

***YAESU***

***The radio***

**144/430MHz  
DIGITAL/ANALOG TRANSCEIVER**

**C4FM FDMA**

***FT1DR***

**Instruction Manual  
(APRS Edition)**

Thank you for purchasing this Yaeau product.

This instruction manual explains information related to the "APRS Function".

For information on basic operation of the transceiver, please refer to the enclosed FT1DR instruction manual.

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# Using the APRS® Function

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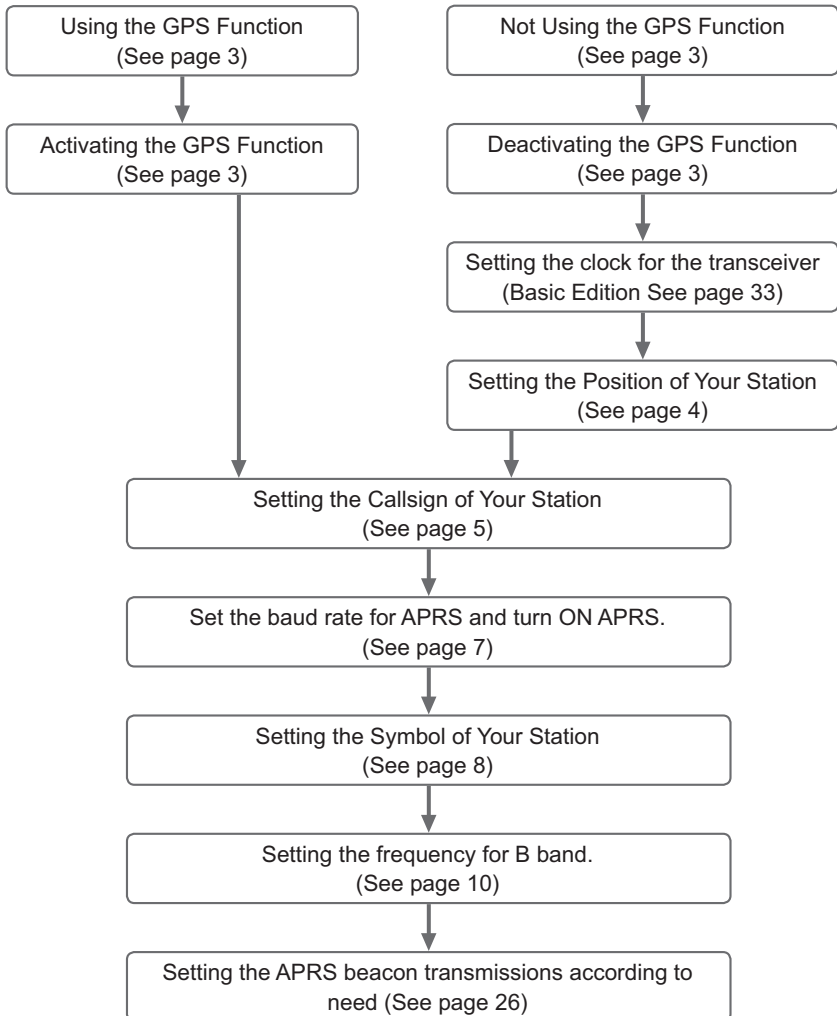
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## Initial Settings for APRS®

The APRS (Automatic Packet Reporting System) is a system proposed by WB4APR, Bob Bruninga for data communication by acquiring the station location information and sending/receiving messages. Manually inputting position data beforehand will allow location reporting on transmissions without using the GPS function.









Upon receiving an APRS signal from a remote station, information such as direction to the remote station from your station, distance to the remote station, and speed of the remote station appear on the LCD of your transceiver.

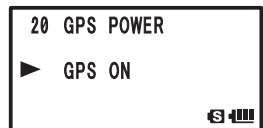
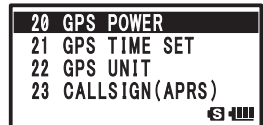
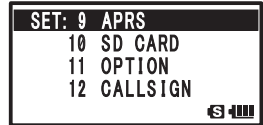
### Initial Setup Procedure for APRS Operation.



## Operating APRS using the GPS function.

When the GPS function of the transceiver is used, your transceiver's internal clock and position are automatically set by the obtained GPS information. If you use APRS with your transceiver while walking or traveling, the use of the GPS function is recommended.

