUNING** dial ⑪ to display “M”.

6. The “\_” moves to the right when the **ENTER** button ⑬ is pressed. Use the same procedure to display “A”, “R”, “A”, “N”, “T”, and “Z”, in that order.

```
FM107.95MHz AUTO
A2 MARANTZ
```

7. Press the **ENTER** button ⑬ for at least 2 seconds.

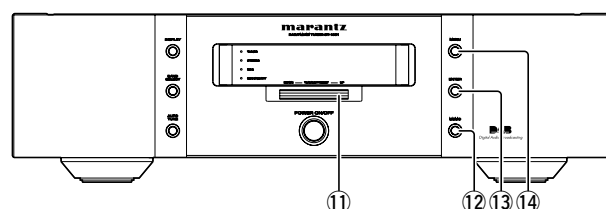
- The station name is set.

8. Then “A2” blinks, either press the **ENTER** button ⑬ or **MEMO** button ⑫ to store the station name in the preset memory.

- This procedure can be used to registered station names with up to 8 digits for up to 100 AM/FM stations at random.

- The 63 characters below can be selected.

```
ABCDEF GHIJK LMNOP QRSTUVWX
YZ 0 1 2 3 4 5 6 7 8 9 [ \ ] ^ _ ! # " $ % & ' ( ) * + ,
- . / : ; < = > ? (space)
```



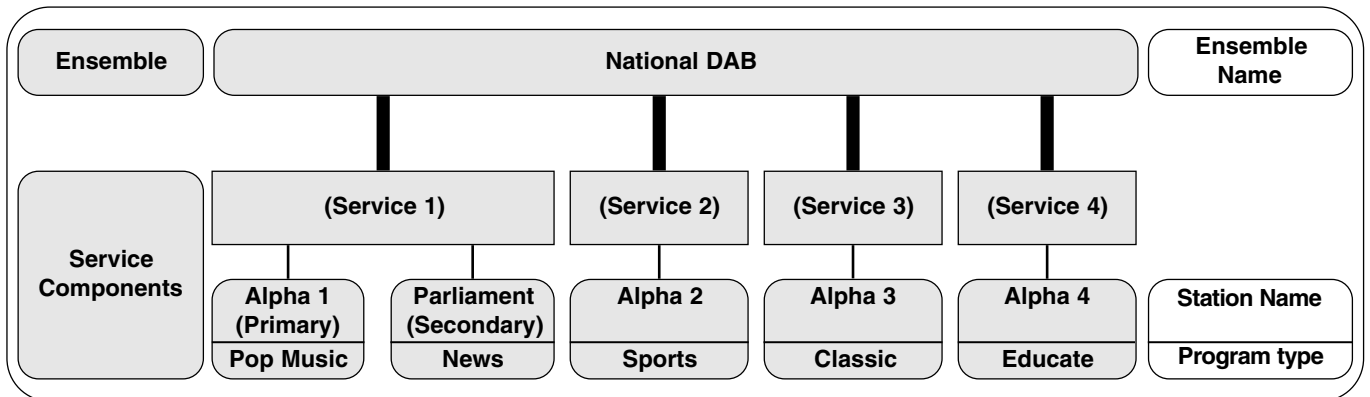
**LISTENING TO DAB BROADCAST**

**■ About DAB (Digital Audio Broadcasting)**

- Since the DAB system is broadcasted in digital format, DAB system can supply crystal-clear audio and stable reception even in mobile objects. DAB is a new generation radio which can provide data service and supplementary multi-media services.
- DAB broadcasts multiple services under one Ensemble that are called service components.
- Each component contains inherent programs; news, music, sports, and many more.
- Each Ensemble and service component has its label, and users can recognize a current broadcasting station and service contents by using the label.
- The main service component is broadcast as Primary while the others are broadcast as Secondary.
- Also rich character information is serviced through Dynamic Labels; song title, artist composer etc.

