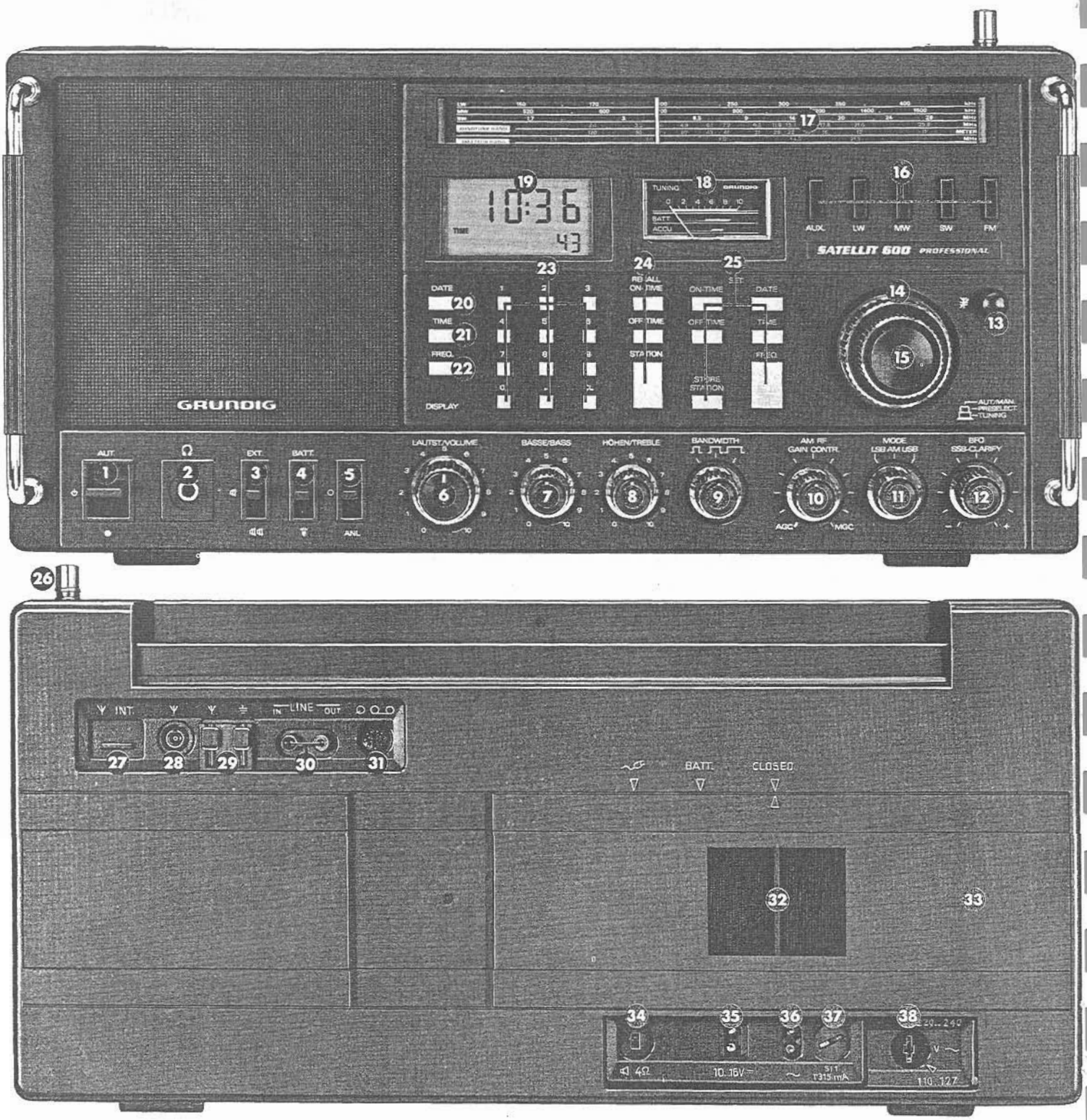
Operating instructions

GRUNDIG

SATELLIT 600 PROFESSIONAL


GRUNDIG
SATELLIT 600 PROFESSIONAL
AUX
LW
MW
SW
FM
DATE
TIME
FREQ.
DISPLAY
RECALL ON-TIME
OFF TIME
STATION
STORE STATION
SET
AUT/MAN.
PRESELECT
TUNING
AUT.
EXT.
BATT.
ANT.
LAUTST./VOLUME
BÄSSE/BASS
HÖHEN/TREBLE
BANDWIDTH
AM RF GAIN CONTR.
AGC
MGC
MODE LSB AM USB
BFO SSB-CLARIFY
INT.
IN
LINE
OUT
BATT.
CLOSED
4Ω
10...16V
T315 mA
110...127
220...240

(GB) Brief Guide to Operation

① **Function Switch**
AUT. = radio switches on and off automatically if programmed to do so (unless AUX. button ⑯ is pressed in).
⏻ = radio off
● = radio on

② **Headphone Socket**
For headphones with 6.3 mm jack plug (approx. 100 ohm) (not suitable for extension loudspeaker).