- 1 Press  over 1 second.  
Enters the Set mode.
  - 2 Turn  to select [9 APRS].
  - 3 Press .
  - 4 Turn  to select [20 GPS POWER].
  - 5 Press .
  - 6 Turn  to select "ON".  
ON: GPS can be used.  
OFF: GPS cannot be used.
- Tip** Default: ON
- 7 Press .
  - 8 Press .
- Exits from the Set mode.



When operating APRS, the position information obtained from GPS can be used for your transceiver's position information. Select [9 APRS] → [24 MY POSITION] and set [24 MY POSITION] to [GPS]. If you set the Lat/Lon or P1 to P10 to other than [GPS], the GPS data is nullified even if it is obtained. The position information designated by this setting, such as Lat/Lon or P1 to P10, is transmitted.

### Tip

- Your own station position information obtained from GPS can be registered to 10 memory channels (P1 to P10). The registered position information may then be used to transmit the position of your own station (See page 63).
- To use the GPS function for APRS operation, select [9 APRS] → [24 MY POSITION] and then set [24 MY POSITION] to [GPS] in the Set mode.
- Using the GPS function increases the consumption current by approximately 30mA. As a result, the battery life is reduced by about 20% compared to when the GPS function is not used.
- If dual reception is used while APRS is active, weak signals may be inaudible due to noise produced by the APRS unit.

## Operating APRS without using the GPS function.

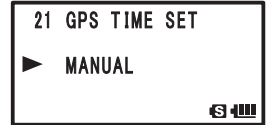
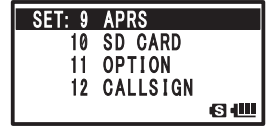
In order to operate APRS without using the GPS function, set the clock and position information manually by performing the following steps.

### ● Setting the clock.

If the internal clock is set, it will be reflected in the time display on the APRS screen. For details, refer to "Setting clock time" (Basic Operation See page 33).

## Initial Settings for APRS®

- 1 Press over 1 second.  
Enters the Set mode.
- 2 Turn to select [9 APRS].
- 3 Press .
- 4 Turn to select [21 GPS TIME SET].
- 5 Press .
- 6 Turn to select [MANUAL].
- 7 Press .  
GPS TIME SET is set to MANUAL.
- 8 Press .  
Exits from the Set mode.



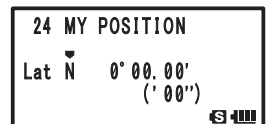
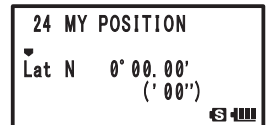
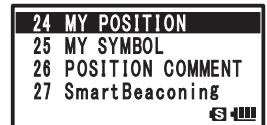
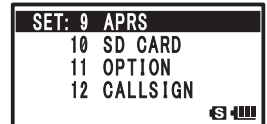
### Tip


- I-GATE and Digipeater through connection to a PC cannot be operated.
- You can change the unit of APRS data by selecting [9 APRS] → [11 GPS UNIT].
- Even if the internal clock is set to MANUAL, if the GPS function is used, time data will be obtained from GPS and the precise time will be displayed. This function can be set to OFF (MANUAL) by selecting [9 APRS] → [21 GPS TIME SET].

## ● Position Information Setting (Datum: WGS-84)

Manually enter the position information of your station.

- 1 Press over 1 second.  
Enters the Set mode.
- 2 Turn to select [9 APRS].
- 3 Press .
- 4 Turn to select [24 MY POSITION].
- 5 Press .
- GPS setting items appear on the LCD.  
**Tip** Default: GPS
- 6 Turn to select [Lat].
- 7 Press .
- The cursor moves to setting item for latitude.  
**Tip** Pressing returns the cursor to the previous item.
- 8 Turn to set [N (north latitude)] or [S (south latitude)].
- 9 Press .
- The cursor moves to the setting items for [Degree].  
**Tip** Pressing returns the cursor to the previous item.
- 10 Turn to set [Degree].
- 11 Press .
- The cursor moves the setting item for [Minute].  
**Tip** Pressing returns the cursor to the previous item.



12 Turn  to enter [Minute].

13 Press .

The cursor moves to the setting item for [1/100 minute].