**DAB Service Diagram**

DAB Signal

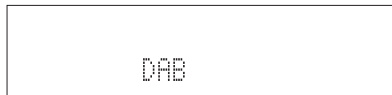




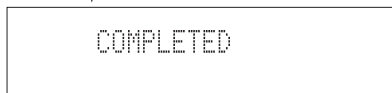
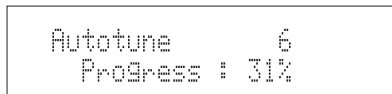
## OPERATION

## ■ Tuning in DAB (Digital Audio Broadcasting) broadcasts

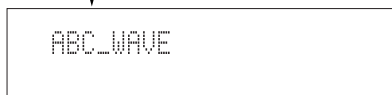
1. Press the **POWER ON/OFF** switch ⑩ to turn on the power.
2. Watching the display, press the **BAND SELECT** button ② to select the desired band (DAB).



3. Watching the display, press the **AUTO TUNE** ③ to start automatically scanning.



Tune in the first broadcast station.



### • Using the DAB for the first time

When you first switch on the unit and select DAB, the Auto Tuning function scans the Band III and L-band frequencies. After the scanning, the first scanned component will be selected.

To listen to other stations, use one of the search modes shown below.

Press the **AUTO TUNE** button ③ and release it in less than 2 seconds to perform a local scan (UK band III). (UK stations are in the range 11B to 12D).

Press the button for over 2 seconds then release it to perform the full scan operation (Full band III and L-band: 5A to LW).

Once auto scanning is completed, the number of broadcast stations is displayed, then the first station is tuned in.

If "Station not available" is displayed, check the antenna's connection (☞ page 5).

You may want to re-tune at a later date if you move the ST-15S1 or if you want to receive a newly introduced ensemble.

Press the **AUTO TUNE** button ③.

4. Turn the **GYRO TUNING** dial ⑪ to select the station.
  - If the station you select is in stereo, the "STEREO" indicator will light up.
  - **About Secondary service**  
When receiving a Secondary service, "<< >>" are indicated to the right of "Channel and Frequency".  
When the **ENTER** button ⑬ is pressed, the Secondary service Component is received and the Secondary indicator lights.  
Press **ENTER** button ⑬ to go back to the Primary service again.

5. Press the **ENTER** button ⑬ to listen to the selected station.
  - After "Now tuning..." is displayed, the tuned in station appears.

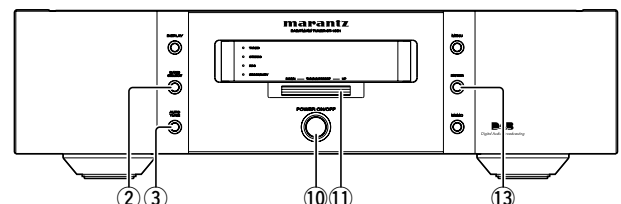
## ■ Preset stations

1. Follow steps 1 to 4 under "Tuning in DAB (Digital Audio Broadcasting) broadcasts" to tune in the station to be preset.
2. Perform steps 2 to 6 under "Preset Stations (FM/AM)".
  - Up to 100 "S. Component" can be preset (DAB alone).

## ■ Recalling preset stations

The same procedure as for FM/AM stations. (☞ page 8)

1. Perform steps 1 to 7 under "Recalling Preset stations (FM/AM)" (☞ page 8)
2. Press the **ENTER** button ⑬ to listen to the selected station.
  - After "Now tuning..." is displayed, the tuned in station appears.





## OPERATION

## SORT MODE (SORTING COMPONENTS)

- You can sort and list scanned components by Alphanumeric, S. component or program type.
- You can then select the component you want to listen to from the list.

### ■ Alphanumeric

The “S.Component” is sorted in alphanumerical order.

1. Press the **MENU** button ⑭ to select menu.
2. Turn the **GYRO TUNING** dial ⑪ to display the sort mode selection screen.