③ **Loudspeaker Switch**
🔊🔊 (lower position) = broadband loudspeaker and tweeter
🔊 (centre position) = tweeter disconnected
EXT. (upper position) = built-in loudspeakers disconnected; extension loudspeaker connected to socket ㉞ in circuit.

④ **Battery Check/Illumination Switch**
Top position = battery condition
Bottom position = scale, display and meter illuminated for a short period if the set is operated from batteries.

⑤ **ANL Switch**
Bottom position = Automatic Noise Limiter (ANL) in circuit.

⑥ **Volume Control** (LAUTST./VOLUME)

⑦ **Bass Control** (BÄSSE/BASS)

⑧ **Treble Control** (HÖHEN/TREBLE)

⑨ **AM Bandwidth Switch** (BANDWIDTH)
3 positions, coupled to switchable interference filter

⑩ **Rotary AGC/MGC Switch**
Control fully anticlockwise (switch position) = AGC (Automatic Gain Control) setting for normal AM radio reception. Turn clockwise to switch off AGC and control gain manually for single sideband reception.

⑪ **Operating Mode Switch for AM Wavebands**
LSB = Lower Side Band
AM = Normal radio reception
USB = Upper Side Band

⑫ **SSB/BFO (CLARIFY) Fine Tuning**

⑬ **Aerial Trimmer**
For matching the external aerial to the tuner on SW.

⑭ **Manual Tuning Control**
Magnetically notched. When the control is turned slowly, the bands are scanned in steps of:
1 kHz on AM (LW, MW, SW), and
10 kHz on FM (VHF).
When the control is turned rapidly, the sound is muted and the tuning steps are increased as follows:
from 1 kHz to 3 kHz on LW,
from 1 kHz to 5 kHz on MW,
from 1 kHz to 10 or 100 kHz on SW, and
from 10 kHz to 100 kHz on FM.

⑮ **Auxiliary Tuning Scale Drive and Fine Tuning**
The centre part of this control is a switch which can be used to bring the preselector and auxiliary tuning scale ⑰ into operation (the latter gives a rough indication of frequency on AM). When the switch is operated it does not remain pressed in but returns to its initial position so that it is flush with the outer part of the control. When the preselector and tuning scale drive are switched on, "AUT. PRESEL." appears in the display ⑲. It can be switched off by pressing the switch again, and "AUT. PRESEL." then disappears from the display. This switch has no action on VHF (FM).
The outer part of the control can be rotated and provides fine tuning. When the control is turned, the frequency reading in the display ⑲ does not change as only the aerial input and bandpass circuits are affected.

N.B.
Because of the high power consumption it is recommended that the auxiliary scale drive is not used on AM bands (LW, MW, SW) when the set is operated from batteries.

⑯ **Programme-Source Buttons**
AUX. = Playback from cassette/tape recorder or record deck.
LW = Longwave
MW = Mediumwave
SW = Shortwave
FM = VHF

⑰ **Auxiliary Tuning Scale**
Provides a rough indication of the preselector frequency on AM wavebands.

⑱ **Meter**
Indicates signal/field strength of AM/FM stations. Indicates battery/rechargeable battery condition when switch ④ is set to upper position.

⑲ **LCD Display**
provides the following information depending on the mode of operation:
- TIME = time of day (24 hour clock)
- ON-TIME = switch-on time
- OFF-TIME = switch-off time
- DATE
- FREQ. = frequency tuned to in MHz
- LW, MW, SW, FM = selected waveband
- *STAT. 1–32 = number of preset station*
- AUT. PRESEL. = automatic tuning switched on
- 88888 = incorrect operation
- ✱ ✱ ✱ ✱ ✱ and BAT. = standby batteries exhausted.

⑳ **DATE Button**
Press to display date. After 30 seconds the time of day will reappear if the set is off or the frequency of the station tuned to if it is on.

㉑ **TIME Button**
Press to display time

㉒ **FREQ. Button**
Press to display frequency

During radio reception either display can be selected

㉓ **Numerical Keyboard**
For entering the time of day, date, switching times, frequency and numbers allocated to preset stations.
The group also includes a CL (Clear) button for cancelling incorrect data entries.

㉔ **RECALL Buttons**
For displaying:
Switch-on time (ON-TIME)
Switch-off time (OFF-TIME)
Preset stations (STATION)

㉕ **SET Buttons**
Press to transfer figures entered with the numerical keyboard to the memory, eg: Switch-on time (ON-TIME)
Switch-off time (OFF-TIME)
Preset station (STORE STATION)
Date (DATE)
Time of day (TIME)
Frequency (FREQ.)

㉖ **Telescopic Aerial**
Extendable and capable of being tilted and rotated for optimum FM and SW reception.

㉗ **Aerial Switch**
Button pressed in = telescopic aerial connected
Button released = external aerial connected to socket ㉘ or clamping terminals ㉙ in circuit.

㉘ **Coaxial Socket** (DIN 45325)
For 75 ohm external aerial (for reception on all wavebands).

㉙ **Clamping Terminals for External Aerial and Earth**
For reception on all wavebands

㉚ **Phono LINE Sockets**
IN = for playback from tape recorder with AUX. programme-source button ⑯ pressed in.
OUT = high-level output for driving amplifier systems.

