

# VHF Marine Radio

**NAVICOM**

**RT-300**

**INSTALLATION**

**AND OPERATION GUIDE**



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## TABLE OF CONTENTS

Equipment Description.....	2
Introduction.....	2
Safety Information.....	3
Using The Radio.....	3
Display.....	3
Function And Location Of The Controls.....	4
Basic Operation.....	4
Turning On/Off Your Transceiver.....	5
Adjusting Squelch.....	5
Selecting High/Low Power or Lock keypad.....	5
Selecting a Channel.....	5
Transmitting and Receiving.....	5
Scanning Features.....	6
Adding Channels to Memory.....	7
Using the Monitor Modes.....	7
Dual Watch.....	7
Tri Watch.....	8
Resetting the Radio.....	8
Using Your Battery.....	9
Using the Belt Clip.....	9
Technical Specifications.....	10
Frequency Charts.....	11

# Equipment Description

## INTRODUCTION

Your hand-held marine VHF radio RT300 represents the state-of-the-art in high-tech engineering. Designed for international operation. This allows you to transmit and receive on all international channels in the VHF marine band, as assigned by the International Union (ITU). This unit is a quality piece of electronic equipment, skillfully constructed with the finest components. It is approved with commercial-grade standards to give you clear, reliable communication.

Your radio is designed for many years of reliable, trouble-free performance. It is under control of a microprocessor resulting in enhanced features and performance. The microprocessor controls not only the marine band tuning but also dual watch, memory channels, and a host of other useful features.

Your radio has the following features:

**Channel 16 Switch** ----- provides quick access to channel 16, the universal marine frequently used channel.

**PLL (Phase Lock Loop) Controlled Circuitry** ---- Provides accurate and stable channel selection.

**Squelch Adjustment** ----- help eliminate noise between transmissions.

**Key Lock** ----- lets you lock the keypad in order to prevent the controls from accidental pressing.

**High/Low Power Selection** ---- lets you save power by selecting a suitable transmitting power for long or short distances.

**Battery Level Indicator** ---- shows the battery condition.

**Backlit LCD Display** ----- allows you to operate the transceiver in dark environment.

**Memory Channels** ---- lets you store channels as memory channels.

**DW/TRI** ---- lets you to select DW/normal mode or TRI/normal mode.

We recommend you record your radio's serial number here. This number is on the transceiver's back panel.

Serial Number \_\_\_\_\_

## **SAFETY INFORMATION**

Your hand-held marine VHF radio is NOT approved for use by the general population in an uncontrolled environment. This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control its RF exposure conditions.

1. When transmitting, hold the radio in a vertical position with its microphone 1 to 2 inches (2.5 to 5 cm) away from your mouth and keep the antenna at least 1 inch (2.5cm) away from your head and body.
2. The radio must be used with a maximum operating duty cycle not exceeding 50%, in typical Push-to-Talk (Manual PTT) configurations.