**Tip** Pressing  returns the cursor to the previous item.


14 Turn  to enter [1/100 Minute].

Seconds will be displayed in parentheses.

15 Press .

The cursor moves to Lat.


**Tip** Pressing  returns the cursor to the previous item.

16 Turn  to select [Lon].

17 Press .

The cursor moves to setting item for longitude.

**Tip** Pressing  returns the cursor to the previous item.

18 Turn  to set [E (east longitude)] and [W (west longitude)].

19 Press .


The cursor moves to the next setting item.

**Tip** Pressing  returns the cursor to the previous item.

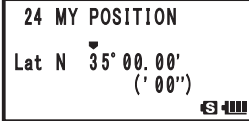
20 Enter [Degree], [Minute], and [1/100 Minute] by following steps 9 through 13.

21 Press .

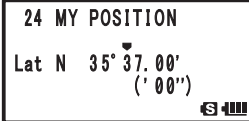
The position information is set.

22 Press .


Exits from the Set mode.



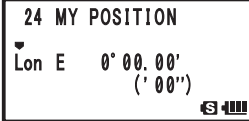
24 MY POSITION  
Lat N 35° 00.00'  
( ' 00'')



24 MY POSITION  
Lat N 35° 37.00'  
( ' 00'')



24 MY POSITION  
Lat N 35° 37.16'  
( ' 10'')



24 MY POSITION  
Lon E 0° 00.00'  
( ' 00'')

## Setting the Callsign of Your Station

Register the callsign of your transceiver for transmitting beacons or transmitting and receiving messages using APRS. Enter the callsign such as [JA1ZRL-7]. The [-7] of the callsign represents SSID (Secondary Station Identifier). There are 16 types including no SSID. Generally, the SSID descriptions shown below are used for APRS.

SSID	Description	SSID	Description
None	Fixed station capable of exchanging messages	-8	Maritime mobile station, Land mobile station
-1	1200bps narrow intermediate band digipeater	-9	Operating on a mobile device such as FTM-350 transceiver
-2	9600bps digipeater	-10	I-Gate station, Internet connection station
-3	1200bps wide band digipeater	-11	Flying balloon, airplane, spacecraft, etc.
-4	Digipeater, mobile station, weather station, etc.	-12	1-way Tracker (station incapable of exchanging message)
-5	Operating station such as mobile device (smartphone)	-13	Weather Station

## Initial Settings for APRS®

SSID	Description	SSID	Description
-6	Operating station such as for satellite communication and event management	-14	Truck mobile station
-7	Handy type operating station such as FT1DR transceiver	-15	digipeater, mobile station, weather station, etc.

- Press over 1 second.  
Enters the Set mode.
- Turn to select [9 APRS].
- Press .
- Turn to select [23 CALLSIGN(APRS)].
- Press .
- Enter call sign using numeric keys.  
Enter a call sign using numeric keys with reference to the following table.

Numeric key	A, 0(Alphanumeric)
	1
	ABC2
	DEF3
	GHI4
	JKL5
	MNO6
	PQRS7
	TUV8
	WXYZ9
	0

- Tip** • When is pressed, a character is deleted and the cursor moves to the left.  
• Pressing moves the cursor to the right.

- Press to move the cursor.
- Repeat steps 5 through 7 to enter the call sign.  
Up to 6 digits can be entered for the call sign.

### [Setting call sign without SSID]

To set an SSID, go to step 11.

- Press .
- Call sign is registered.
- Press .
- Exits from the Set mode.

SET: 9 APRS
10 SD CARD
11 OPTION
12 CALLSIGN

23 CALLSIGN(APRS)
24 MY POSITION
25 MY SYMBOL
26 POSITION COMMENT

23 CALLSIGN(APRS)
•

23 CALLSIGN(APRS)
JA1ZRL


23 CALLSIGN(APRS)
JA1ZRL - 7

**[Setting call sign with SSID]**

11 Press .

12 Turn  to set SSID.

SSID is displayed in [-] after the call sign. It is recommended to select [7] with this transceiver.

13 Press  to register SSID.

14 Press .

Exits from the Set mode.

**Setting APRS baud rate**

Set the baud rate for APRS. If the baud rate is set to 1200bps/9600bps, the APRS function is activated.