㉛ **PU/TR Socket (⌀⌀⌀)**
Input for playing records.
Record decks with a crystal or ceramic cartridge can be connected directly.
Decks with a magnetic cartridge require a preamplifier.
Input and output for recording with, and playing back from, tape/cassette recorders. The socket also provides a switching voltage for start-stop remote control of GRUNDIG cassette recorders.

㉜ **Battery Compartment** (for six HP 2 (IEC R 20) and two HP 7 (IEC R 6) batteries or equivalent)

㉝ **Mains Lead Compartment**

㉞ **Socket for External Loudspeaker**
4 ohm min.

㉟ **External Supply Socket**
10-16 V DC. Use Battery Adapter Cable II.

㊱ **Mains Supply Socket**
Before the mains lead is plugged in check that the voltage selector ㊳ is set to the voltage of the local mains supply.

㊲ **Mains Fuse Holder**
315 mA time-lag

㊳ **Voltage Selector**
220-240 V/110-127 V, 50/60 Hz, switchable by means of a coin (GB: 240 V AC). The unit is preset in the factory for a mains supply of 220-240 V.

Power Supply

Battery Operation

The battery compartment ㉜ and mains lead compartment ㉝ are located behind a sliding cover. Access to the battery compartment ㉜ can be gained by sliding the cover until the arrowhead on the cover is opposite to the one marked BATT. This allows the cover to be taken off completely. Full access to the cable compartment ㉝ is obtained by sliding the cover fully to the left. In this position the cover cannot be removed.
When installing or replacing batteries insert them as indicated by the symbols (⊟+) in the battery compartment or holder.
The set is designed to operate from two sets of batteries. Alkaline-manganese batteries usually last longest and are highly leakage-resistant.

- Two HP 7 (IEC LR 6 or R 6) batteries or equivalent for the clock and memory.
  These batteries should always be fitted even if the set is operated from the mains.
  When the set is switched off or if there is a mains failure, these "standby" batteries will supply the clock and memory with power.
- Six HP 2 (IEC LR 20 or R 20) batteries or equivalent for radio operation.
  When the set is operated from the mains these batteries are automatically disconnected. Exhausted batteries should be removed immediately from the set.
  If the set is not in use for long periods or is permanently operated from the mains, the batteries for the radio section should be removed from the set.
  No responsibility can be accepted for damage due to leaking batteries.

Note:

Alkaline-manganese batteries usually last longest and are highly leakage-resistant.

GRUNDIG Dryfit Battery

In place of the six batteries for radio operation you can install a GRUNDIG Dryfit battery 476. This battery can always be recharged.

A single charging operation is sufficient to operate the set on AM for about 21 hours or on FM for about 20 hours. The battery will be automatically charged when the set is switched off but connected to the mains supply or via socket ㉟ to an external DC supply of 12-16 V.

The charging time for a fully discharged battery is approx. 15 hours.

The set is fitted with an automatic charging circuit which prevents overcharging. To achieve a long battery life, never store it in a discharged condition.

Battery Condition Indicator

With the switch ④ in the upper position, the meter ⑱ indicates the radio battery voltage or the condition of the rechargeable battery. If the pointer reaches the green field of the meter ⑱ (BATT./ ACCU.), the batteries are satisfactory or the rechargeable battery is charged. If the pointer does not reach the green field, the batteries are exhausted and must be changed or the rechargeable battery must be charged.

This check is best done with the mains cable disconnected.

Five horizontal lines and "BATT." flashing in the display ⑲ with the set switched off indicate that the standby batteries are exhausted.

Before the standby batteries are replaced, the six radio batteries or rechargeable battery must first be removed. The set should be connected to the mains and be switched on while these batteries are being replaced to ensure that the contents of the memory and clock setting are retained.

Unless this is done, the time of day, date, switch-on and off times and preset stations will have to be entered in the memory again.

Mains Operation

The built-in power supply unit enables the set to be operated economically from 50-60 Hz mains and can be adjusted for mains voltages of 110-127 and 220-240 V (GB: 240 V AC).

The set must be disconnected from the mains when the setting of the voltage selector switch ㊳ is changed. The set must not be connected to the mains before this has been done. Take out the mains lead from the compartment ㉝ and connect it to socket ㊱.

Additional Information for Sets Sold in Great Britain

N.B. Ensure that the receiver is set for 220-240 V (GB: 240 V AC).

We recommend that a 13 amp 3-pin plug fitted with a 3 amp fuse be used. The brown lead must be connected to the live pin (marked "L" or "red" or "brown") and the blue lead to the neutral pin (marked "N" or "black" or "blue"). On no account should either of the wires be connected to the earth pin (marked "E" or "green/yellow"). If other mains plugs are used, ensure that they are protected with a 3 amp fuse.

Changing Fuses

Unplug the set from the mains before changing the fuses.

Open the fuse holder ㊲ with a coin. The fuse must only be replaced by one of the same rating, ie: 315 mA time lag ("slow blow").

Warning

Never make improvised repairs to defective fuses, as this may result in damage to the set.

Operation from an External DC Source

The set will operate from an external 10-16 V DC source connected to socket ㉟. This facility is intended for use in cars, boats or campers. Connection is with bat tery adapter cable II. Any batteries fitted are automatically disconnected.