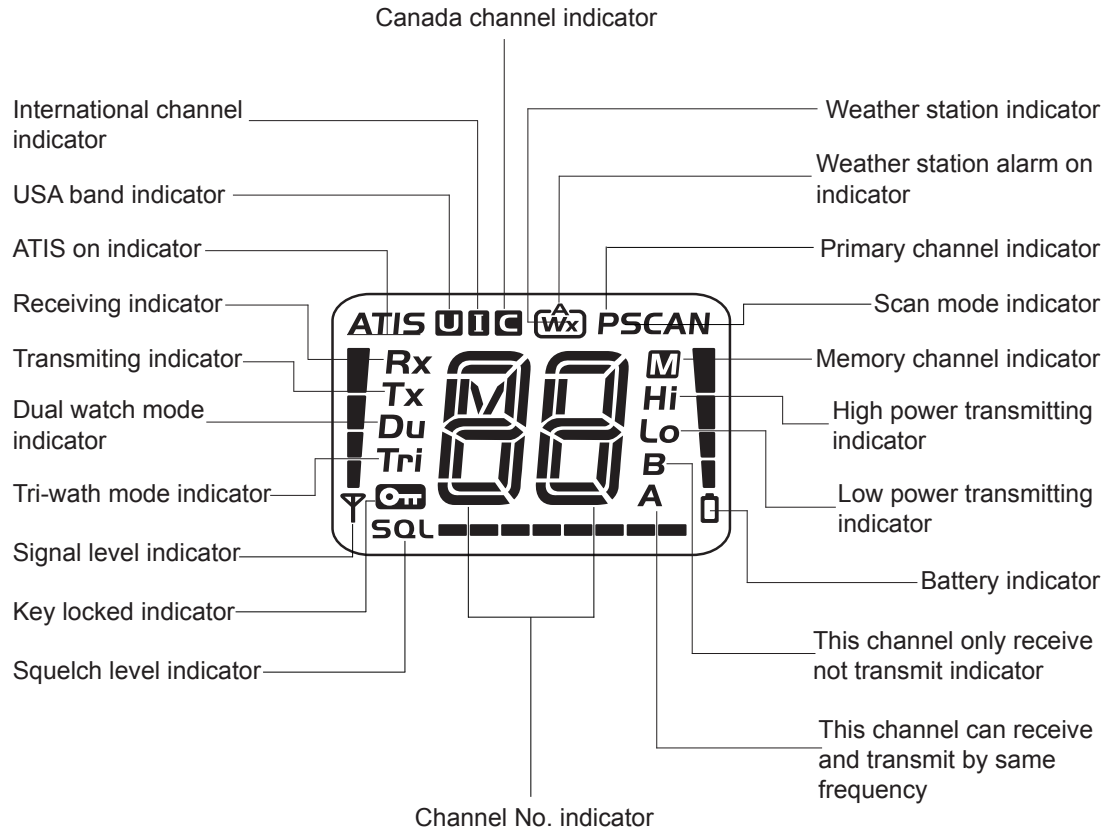
DO NOT transmit for more than 50% of total radio use time (50% duty cycle). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded.

The radio is transmitting when the "TX" icon on the LCD splay. You can cause the radio to transmit by pressing the PTT button.