If the baud rate is set to OFF, the APRS functions is deactivated.

Setting the baud rate to 1200bps, the APRS can be operated on AFSK 1200bps packets.

Setting the baud rate to 9600bps, the APRS can be operated on GMSK 9600bps packets.

1 Press  over 1 second.

Enters the Set mode.

2 Turn  to select [9 APRS].

3 Press .

4 Turn  to select [4 APRS MODEM].


5 Press .

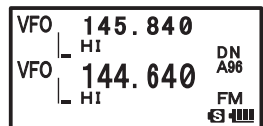
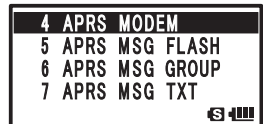
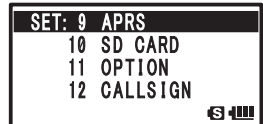
6 Turn  to set APRS baud rate.

The APRS baud rate can be selected from the following 3 types.

[OFF] [1200bps] [9600bps]

**Remark** Default: OFF

7 Press  to set the APRS baud rate and exit from the Set mode.

**Caution**

If APRS is not to be operated, select [OFF] by following step 6, shown above.



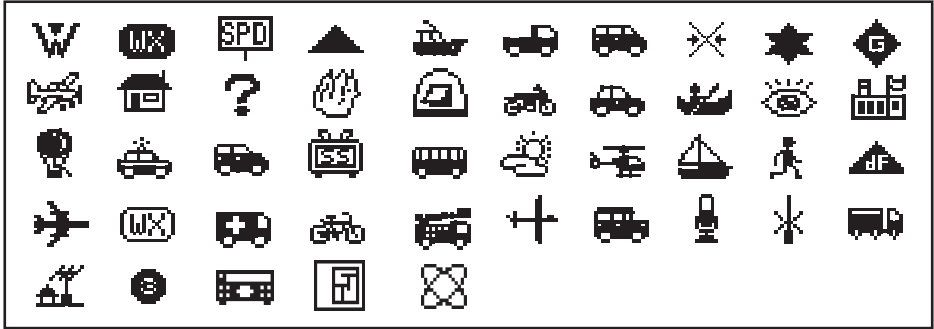
## Initial Settings for APRS®

### Tip

- If the baud rate is set to 1200bps/9600bps, the reception save function is automatically deactivated.
- If you set [8 APRS MUTE] to [ON] after selecting [9 APRS] → [8 APRS MUTE], [B] band reception volume (such as beacon and sound) will be muted and [A12] or [A96] will blink.

## Setting the Symbol of Your Station

Set the symbol for your station to transmit. The symbol can be selected from 45 types. The default setting symbol is [A].



1 Press **SET** **DISP** over 1 second.

Enters the Set mode.

2 Turn **DIAL** to select [9 APRS].

3 Press **ENT**.

4 Turn **DIAL** to select [25 MY SYMBOL].

5 Press **ENT**.

MY SYMBOL 1 appears on the LCD.

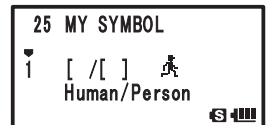
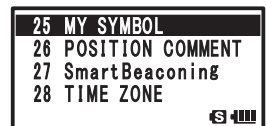
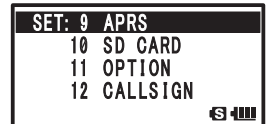
6 Turn **DIAL** to select a symbol.

Select between 4 types: [MY SYMBOL 1], [MY SYMBOL 2], [MY SYMBOL 3], or [MY SYMBOL 4].





The symbol for [MY SYMBOL 4] can be directly entered with characters.

For instructions on how to enter a symbol, see the next page.

Pressing **ENT** changes the number portion of MY SYMBOL from [1~4] to [▶], and can be changed to often used symbols (selectable from the frame above).



**Remark** Default value of each symbol is as follows.

MY SYMBOL	Code	Symbol
1	[ / ]	 Human/Person
2	[ /b ]	 Bicycle
3	[ /> ]	 Car
4	[ YY ]	 Yaesu Radios

7 Press .

To set the symbol of your station

8 Press .


Exits from the Set mode.

### ● Directly entering symbol characters.

If you do not find any desired symbols, symbol characters can be directly entered.