Please Select  
Sort Mode

3. Press the **ENTER** button ⑬ to set the sort mode.
4. Turn the **GYRO TUNING** dial ⑪ to select “Sort Mode (Alphanumeric)”.



Sort Mode  
Alphanumeric

5. Press the **ENTER** button ⑬ to set the sort mode to “Sort Mode (Alphanumeric)”.



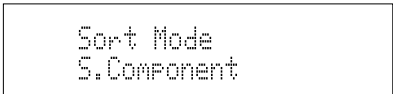
ABC\_WAVE

- You can select any component from the sorted list.

### ■ S. component

- You can select an S.component for listening from the list of scanned S.components produced by using the “Tuning in DAB broadcasts” (🔍 page 14)
- The “S. Component” is sorted in the order of the Service component frequencies.

1. Press the **MENU** button ⑭ to select menu.
2. Turn the **GYRO TUNING** dial ⑪ to display the sort mode selection screen.
3. Press the **ENTER** button ⑬ to set the sort mode.
4. Turn the **GYRO TUNING** dial ⑪ to select “Sort Mode (S. Component)”.



Sort Mode  
S.Component

5. Press the **ENTER** button ⑬ to set the sort mode to “Sort Mode (S. Component)”.
- You can select any component from the sorted list.

### ■ PTY

The “S.Component” is sorted in the order of the program Type.

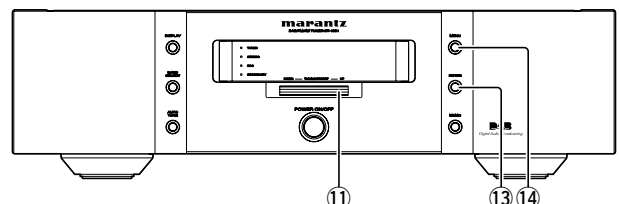
1. Press the **MENU** button ⑭ to select menu.
2. Turn the **GYRO TUNING** dial ⑪ to display the sort mode selection screen.
3. Press the **ENTER** button ⑬ to set the sort mode.
4. Turn the **GYRO TUNING** dial ⑪ to select “Sort Mode (PTY)”.



Sort Mode  
PTY

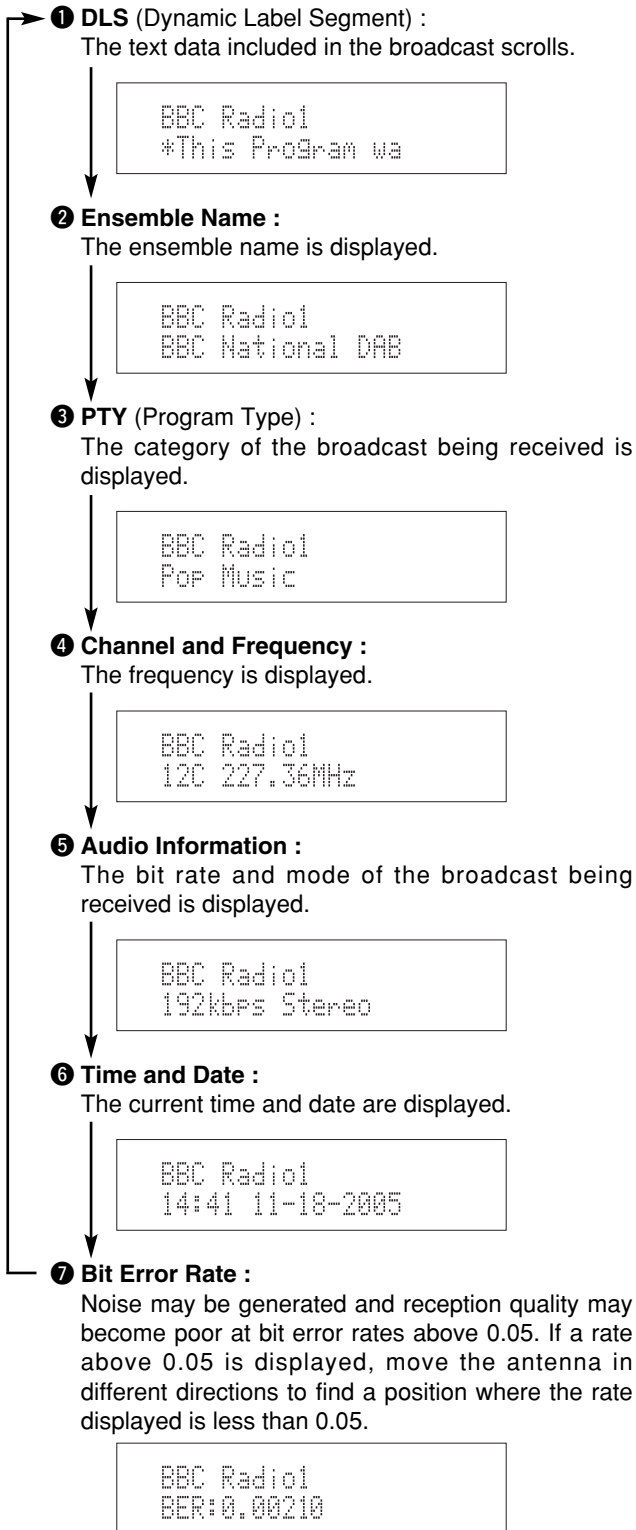
5. Press the **ENTER** button ⑬ to set the sort mode to “Sort Mode (PTY)”.