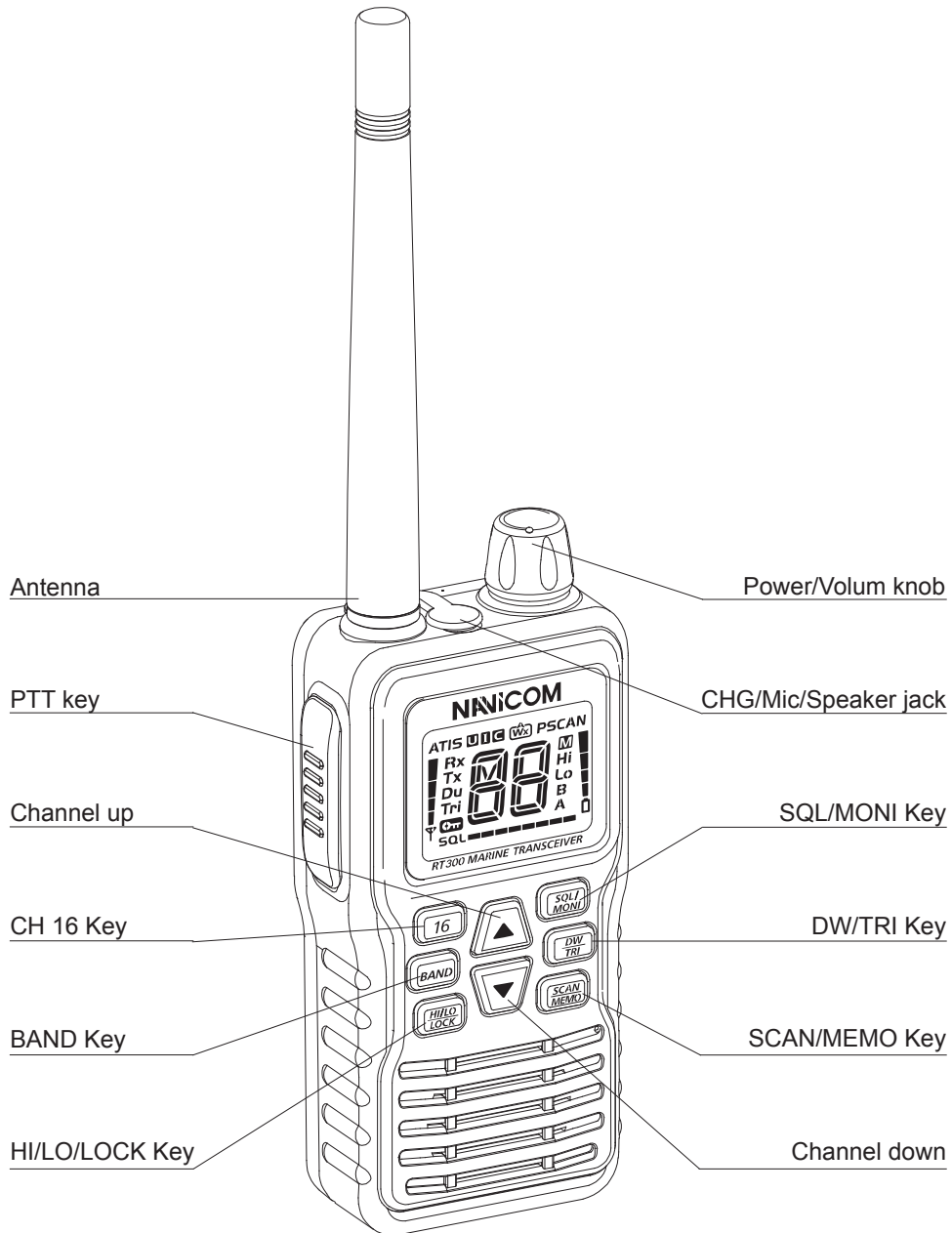
# USING YOUR RADIO

## DISPLAY

Your radio comes with a multifunctional display.



# FUNCTION AND LOCATION OF THE CONTROLS



## BASIC OPERATION

Before operating your radio, please install 4 "AA" size battery cells into the main unit.

## Turning On/Off Your Radio

Rotate **Power/volume** knob to turn the radio on or off with an indicating voice of click. And adjust the volume to a comfortable level.

## Adjusting Squelch

Press and release the **SQL** key to enter squelch mode, press the ▲/▼ to adjust squelch level. Press and release the **SQL** key again to leave Squelch mode.

Squelch is used to eliminate static and background noise and allows for silent operation of your RT300 until a transmission is received. If the squelch is too high, only the strongest transmissions can be heard, and when too low, intermittent static and noise are heard.

## Selecting High/Low Power or Lock keypad

Press and release this key to toggle the transmit power between high and low. When the unit is operating at low power, “Lo” appears on LCD and “Hi” appears on LCD when operating at high power.

You also can lock your radio keypad to avoid accidental pressing of keys by activating the key lock. Pressing and holding **Hi/Lo-Lock** button key lock icon will appear on LCD if it is enabled. The function is effective to all keys except **PTT** and **Hi/Lo-Lock** buttons.

## Selecting Channels

Press the ▲/▼ (**UP/DOWN**) button to scroll through the available channels.

**Note:** *Not all channel numbers are available in INT bands.*

## Transmitting and Receiving

**Press and hold** the Push-To-Talk (**PTT**) key to transmit on the selected channel, then release to receive. The TX indicator appears while transmitting.

## Scanning Features

Your RT300 is equipped with three types of scan options: All Scan, Saved(Memory) Scan and Priority Scan. If there are no channels in memory, the default is All Scan. This function automatically searches for transmissions on the channel set being scanned. If a TX signal is received, the scan stops on the receiving channel as long as it is present and the SCAN indicator flashes. If the signal is lost for five seconds, the radio resumes scanning. During the Scan Modes:

**Press** the Channel **▲/▼ (UP/DOWN)** button to change the scan direction. UP increments the channel while DOWN decrements it.

**Press and release** the **SCAN** button to terminate the SCAN mode. **DW/TRI** button do not function and sound an error beep if pressed.

**Note:** *Scan modes are disabled when the ATIS operation is active.*

### All Scan

**Press and release** the **SCAN** button when no channels are stored in memory to activate the All Scan function. The SCAN indicator appears on the LCD during All Scan. In All Scan mode, all channels in the channel set are scanned in sequence, assuming no channels have been stored in memory. After the last channel number has been scanned, the cycle repeats.

### Saved (Memory) Scan

**Press and release** the **SCAN** button when there is at least one channel in memory to activate the Saved Scan function. In Saved Scan Mode, the SAVED and SCAN indicators appear on the LCD. In Saved Scan mode, only the channels that have been saved in memory are scanned in sequence. After the last saved channel number has been scanned, the cycle repeats.



## Adding Channels to Memory

Your RT300 can store any channel (including Private Channels). The stored channels are the ones scanned in the Saved (Memory) Scan mode.