1 Press  over 1 second.

Enters the Set mode.

2 Turn  to select [9 APRS].

3 Press .


4 Turn  to select [25 MY SYMBOL].

5 Press .

6 Turn  to select [MY SYMBOL 4].


7 Press .


[ 4 ] changes to [ ▶ ]

Pressing  returns [ ▶ ] to [ 4 ].

8 Press .

The cursor moves to Symbol Table ID.


Pressing  returns the cursor back to [ ▶ ].

9 Turn  to enter characters.

10 Press .

The cursor moves to the setting items for Symbol Code.

Pressing  moves the cursor back to [Symbol Table ID].

11 Turn  to enter characters.

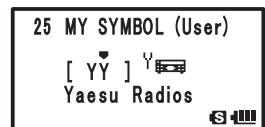
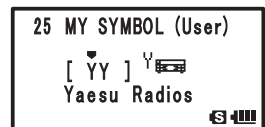
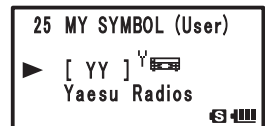
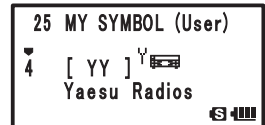
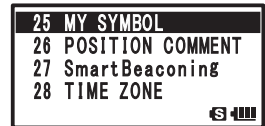
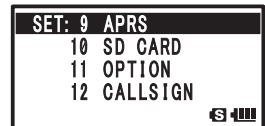
12 Press .

The symbol is set.

13 Press .

Exits from the Set mode.

**Tip** For the list of latest symbols, see [<http://aprs.org/symbols/symbolsX.txt>] or [<http://aprs.org/symbols/symbolsnew.txt>].



## Receiving APRS® beacons

Set the APRS operating frequency before receiving beacons.

### Setting the operating frequency for APRS.

The frequency varies between regions and countries.

1 Press  .

Set the operating band to B-band.

APRS can only operate on B-band.

Check that A12 or A96 is displayed in the right edge section of the frequency. (See page 7).

2 Set the operating frequency.

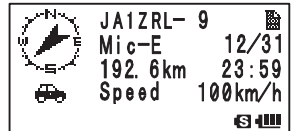
**Tip** If the baud rate is set to 1200bps/9600bps in [9 APRS] → [4 APRS MODEM], the reception save function is automatically deactivated.

## Receiving APRS® beacons



### ● Displaying received beacons on the APRS popup screen


If a beacon is received while the frequency display screen is opened, a bell will sound and the APRS popup screen will appear.

The [APRS POPUP SCREEN] and the [STATION LIST DESCRIPTION SCREEN] are basically the same.



### ● Displaying received beacons on the STATION LIST screen

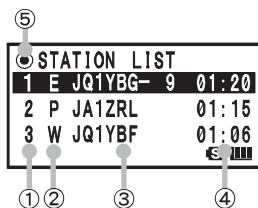
Pressing  then  in the frequency display screen opens the STATION LIST screen.

Pressing  key toggles between STATION LIST and Message LIST screen.



## Description of APRS beacon screen and key operation.

### ● Description of STATION LIST screen and key operation.



- ① **Number:** Received beacons (up to 60) are displayed in the order received.
- ② **Character:** The station list character is displayed. For instructions, see the next page.
- ③ **Station name:** The call sign of received beacon or Object name/Item name is displayed.
- ④ **Time or date:** Time (HH Hours: MM Minute) or Date (MM Month/DD Day) is displayed. The time display will change to the date of the next day.
- ⑤ **Beacon Automatic/Manual Transmission Icon:** Not lit (Manual), if  is lit (AUTO) (See page 27), if  is lit (SMART) (See page 27)



... Scrolls through screen



... Moves to APRS MESSAGE screen.



... Moves to MESSAGE EDIT screen.



... Moves the cursor to the top of STATION LIST.