Aerials

- Telescopic aerial ㉖ for receiving VHF/ FM and shortwave (SW) stations. For FM reception the aerial should be fully extended, then swivelled and rotated until best results are achieved. For SW reception the telescopic aerial should be vertical.
- For optimum reception on all wavebands a 75 ohm external aerial may be connected to socket ㉘. (Switch from telescopic aerial to external aerial by releasing button ㉗).
- An external aerial and earth can be connected to the clamping terminals ㉙ for all wavebands. Your dealer is familiar with local reception conditions and will be pleased to advise you on the choice of aerial and its installation.
- The set has a built-in ferrite rod aerial for receiving mediumwave and longwave broadcasts. The best position for receiving a station should be found by rotating the set about its vertical axis.

Radio

The set is switched on and off with switch ①.

● = On

⏻ = Off.

When the set is switched on and operated from the mains, the meter ⑱ and display ⑲ are permanently illuminated. When the set is connected to the mains, but switched off, the display ⑲ is faintly illuminated. The tuning scale ⑰ is permanently illuminated on the AM wavebands (LW, MW, SW) when the set is operated from the mains. When the set is operated from batteries, the scale ⑰, display ⑲ and meter ⑱ can be illuminated for a short period by moving switch ④ (💡) to the lower position.

The function switch ① switches the set on and is on the secondary side. To isolate the set completely from the mains, remove the mains plug from the wall socket.

Important

For normal radio reception on the AM bands the operating mode switch ⑪ should be set to "AM" (centre position) and the control ⑩ (AM/RF GAIN CONTR.) turned fully anticlockwise to the AGC (lock-in) position.

Programme Source Selection ⑯

AUX. = Cassette/tape recorder or record deck
LW = Longwave
MW = Mediumwave
SW = Shortwave
FM = VHF

If none of the buttons ⑯ are pressed when the set is switched on, (88888) will flash in the display to indicate incorrect operation. It will continue to flash until one of the buttons ⑯ is pressed in or the set is switched off. If one of the waveband buttons is pressed, the receiver will be tuned to the frequency received last in this band. With the AUX. button pressed the time of day will be displayed.

Volume and Tone Controls

Adjust the volume and tone to your requirements using the controls

⑥ (LAUTST./VOLUME)
⑦ (BÄSSE/BASS) and
⑧ (HÖHEN/TREBLE)

Head/Earphone Socket ② (∩)

The internal loudspeaker is switched off with switch ③.

Phone/Tape (TA/TB) Socket ㉛

Press button "AUX." ⑯ to amplify the sound from a cassette/tape recorder or from a record deck with a crystal or ceramic cartridge.

Loudspeaker Switch ③

With 3 settings.

In the lower setting (🔊), the built-in broadband speaker and tweeter are in operation. In the centre setting (🔊) the tweeter is switched off, in the upper setting (EXT.) both internal speakers are disconnected and any extension loudspeaker connected to socket ㉔ is in circuit.

It is thus possible with this switch to select either the built-in loudspeaker or an extension loudspeaker (if connected).

To improve the sound quality the tweeter should normally be switched on when listening to FM, records or tape recordings. On the AM bands it is advisable to use the tweeter only for strong local stations and with the bandwidth switch ⑨ set to "wide".

AM Bandwidth ⑨

On the AM bands (LW, MW, SW) the bandwidth can be set to 3 different values with switch ⑨ (BANDWIDTH). In the left-hand setting (⎍) the bandwidth is narrow. This makes it possible to obtain better separation of two adjacent stations, ie: an interfering adjacent station can be largely suppressed.

In the centre setting (⎍) the AM bandwidth is increased to improve the sound quality in cases where the "narrow" setting need not be used, eg: particularly when a fairly strong station is being received.

In the right-hand setting (⎍) the AM bandwidth is further increased; this can be useful, for example, to obtain optimum sound quality when a strong local station is received.

In all three settings an interference filter is in operation which is matched to the appropriate AM bandwidth.

ANL Switch ⑤

If AM reception is accompanied by cracks or clicks due to, eg: lightning discharges or the switching of electrical appliances, it is advisable to switch on the ANL (Automatic Noise Limiter) (switch ⑤ in lower setting). All noise peaks above the level of the desired signal are then "clipped". The cut-off level is automatically adjusted to the degree of modulation of the incoming station.

When headphones are used, the ANL provides effective protection against damage to your hearing. The ANL does not of course give any improvement where the frequency of the interference is high (crackle).

Aerial Trimmer ⑬

This trimmer operates only on the shortwave band when an external aerial is in use (from about 15 MHz upwards). It can also be used as an RF level control, since it provides a reduction in aerial signal level of up to approx. 15 dB. The trimmer does not have any effect if the built-in telescopic aerial ㉖ is in use (switch from telescopic to external aerial with the aerial switch ㉗).

How to Use the Numbered Buttons ㉓

These buttons are for keying in the information required for direct frequency selection, setting the clock, selecting preset stations etc., eg: time of day, date, switching times, frequency and numbers of preset station memories. To clear any incorrect entries, press the button marked CL (Clear) in this group. If a broadcast is being received, the tuning does not alter while entries are being made. The required function will only be carried out when one of the SET buttons ㉕ is pressed.