To Add Channels to Memory

1. During normal operation mode, use the **UP** or **DOWN** key to select the desired channel for programming.

2. Press and hold the **SCAN / MEM** key for 3 seconds.

The "M" icon appears to indicate the current channel has been saved in memory. Any number of channels can be saved as memory channels.

To Delete Channels from Memory

1. During the normal mode, use the **UP** or **DOWN** key to select the channel to be deleted.

2. Press and hold the **SCAN / MEM** key for 3 seconds.

The selected channel is deleted from memory.

## Using the Monitor Modes

The Watch Modes monitor the programmed Priority Channel and other user selected channel(s). The watch is halted when activity is detected on a monitored channel. Your RT300 is equipped with 2 types of monitor operations: Dual Watch and Tri Watch.

*Note: Monitor modes are disabled when the ATIS operation is active.*

### Dual Watch

**Press and release** the **DW/TRI** button to activate the Dual Watch mode. The "Du" indicator appears on the LCD. Dual Watch monitors the current working channel and Channel 16 in cycle. Dual Watch is demonstrated in the figure to the left; the sample working channel is CH 72.

**Press and release** the **DW/TRI** button to terminate Dual Watch and return to the previous working channel.

**Press and hold** the **DW/TRI** button to terminate Dual Watch mode and go into Tri Watch mode.

**Press and release** the **16** button to terminate Dual Watch mode and switch to the Priority channel.

*Note: During Dual Watch mode, the SCAN and Channel ▲ / ▼ (UP/DOWN) button are inactive and sounds an error beep if pressed.*

## Tri Watch

Press and hold the **DW/TRI** key for 3 seconds to activate Tri Watch mode. The TRI indicator appears on the LCD. Tri Watch monitors in cycle Channel 16, the current working channel and the channel you have set as the Favourite (PLUS) Channel. Tri Watch is demonstrated in the figure to the left; the sample working channel is CH 72.

**Press and release** the **DW/TRI** button to terminate Tri Watch and return to the previous working channel.

**Press and release** the **16** button to terminate Tri Watch mode and switch to the Priority Channel.

*Note: During Tri Watch Mode, the SCAN, and Channel ▲ / ▼ (UP/DOWN) keys are inactive and sounds an error beep if pressed.*

## Resetting your Radio

You can reset many radio settings back to their factory defaults, this will:

- Erase any channels stored in memory
- Return to International channels, if another mode is selected
- Only For US version
- Return power settings to their original state

To perform the reset:

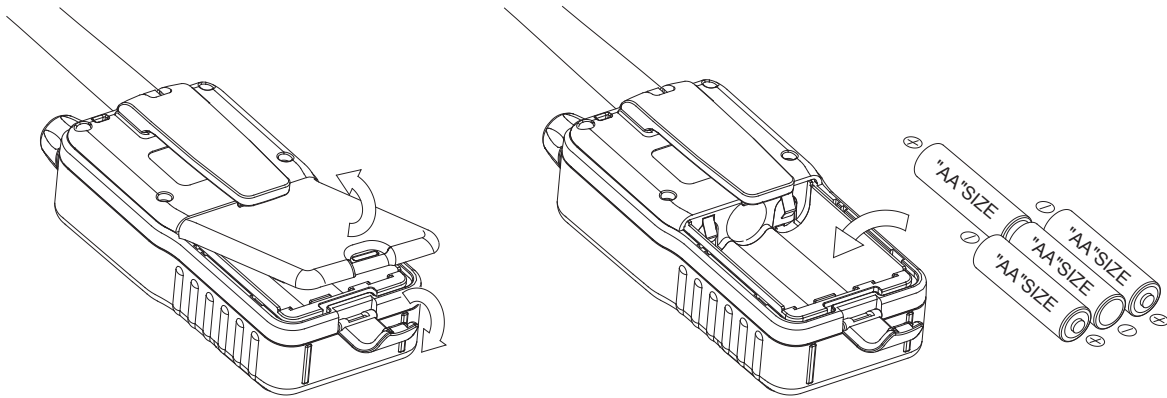
1. Turn the radio OFF.
2. Simultaneously press and hold the **SCAN & DW** buttons.
3. While continuing to hold these keys, power the radio ON.

The LCD remains blank for 2 seconds, and then the unit switches to channel 16.