- You can select any component from the sorted list.



## ■ Switching the DAB information display

- Follow steps 1 to 4 under "Tuning in DAB (Digital Audio Broadcasting) broadcasts" (page 14) to tune in a DAB station.
- Press the **DISPLAY** button ① to switch the DAB reception information.
  - The display switches as shown below each time the **DISPLAY** button ① is pressed.



## ■ DRC (Dynamic Range Control)

- The DRC (Dynamic Range Control) function lets you change the dynamic range of the received sound depending on the content of the broadcast so that the sound is easier to hear even when the volume is low.
- Press the **MENU** button ⑭ to select menu.
  - Turn the **GYRO TUNING** dial ⑪ to display the DRC value mode selection screen.
  - Press the **ENTER** button ⑬ to set the DRC value mode.
  - Turn the **GYRO TUNING** dial ⑪ to choose the "DRC ON" or "DRC OFF".

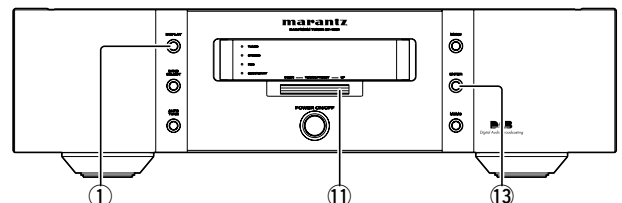


**DRC OFF:** DRC is switched off.

Any DRC level broadcast will be ignored. This is the default setting.

**DRC ON:** Applies DRC level as sent with the broadcast.

- Press the **ENTER** button ⑬ to set DRC function.
  - This is effective when in a noisy environment and in quiet sections of broadcast programs. The broadcast's DRC level is set at the broadcast station. The DRC can be changed to achieve the optimum level.



## OTHER OPERATION

### LAST FUNCTION MEMORY

- This unit is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off. This function eliminates the need to perform complicated resettings when the power is turned on.
- The unit is also equipped with a back-up memory. This function provides approximately one week of memory storage when the main unit's power switch is off and with the mains cord disconnected.