Only entries keyed in correctly are accepted by the set. If entries are made incorrectly, five "8s" will flash in the display ⑲ to indicate "incorrect operation".

Important

Each programming step (entering the relevant numerical information and pressing the appropriate set button) must be carried out not more than 30 seconds after the preceding one, otherwise the new figures already entered will be lost and the display will revert to its previous reading.

N.B.

Strong interference from, eg: badly suppressed domestic appliances, may cause the set to fail to accept entries because the operation of the input processor has been upset, with the result that the set can no longer be operated.

In this case the receiver should be switched off and the standby batteries (two HP 7 s) removed for about 1 min. (Reset).

After the batteries have been inserted again, the clock will start up after a short period and the display will show " 0:00 ". Then enter the time of day, date and switching times again.

Tuning to Stations

1. Waveband Selection

The VHF, longwave, mediumwave and shortwave bands can be selected with the appropriate button (FM, LW, MW or SW) in the group of buttons ⑯. Whenever a waveband is selected, the set immediately tunes to the station last tuned to on the band concerned. Other stations on the band can then be tuned to manually, by direct frequency input or by selecting preset memory positions as described below.

2. The Preselector and Auxiliary Tuning Scale Drive

These are operated by the control ⑮. The centre part of the control is a switch and is used to switch on the automatic preselector and the auxiliary tuning scale drive. When these are switched on "AUT. PRESEL." appears in the display ⑲. They can be switched off by pressing the switch again, and when this is done, "AUT. PRESEL." disappears from the display ⑲.

The switch in control ⑮ has no effect on FM. When the automatic preselector and the auxiliary tuning scale drive are in operation, the pointer of the scale ⑰ will give an approximate indication of frequency when AM stations are tuned to manually, by keying in the frequency with the numbered keys ㉓, or by selecting stations entered in the memory (see Sec. 3, 4 and 5 below).

The outer part of the control ⑮ can be rotated and is used to adjust the preselector. It does not change the frequency tuned to, only the sensitivity.

N.B.

Because of the power consumption of the motor, the use of the automatic preselector and auxiliary tuning scale drive is not recommended when the set is being operated from batteries.

Note

The automatic preselector and auxiliary tuning scale drive only provide approximate tuning. On SW especially, small manual corrections will need to be made by hand using the rotary part of the control ⑮. If the frequency is changed with control ⑭ after these adjustments have been made the auxiliary tuning scale drive will be activated and the preselector may be brought back to a setting which is not quite correct.

For this reason when small frequency changes are being made, or a broadcast band is being scanned or the set is being used for SSB reception, the frequency should first be tuned to with the automatic preselector on, and after fine adjustments have been made with the outer part of control ⑮, the preselector should be switched off. Depending on the shortwave band concerned, the frequency can be altered by 50-200 kHz without any need to adjust the preselector.

3. Manual Tuning

Once the required band has been selected, stations can be tuned to manually with the magnetically notched rotary tuning control ⑭. Each notch alters the tuning by 1 kHz in the case of AM (LW, MW, SW) and by 10 kHz in the case of VHF/FM. The frequency tuned to is shown in the display ⑲. While stations are being tuned to, there will be a certain amount of tuning noise. This can be eliminated (muted) by turning the tuning control more quickly. Under these circumstances, the tuning steps will also increase:

on LW from 1 kHz to 3 kHz,
on MW from 1 kHz to 5 kHz,
on SW from 1 kHz to 10 or 100 kHz,
on FM from 10 kHz to 100 kHz.

This of course reduces the time required to tune through rather large changes in frequency. Once a station has been tuned to, the outer part of the control ⑮ should be adjusted until a maximum reading is obtained on the field-strength meter ⑱.

If required the automatic preselector and auxiliary tuning scale drive can be used on AM (see Sec. 2). The auxiliary tuning scale ⑰ will then give an approximate indication of the frequency tuned to.

4. Direct Frequency Selection

The frequency of the station to be tuned to must be known (frequency data may be found in transmitter tables or local radio programme guides). The frequency is entered with the numbered buttons ㉓ (see also section entitled "How to Use the Numbered Buttons").

4.1 Selecting AM (LW, MW, SW) Stations

The frequency is always shown in MHz in the display ⑲.

If a single figure, eg: 6, is entered in the SW band, it will be identified as 6 MHz and 6.000 will apear in the display ⑲. To enter, say, 6.075 MHz in the SW band, key in 6075 with the group of buttons ㉓ and then press the FREQ. button ㉕ (6.075 will then appear in the display).

In the SW band it is not therefore necessary to key in the decimal point with the "●" button in the group of buttons ㉓.

We recommend that frequencies in the MW and LW bands be entered in MHz inserting the decimal point with the "●" button ㉓.

Examples:

To enter 200 kHz in the LW band, key in "0.2";

To enter 720 kHz in the MW band, key in "0.72";

To enter 1248 kHz in the MW band, key in "1.248".

In all cases the FREQ. button ㉕ must be pressed after keying in the frequency to complete the tuning operation.