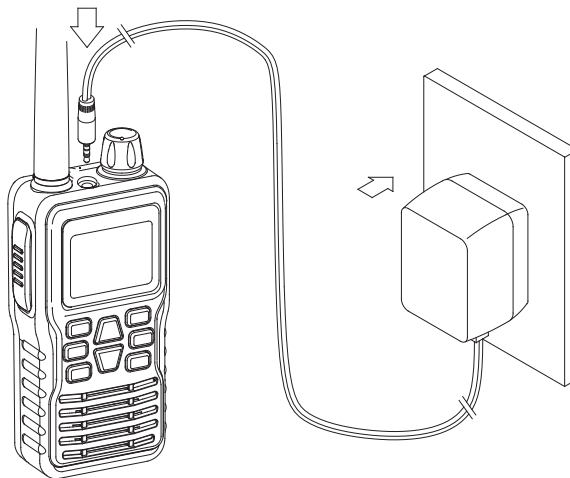
## Using the Batteries

When the battery level is low, Please replace the batteries. Before replacing the batteries, the volume control must be rotated fully counterclockwise, until a click is heard, to turn the power OFF. You can replace the old batteries just with 4 new AA size battery cells.

1. Lift up the lockclip and removed Battery Door.
2. If the ALKALINE or Ni-MH batteries supplied are used (optional), you can recharge the radio via the wall adapter (optional), to start the charging.



3. Please connect the AC wall adapter to a standard wall socket and insert the adapter plug into the CHG/MIC/SPK Jack on the top of the radio. After 12 ~ 14 hrs, the batteries will be fully charged.

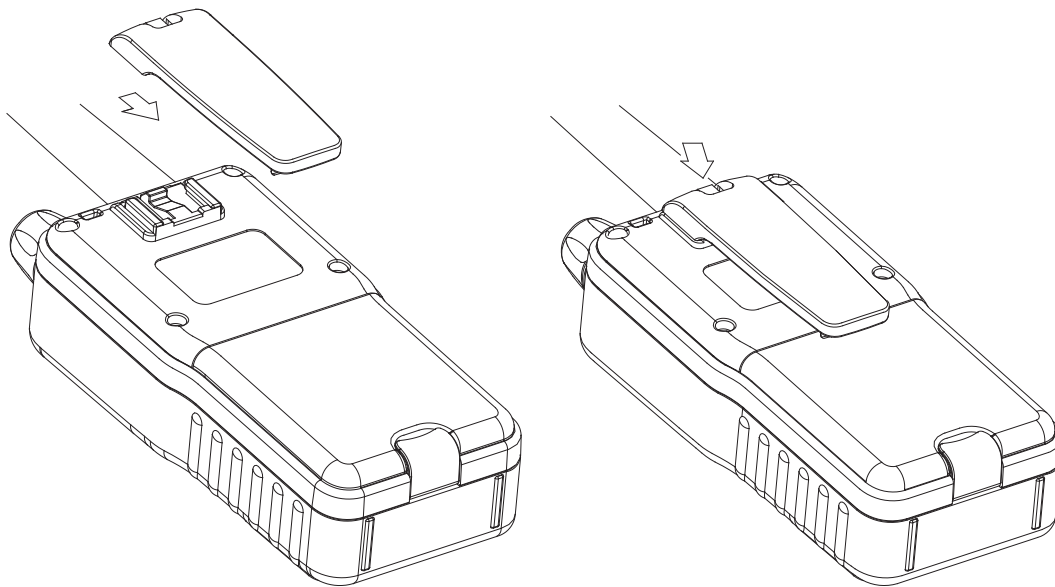


**Note:** The Ni-MH batteries and AC adapter are the optional accessories of the radio. The charging can not stop itself without prevention even when the batteries have been fully charged. Do not forget to remove the adapter from the radio when the radio is fully charged.

**Don't overcharge the batteries for more than 48 hrs. otherwise the batteries will be damaged.**

## Using the Belt Clip

The supplied belt clip lets you easily, Attach the belt clip to the radio as illustrated below:



## TECHNICAL SPECIFICATIONS

Channels.....	All International Channels
Frequency Method.....	Phase Lock Loop
Frequency Range.....	TX 156.025~157.425 MHz RX 156.300~162.000 MHz
Power Supply.....	4xAA
Operating Temperature.....	-15°C to +55°C
Dimensions (HWD).....	123mm(H)*60mm(W)*37mm(D)
Weight (without Battery).....	190g

### TRANSMITTER

Power Output.....	0.8 or 5 Watts (Switch Selectable)
Modulation Type.....	FM
Hum and Noise Attenuation.....	40dB
Audio Distortion.....	5%
Spurious Suppression.....	-36dBm