### INITIALIZATION OF THE MICROPROCESSOR

- When the indication of the display is not normal or when the operation of the unit does not show the reasonable result, the initialization of the microprocessor is required by the following procedure.
1. Press the **POWER ON/OFF** switch ⑩ to turn on the power.
  2. Press at the same time for **MENU** button ⑭ + **BAND SELECT** button ② and main cord pull out.
  3. Main cord pull in.
  4. During the initialization, it is converted to DAB Auto Tuning state.

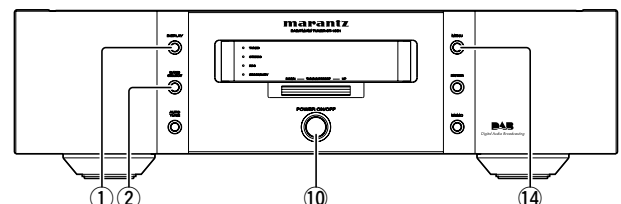
#### Note

- If step 3 does not work, start over from step 1.
- If the microprocessor has been initialized all the button settings are reset to the default values (the values set upon shipment from the factory).

### HOW TO OPERATE THE ILLUMINATION LAMP

The illumination lamp has an always-ON mode and an always-OFF mode. In the always-ON mode, the illumination lamp turns ON/OFF in sync with the display.

1. With the illumination lamp lit, press and hold the **DISPLAY** button ① for 3 seconds or longer. The illumination lamp goes out and the always-OFF mode is engaged.
2. To cancel the always-OFF mode and turn the illumination lamp ON, press and hold the **DISPLAY** button ① for 3 seconds or longer.



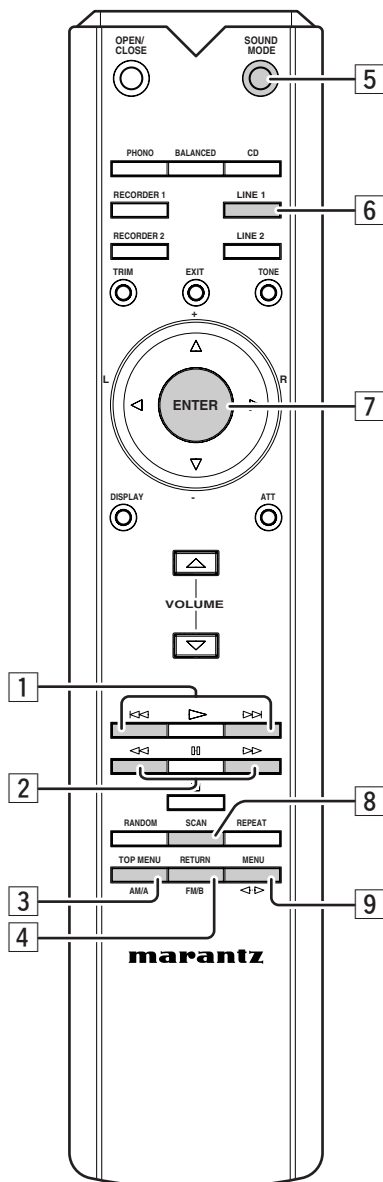
# CONVENIENT FEATURE

## CONTROL BY REMOTE CONTROLLER

ST-15S1 can be controlled by the remote controller supplied with Marantz integrated amplifier PM-11/15 series. You can perform following operations using the controller.

### Caution

When you operate ST-15S1 with a PM-11/15 remote controller, please make sure to connect ST-15S1 into LINE 1 terminal.