The automatic preselector and auxiliary tuning scale drive can of cours be switched on and used when selecting stations by direct frequency selection on the AM bands.

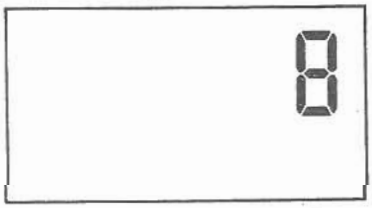
4.2 Selecting FM (VHF) Stations

In this case the decimal point ㉓ must be entered as well.

Example: Selecting 88.90 MHz

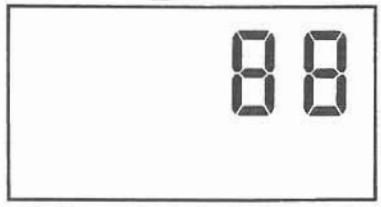
1. Press FM waveband button ⑯.
   The station tuned to on this band before the set was switched off will be heard.

2. Press button 8 ㉓.



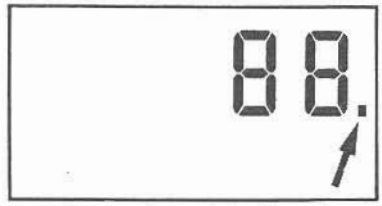
The station continues to be heard.

3. Press button 8 ㉓.



The station continues to be heard.

4. Press button ● ㉓.



The station continues to be heard.

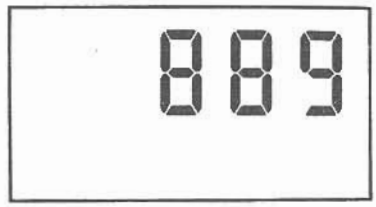
5. Press button 9 ㉓.

The station continues to be heard.

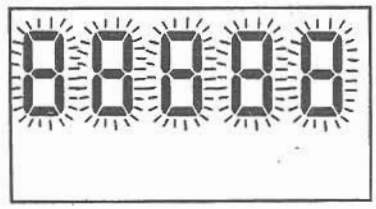
6. Press button FREQ. ㉕.

The new station tuned to will be received. If the second decimal place is a "0", it need not be entered.

Example of an entry without decimal point:



When the "FREQ." button ㉕ is pressed the display will indicate an incorrect operation.



The last station will continue to be received.

5. Automatic Selection of Stations

The set is equipped with a memory in which the frequencies of up to 60 stations can be entered in numbered positions. Once the frequency of a given station has been entered in the memory it is possible to tune to it instantly by selecting the appropriate band, keying in the number allotted to the station with the group of buttons ㉓, and then pressing the STATION RECALL button ㉔.

The number of stations which can be entered in the memory varies from band to band as follows:

LW: 4 stations
(buttons 1-4 ㉓ used for selection)

MW: 8 stations
(buttons 1-8 ㉓ used for selection)

FM: 16 stations
(all buttons ㉓ can be used for selection)

SW: 32 stations
(all buttons ㉓ can be used for selection).

N.B.

Remember that whenever a band is selected with the group of buttons ⑯, the last station tuned to in the band will be heard.

Example:

a. FM Stations

Suppose you wish to enter a VHF station broadcasting on 97.90 MHz on memory position "1" for the VHF (FM) band. First tune to the station manually or by direct frequency selection (see Sec. 2 and 3 above).
Now key in the number of the memory position (in this case "1") to which the station is to be allocated and press the "STORE STATION" button ㉕.

The station is then entered in the memory and can be selected at any time using the automatic selection system. At this point the display ⑲ will show

To select a (VHF) FM station entered in the memory, select the VHF band with the FM button (group of buttons ⑯), press button "1" ㉓ and then the STATION RECALL button ㉔.

b. AM Stations

AM stations are entered in the memory in exactly the same way and later selected as described above. In this case, however, the automatic preselector and the motor drive for the auxiliary tuning scale can be used if desired (press the centre part of the control ⑮) (see Sec. 2 above).
"AUT. PRESEL." will then appear in the display ⑲. When this drive system is on and AM stations entered in the memory are selected, the auxiliary tuning scale pointer will give an approximate indication of frequency. The display ⑲ will show the precise frequency, the waveband (FM) and the station memory position number as well as "AUT. PRESEL.".

The auxiliary tuning scale ⑰ is only for use on AM, and in addition to indicating frequency gives the centre frequency of SW and amateur bands (eg: 11.8 MHz is marked above the 25-m band as the centre frequency).

Clock Operation

The maximum 30 second interval between each programming step also applies to the clock. The time of day, the date and the switching times can be entered even with the set switched off. When the time is displayed, it is shown in hours and minutes with the seconds reading in small figures underneath.

Setting the Clock to the Time of Day

Example: The time of day (eg: 6.30) can be entered using the numbered buttons ㉓ in any the following ways:

"630", "6.30", "0630", "06.30".

It is not therefore essential to enter the decimal point. The clock will start running exactly from the minute displayed (ie: seconds reading "00") as soon as the SET-TIME button ㉕ is pressed. The time can be displayed when the display is showing, eg: frequency, by pressing button ㉑ (TIME). When the set is switched off, the display always shows the time of day.