### RECEIVER

Sensitivity at 12dB Sinad.....	0.25 $\mu$ V
S/N Ratio (20dB).....	0.8 $\mu$ V
Squelch Sensitivity.....	Threshold -10dB $\mu$ V(EMF)
Adjacent Channel Rejection.....	70dB
Audio Power Output.....	280mW at 10% THD
Spurious Response Attenuation.....	70dB
Hum and Noise Attenuation.....	40dB
Modulation Acceptance Bandwidth.....	+/- 7.0KHz Minimum

**Note:** *The data are typical, and the practical ones may be varied.*

# FREQUENCY CHARTS

Unit: MHz

CH	INT				CH	INT			
	FREQUENCY (MHz)					FREQUENCY (MHz)			
	TX	RX	MODE	REMARK		TX	RX	MODE	REMARK
<b>01</b>	156.050	<b>160.650</b>	<b>D</b>		<b>60</b>	156.025	<b>160.625</b>	<b>D</b>	
<b>02</b>	156.100	<b>160.700</b>	<b>D</b>		<b>61</b>	156.075	<b>160.675</b>	<b>D</b>	
<b>03</b>	156.150	<b>160.750</b>	<b>D</b>		<b>62</b>	156.125	<b>160.725</b>	<b>D</b>	
<b>04</b>	156.200	<b>160.800</b>	<b>D</b>		<b>63</b>	156.175	<b>160.775</b>	<b>D</b>	
<b>05</b>	156.250	<b>160.850</b>	<b>D</b>		<b>64</b>	156.225	<b>160.825</b>	<b>D</b>	
06	156.300	156.300	S	1W ATIS	<b>65</b>	156.275	<b>160.875</b>	<b>D</b>	
<b>07</b>	156.350	<b>160.950</b>	<b>D</b>		<b>66</b>	156.325	<b>160.925</b>	<b>D</b>	
08	156.400	156.400	S	1W ATIS	67	156.375	156.375	S	
09	156.450	156.450	S		68	156.425	156.425	S	
10	156.500	156.500	S	1W ATIS	69	156.475	156.475	S	
11	156.550	156.550	S	1W ATIS	71	156.575	156.575	S	1W ATIS
12	156.600	156.600	S	1W ATIS	72	156.625	156.625	S	1W ATIS
13	156.650	156.650	S	1W ATIS	73	156.675	156.675	S	
14	156.700	156.700	S	1W ATIS	74	156.725	156.725	S	1W ATIS
15	156.750	156.750	S	1W	75	156.775	156.775	S	1W
16	156.800	156.800	S		76	156.825	156.825	S	1W
17	156.850	156.850	S	1W	77	156.875	156.875	S	
<b>18</b>	156.900	<b>161.500</b>	<b>D</b>		<b>78</b>	156.925	<b>161.525</b>	<b>D</b>	
<b>19</b>	156.950	<b>161.550</b>	<b>D</b>		<b>79</b>	156.975	<b>161.575</b>	<b>D</b>	
<b>20</b>	157.000	<b>161.600</b>	<b>D</b>		<b>80</b>	157.025	<b>161.625</b>	<b>D</b>	
<b>21</b>	157.050	<b>161.650</b>	<b>D</b>		<b>81</b>	157.075	<b>161.675</b>	<b>D</b>	
<b>22</b>	157.100	<b>161.700</b>	<b>D</b>		<b>82</b>	157.125	<b>161.725</b>	<b>D</b>	
<b>23</b>	157.150	<b>161.750</b>	<b>D</b>		<b>83</b>	157.175	<b>161.775</b>	<b>D</b>	
<b>24</b>	157.200	<b>161.800</b>	<b>D</b>		<b>84</b>	157.225	<b>161.825</b>	<b>D</b>	
<b>25</b>	157.250	<b>161.850</b>	<b>D</b>		<b>85</b>	157.275	<b>161.875</b>	<b>D</b>	
<b>26</b>	157.300	<b>161.900</b>	<b>D</b>		<b>86</b>	157.325	<b>161.925</b>	<b>D</b>	
<b>27</b>	157.350	<b>161.950</b>	<b>D</b>		<b>87</b>	157.375	157.375	S	
<b>28</b>	157.400	<b>162.000</b>	<b>D</b>		<b>88</b>	157.425	157.425	S	