- 1** **◀▶ buttons (CHANNEL/CONTROL button)**  
This button is used to select radio presets or select stations and menu options.
- 2** **◀▶ buttons (TUNING buttons)**  
Use these to change the received frequency to a higher frequency (+) or a lower frequency (-).
- 3** **TOP MENU/AM/A button (AM button)**  
This button is used to select AM directly.
- 4** **RETURN/FM/B button (FM button)**  
This button is used to select FM directly.
- 5** **SOUND MODE button (T-MODE button)**  
Selects the stereo mode or mono mode when a FM stereo broadcast is received.
- 6** **LINE 1 button (LINE 1 and BAND button)**  
This button is used to select LINE 1 of input position at first. After that, it is used to select BAND (DAB/FM/AM).
- 7** **ENTER button (ENTER button)**  
This button is used to set the menu.
- 8** **SCAN button (Auto Preset / Auto Tune button)**  
Press this button in the DAB mode to perform a local scan (UK band III). (UK stations are in the range 11B ~ 12D.)  
When the button is held in, the full scan operation (Full band and L-band) is conducted.  
When pressed in the FM mode, receivable FM stations are automatically stored in the preset memory in order starting from preset channel A1.
- 9** **MENU ◀▶ button (MENU button)**  
This button is used to enter/exit menu mode.

# TROUBLESHOOTING

If a problem should arise, first check the following.

1. Are the connections correct?
2. Have you operated the receiver according to the operating instructions?
3. Are the speakers and other components operating properly?

If this unit is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

Symptom	Cause	Measures	Page
Power does not turn on when POWER ON/OFF switch is pressed.	<ul style="list-style-type: none"> <li>• Mains cord's plug is not plugged into wall outlet.</li> </ul>	<ul style="list-style-type: none"> <li>• Plug the mains cord in properly.</li> </ul>	
Hissing noise is heard on FM broadcasts.	<ul style="list-style-type: none"> <li>• Antenna cable is not properly connected.</li> <li>• Antenna is not pointing in the right direction.</li> <li>• Radio waves are weak.</li> </ul>	<ul style="list-style-type: none"> <li>• Connect the leads properly.</li> <li>• Point the antenna in the right direction.</li> <li>• Install an outdoor antenna.</li> </ul>	5 5 5
Hissing or buzzing sound is heard on AM broadcasts.	<ul style="list-style-type: none"> <li>• Noise from a TV or interference in the signals sent from the broadcast station.</li> </ul>	<ul style="list-style-type: none"> <li>• Turn off the TV.</li> <li>• Change the position of the loop antenna.</li> <li>• Install an outdoor antenna.</li> </ul>	5 5 5
Booming sound (humming) is heard in AM broadcasts.	<ul style="list-style-type: none"> <li>• Signals transmitted over the main cord are modulated by the power source frequency.</li> </ul>	<ul style="list-style-type: none"> <li>• Insert the plug in the opposite direction.</li> <li>• Install an outdoor antenna.</li> </ul>	6 5
Nothing happens when remote control buttons are pressed.	<ul style="list-style-type: none"> <li>• Rear Panel EXTERNAL/INTERNAL switch is set EXTERNAL position.</li> </ul>	<ul style="list-style-type: none"> <li>• Set the EXTERNAL/INTERNAL switch to INTERNAL position.</li> </ul>	4
I can not get any sound.	<ul style="list-style-type: none"> <li>• Power connected amplifier not turned on.</li> </ul>	<ul style="list-style-type: none"> <li>• Connection leads to amplifier not made correctly.</li> </ul>	6
Display says "Station not Available".	<ul style="list-style-type: none"> <li>• Ensure that DAB coverage exists in your area.</li> </ul>	<ul style="list-style-type: none"> <li>• Check that antenna is connected.</li> </ul>	5
I can not access secondary services.	<ul style="list-style-type: none"> <li>• At the time of publishing this manual not many secondary services are available, this will increase as more DAB stations start broadcasting.</li> </ul>	<ul style="list-style-type: none"> <li>• If a secondary service station is available, the secondary indicator "&lt;&lt; &gt;&gt;" will be displayed next to the station name.</li> </ul>	14
I hear a burbling sound on some stations.	<ul style="list-style-type: none"> <li>• DAB like other digital media is good at producing quality audio from a low level signal, however if this signal, level is too low a "burbling" sound can sometimes be heard.</li> </ul>	<ul style="list-style-type: none"> <li>• Use the ST-15S1's "Tuning aid" while repositioning your antenna to get the maximum signal strength and reduce this noise.</li> </ul>	5