Setting the Date

The date (eg: 9.7) can be entered using the numbered buttons ㉓ in any of the following ways:
"09.07" or "09.07." (the decimal point must be entered after the day, but is not essential after the month).

If the number of the day or month is less than 10, it should be preceded by a "0" (eg: January = 01).
The date is entered in the memory by pressing the DATE button ⑳ and will appear in the display ⑲ for 30 seconds.

When the set is switched on the date can be displayed for 30 seconds by pressing the DATE button ⑳, after which the display will revert to the frequency. The display can be switched to frequency immediately by pressing the FREQ. button ㉒.

If the set is switched off and the DATE button is pressed, the display will show the date for 30 sec. and then automatically revert to the time of day. The display can be switched to showing the time of day immediately by pressing the TIME button ㉑.

Programming the Switching Times

The set can be programmed to switch on and off automatically at preset times up to three times a day. The switching times are entered in the memory by means of the ON-TIME and OFF-TIME SET buttons ㉕.

The ON-TIME / OFF-TIME RECALL buttons ㉔ are for displaying the switching times once entered.

Example: Switch-on time 16.00 hours.

First select the switch-on time memory position by pressing the ON-TIME RECALL button ㉔. If a switch-on time has already been programmed, it will appear in the display ⑲. If not, the display will show a colon with two lines to the right and left of it. Enter the required switch-on time using the numbered buttons ㉓ (1-6-0-0) and enter it in the memory by pressing the ON-TIME SET button ㉕. The second and third switch-on time memory positions can then be selected with the ON-TIME RECALL button ㉔ and further switch-on times entered in the memory by repeating the above procedure.

A similar procedure is followed for the three switch-off times except that the OFF-TIME RECALL button ㉔ is pressed to select the switch-off time memory position and the OFF-TIME SET button ㉕ to enter the time in the memory.

The switch-on and -off times can also be programmed in alternately. This need not be done in chronological order. The clock processor will automatically arrange the switching times in chronological order, if the display is switched to another function (date, time or frequency) not more than 30 seconds after the last programming entry. Switching times already in the memory can be replaced by new ones. If a switching time is to be retained, one of the two remaining sets of switching memory positions ("on" and "off" times) must be selected by pressing the RECALL ON-TIME or OFF-TIME button a second time.

Setting the Radio to Switch On Automatically

If the set is to switch on automatically with a station tuned in (eg: as an alarm), press one of the waveband buttons LW, MW, SW or FM ⑯ and tune to a station which will be broadcasting at the switch-on time.

Then set the function switch ① to the top position (AUT.). The set will now switch on at the preset time (ON-TIME) tuned to the station received last in the waveband selected.

The set will switch off automatically at the preset switch-off time (OFF-TIME).

If you have a portable GRUNDIG cassette recorder you can also record radio broadcasts on tape in your absence. To do this, connect the universal 8-pin socket on the cassette recorder to the tape socket (⌀⌀⌀ ㉛) on the Satellit with the cable STK 227. Select record and start on the cassette recorder. When the Satellit switches on automatically, the cassette recorder will start recording.

With record/standby selected on the recorder it is advisable to connect it to the mains *(to reduce battery usage)*.

The SSB Section

The three controls and switches ⑩, ⑪, ⑫ belong to the SSB section and have the following functions:

Control ⑩ AM RF GAIN CONTR.:

The AGC (Automatic Gain Control) is switched on when this control is turned fully anticlockwise (switching position).

MGC (Manual Gain Control) comes into operation and the gain can be varied when the control is turned clockwise. Switch ⑪ MODE (LSB, AM, USB) is for selecting the operating mode. Control ⑫ BFO/SSB-CLARIFY is used for fine tuning SSB transmissions.

Important

The SSB unit should be switched off for normal reception on AM wavebands. Set the control ⑩ to AGC and switch ⑪ to AM, otherwise distortion and whistle may occur.

Reception of SSB Stations

In normal radio transmissions the carrier and two matching sidebands are transmitted. Such stations can be tuned to without difficulty. Tuning is more complicated in the case of the SSB (single-sideband) transmission system, used mainly by radio amateurs. Only one sideband is transmitted in this case; the carrier and the other sideband are suppressed. Moreover, this single sideband is only present when the SSB transmitter is modulated (usually by speech), ie: tuning is not possible during the pauses.

For SSB reception it is important to tune the receiver with the manual control ⑭ and the CLARIFY control ⑫ in such a way that the sideband being received and the carrier generated in the set match each other very accurately.

We recommend the following procedure (example: tuning to SSB transmissions in 40 m amateur band (7.0-7.1 MHz): initially the SSB unit is not in operation and the CLARIFY acontrol ⑫ is set to its centre position. Tune the set to 7.0 MHz and set the preselector ⑮ to its optimum position, then switch off the motor-driven tuning system (if selected) (press control ⑮ to release it). Then scan the band for amateur stations by slowly turning the manual tuning control ⑭. When a station is found (usually between 7.050 and 7.100 MHz), adjust the mannual control for maximum deflection of the pointer of the meter ⑱, which swings in step with the as yet unintelligible speech.