# SPECIFICATIONS & DIMENSIONAL DRAWINGS

## FM tuner section

Frequency range .....87.5 MHz ~ 108.0 MHz  
 Antenna terminals .....75 Ω/ohm Unbalanced  
 Usable sensitivity .....1.1 μV (12.2 dBf)  
 .....1.1 μV (IHF)  
 Image interference ratio.....80 dB  
 IF interference ratio.....100 dB  
 AM suppression ratio.....50 dB  
 Effective selectivity.....50 dB (±400 kHz)  
 Capture ratio.....2.0 dB  
 Frequency characteristics  
 .....20 Hz ~ 15 kHz +0.5/-1.0dB  
 Signal-to-noise ratio  
 Monaural .....74 dB (IHF), 70 dB (DIN)  
 Stereo.....68 dB (IHF), 64 dB (DIN)  
 Total harmonic distortion  
 Mono 1 kHz (at 75 kHz dev.) .....0.2 %  
 Stereo 1 kHz (at 67.5 kHz dev.) .....0.3 %  
 Stereo separation 1 kHz (WIDE) .....43 dB

## DAB tuner section

Frequency range  
 .....174.928 (5A) ~ 239.200 (13F) MHz (BAND III)  
 ..1452.960 (LA) ~ 1490.624 (LW) MHz (L-BAND)  
 Sensitivity.....-99 dBm  
 Signal-to-noise ratio.....103 dB  
 THD+N .....0.007 % (1 kHz)  
 Channel separation .....100 dB (1 kHz)  
 Selectivity .....40 dB (at adjacent channel)

## Frequency response

.....+0.5/-0.5 dB (5 Hz ~ 20 kHz)  
 Digital output .....Optical, Coaxial  
 Sampling frequency .....48 kHz  
 Aerial terminal .....75 Ω/ohm, F female  
 Analog output level .....2 Vrms

## AM tuner section

Frequency range .....522 kHz ~ 1611kHz  
 Antenna terminals  
 .....Terminal type with loop antenna  
 Usable sensitivity .....18 μV  
 Signal-to-noise ratio .....53 dB

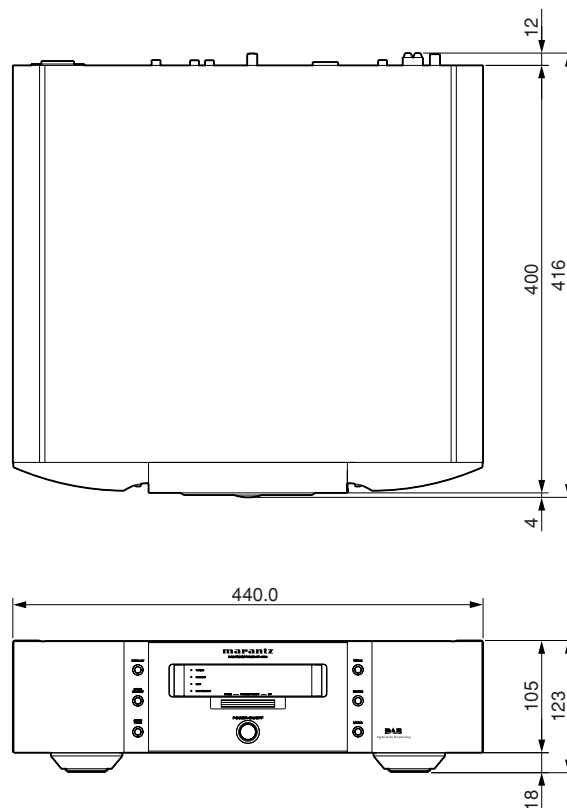
## General

Power supply.....AC 230 V, 50 Hz  
 Power consumption .....12 W  
 Weight .....12.3 kg

## Accessories

Audio connecting cord.....1  
 Power supply cord.....1  
 AM loop antenna .....1  
 FM indoor antenna .....1  
 DAB indoor antenna.....1  
 Remote Control Connecting Cord .....1  
 User Guide .....1  
 Registration Card .....1

\* For purposes of improvement, specifications and design are subject to change without notice.



(Unit: mm)



## SPECIFICATIONS & DIMENSIONAL DRAWINGS

### Band III (174 to 240 MHz)

Frequency	Level	Frequency	Level
174.928 MHz	5A	208.064 MHz	9D
176.640 MHz	5B	209.936 MHz	10A
178.352 MHz	5C	211.648 MHz	10B
180.064 MHz	5D	213.360 MHz	10C
181.936 MHz	6A	215.072 MHz	10D
183.648 MHz	6B	216.928 MHz	11A
185.360 MHz	6C	218.640 MHz	11B
187.072 MHz	6D	220.352 MHz	11C
188.928 MHz	7A	222.064 MHz	11D
190.640 MHz	7B	223.936 MHz	12A
192.352 MHz	7C	225.648 MHz	12B
194.064 MHz	7D	227.360 MHz	12C
195.936 MHz	8A	229.072 MHz	12D
197.648 MHz	8B	230.784 MHz	13A
199.360 MHz	8C	232.496 MHz	13B
201.072 MHz	8D	234.208 MHz	13C
202.928 MHz	9A	235.776 MHz	13D
204.640 MHz	9B	237.488 MHz	13E
206.352 MHz	9C	239.200 MHz	13F

### L-Band (1452 to 1490 MHz)

Frequency	Level	Frequency	Level
1452.960 MHz	LA	1473.504 MHz	LM
1454.672 MHz	LB	1475.216 MHz	LN
1456.384 MHz	LC	1476.928 MHz	LO
1458.096 MHz	LD	1478.640 MHz	LP
1459.808 MHz	LE	1480.352 MHz	LQ
1461.520 MHz	LF	1482.064 MHz	LR
1463.232 MHz	LG	1483.776 MHz	LS
1464.944 MHz	LH	1485.488 MHz	LT
1466.656 MHz	LI	1487.200 MHz	LU
1468.368 MHz	LJ	1488.912 MHz	LV
1470.080 MHz	LK	1490.624 MHz	LW
1471.792 MHz	LL		

## OTHERS

The section describes the care and maintenance tasks that must be performed to optimize the operation of your Marantz equipment.

### ■ Cleaning of equipment external surfaces

The exterior finish of your unit will last indefinitely with proper care and cleaning. Never use scouring pads, steel wool, scouring powders or harsh chemical agents (e.g., lye solution), alcohol, thinner, benzine, insecticide or other volatile substances as these will mar the finish of the equipment. Likewise, never use cloths containing chemical substances. If the equipment get dirty, wipe the external surfaces with a soft, lint-free cloth.

If the equipment becomes heavily soiled:

- dilute some washing up liquid in water, in a ratio of one part detergent to six parts water.
- dip a soft, lint-free cloth in the solution and wring the cloth till it is damp.
- wipe the equipment with the damp cloth.
- dry the equipment by wiping it with a dry cloth.



### ■ Repairs

Only the most competent and qualified service technicians should be allowed to service the factory-trained warranty station personnel have the knowledge and special facilities needed for repair and calibration of this precision equipment. After the warranty period has expired, repairs will be performed for a charge if the equipment can be returned to normal operation.

In the event of difficulty, refer to your dealer or write directly to the nearest location to you that is listed on the Marantz Authorized Service Station list. If writing, please include the model and serial number of the equipment together with a full description of what you think is abnormal about the equipment's behaviour.

**[www.marantz.com](http://www.marantz.com)**

You can find your nearest authorized distributor or dealer on our website.

**marantz**<sup>®</sup> is a registered trademark.