Then select MGC with switch ⑩ and adjust the control so that reading of the meter ⑱ is below "5". For weak stations it may be necessary to turn it fully clockwise. Next switch the MODE switch ⑪ to LSB. It is then usually possible to recognise that speech is being broadcast, although it may still be difficult to understand. Intelligibility can then be improved by turning the CLARIFY control ⑫ slowly clockwise or anticlockwise. If the speech is still unclear, increase or reduce the frequency by 1 kHz with the manual control and then adjust the CLARIFY control ⑫ again until the speech is intelligible. This may be necessary particularly for weak stations, because the optimum tuning point cannot be found or is difficult to find. It should always be possible to obtain intelligible speech. If the frequency of the SSB station is known it can of course be entered with the numbered keys ㉓; this greatly simplifies the tuning procedure. Finally it should be noted that the lower sideband (LSB) is transmitted in the 80 and 40 m amateur bands and the upper sideband (USB) in the 20 and 15 m amateur bands.

Specification

Power supply requirements:

From batteries:

Radio: 9 V DC supplied by six HP 2 (IEC R 20) batteries or equivalent, eg: Varta 3020 or 4020

For LCD clock and memory: Two HP 7 (IEC R 6) batteries or equivalent, eg: Varta 4006, Daimon 242, Philips 4506, Ucar 410 or Mallory MN 1500.

From external DC supply: 10-16 V DC (via socket ㉟)

From mains: via built-in power supply unit: adjustable to 220-240 V (GB: 240 V AC) or 110-127 V ±10%; 50/60 Hz.

Mains switch in transformer secondary circuit:

Fuses:

315 mA time-lag to IEC III
2 A time-lag to IEC III
2 A time-lag to IEC III
200 mA time-lag to BV 0820-455.97
Thermal cut-out to drawing No. 09623-332.04
500 mA time-lag to BV 0820-455.97

Output power (to DIN 45324):

Battery operation: 2.5 W sine
Mains operation: 10 W sine
15 W music power

Battery Life

(to DIN 45314)

with Varta 4020:
AM approx. 80 hours
FM approx. 78 hours

with Varta 3020:
AM approx. 45 hours
FM approx. 44 hours

Tuned circuits:

FM: 7 (4 tunable) + 2 ceramic filters
AM: 11 (3 tunable) + 1 ceramic filter

AGC:

AM: 3 stages

Tone control:

Separate bass and treble, continuously variable

Loudspeakers:

Permanent-magnet dynamic Superphon loudspeaker with hi-flux magnet, and tweeter (both speakers switchable).

Wavebands:

FM : 87.5 – 108 MHz
LW : 148 – 420 kHz (0.148 – 0.420 MHz)
MW: 510 – 1620 kHz (0.510 – 1.620 MHz)
SW : 1.6 – 26.1 MHz

Receivable SW Bands

Band	Frequency (MHz)	Centre (MHz)
160 m amateur	1.815 – 1.890	1.855
120 m radio	2.300 – 2.498	2.400
90 m tropic	3.200 – 3.400	3.300
80 m amateur	3.500 – 3.800	3.650
75 m radio	3.900 – 4.000	3.950
60 m tropic	4.750 – 5.060	4.905
49 m radio	5.950 – 6.200	6.075
41 m radio	7.100 – 7.300	7.200
40 m amateur	7.000 – 7.100	7.050
31 m radio	9.500 – 9.775	9.635
25 m radio	11.700 – 11.975	11.835
20 m amateur	14.000 – 14.350	14.175
19 m radio	15.100 – 15.450	15.275
17 m amateur	18.068 – 18.168	18.115
16 m radio	17.700 – 17.900	17.800
15 m amateur	21.000 – 21.450	21.225
13 m radio	21.450 – 21.750	21.600
12 m amateur	24.890 – 24.990	24.940
11 m radio	25.600 – 26.100	25.850

Built-in aerials:

Telescopic aerial for VHF/FM and SW Ferrite rod aerial for LW and MW.

Aerial trimmer:

For external aerial on SW

Terminal clamps:

For external aerial and earth

Connecting sockets:

Mains lead socket with battery-mains switch
Head/earphone socket for 6.3 mm jack plug (mono or stereo)
Socket for cassette/tape recorder or record deck: 7-pin standard socket (universal) Socket for external aerial (75 ohm coaxial socket for all wavebands)
Phono LINE (IN-OUT) socket.

Weight:

8.5 kg (without batteries)

Dimensions:

approx. 504x242x202 mm (WxHxD) (depth including handles for front panel).

Subject to technical alterations and alterations in styling.

Important

The set should only be cleaned with a soft, anti-static cloth.
Do not use aggressive polishes or cleaning agents.

Note

This set should not be exposed to a temperature higher than 60° C. Remember that this temperature may well be exceeded on the rear shelf in a car in strong sunlight and serious damage may result.

Notes on type of unit will be found on base of set.

Operation in Watercrafts and Land Vehicles

The Satellit can be secured for mobile operation.

For this two threaded holes M4 are provided in the base. Leave enough space at the back so that the sockets and controls remain accessible.

The screws M4 must be 13 – 15 mm longer than the thickness of the material on which the Satellit is fixed.