... Deletes the selected beacon station on screen. (See page 26)



... Moves to [STATION LIST] screen (See pages 13 to 21)



... (Press the key over 1 second) ... Set mode (See page 45)



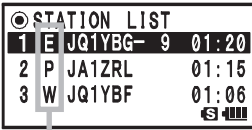
... Manual transmission of beacon (See page 26)

### Tips

- When a beacon with APRS filter set to [ON] in Set mode option [9 APRS] → [3 APRS FILTER] is received it will appear on the LCD.  
If [OFF] is selected, a bell will sound and the beacon is not received.
- When operating on APRS, the received audio (such as beacons and voices) on [B] band, can be muted in Set mode option [9 APRS] → [8 APRS MUTE].
- A bell sound for notifying the reception of an APRS beacon can be set in Set mode option [9 APRS] → [10 APRS RINGER].  
If this option is set to [OFF], the bell will not sound.

● **Description of Station List Characters**

This section explains the display examples for the 14 types of station characters. For details on the description screen, see the next pages listed on the table.

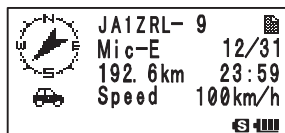




Display	Description	Page
E	EMic-E: Displayed when a beacon from a MIC encoder station is received.	13
P	Position: Displayed when a beacon from a Fixed Station (FIXED) or Moving Station (MOVING) is received.	14 to 16
p	Position: Displayed when a beacon from a Fixed Station (fixed) or Moving Station (moving) is received. (Compressed type)	17
W	Weather report: Displayed when a beacon from a weather station is received.	18
w	Weather report: Displayed when a beacon from a weather station is received. (Compressed type)	18
O	Object: Displayed when a beacon from an object station is received.	19
o	Object: Displayed when a beacon from an object station is received. (Compressed type)	19
I	Item: Displayed when a beacon from an item station is received.	19
i	Item: Displayed when a beacon from an item station is received. (Compressed type)	19
K	Killed Object/Item: Displayed when a beacon from a deleted object station or item station is received.	19
k	Killed Object/Item: Displayed when a beacon from a deleted object stations or item station is received. (Compressed type)	19
S	Status: Displayed when a beacon from a status station is received.	20
?	Other: Displayed when a beacon from an unknown station is received.	21
Emg	Displayed when a emergency signal from a Mic-E station is received.	13

**Tips**

- After turning on the power of this transceiver, if the description screen is opened before GPS information is acquired, the directional arrow and distance measure will not appear.
- If positioning cannot be acquired due to obstacles, such as buildings or tunnels, the position information of position that was last measured (directional arrow, longitude/latitude, distance measure) is displayed. Once the transceiver is moved to a position where it can acquire GPS information, it will resume displaying the accurate position.

● Explanation of the Detailed Display for Station List of E (Mic-E) and key operation



Pressing **[ENT]** and selecting  station with **[E]** in the STATION LIST will open the details screen for E (Mic-E). Though only 4 rows are displayed on screen, scrolling with  reveals the additional information rows.

 ... Scrolls through screen

Press  and then turn  ... Switches beacon station

Press  ... Moves to STATION LIST screen (See page 11).

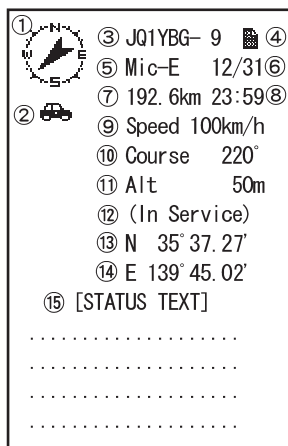
Press  ... Moves to MESSAGE EDITING SCREEN.

Press  over 1 second. ... Enters the Set mode (See page 45).

 ... Moves to RAW Data display screen (See page 25).

 ... Manual transmission of beacon (See page 26).


Screen Details



① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.

② **Symbol:** Displays the symbol of the received radio station.

③ **Call sign:** Displays the received call sign.

④ **Display Message:**  mark is displayed when a beacon with STATUS TEXT is received.

⑤ **Type Code:** Displays the type code being used by the remote transceiver (such as Mic-E, McE-Trk, McE-Msg, or model name of the transceiver).

⑥ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).


⑦ **Distance:** Displays the distance between your transceiver and the remote transceiver.

⑧ **Time:** Displays the time (HH Hours: MM Minutes) that the beacon was received.

⑨ **Speed:** Displays the moving speed of the remote transceiver.

⑩ **Direction:** Displays the moving direction of the remote transceiver.

⑪ **Altitude:** Displays the altitude of the remote transceiver.

⑫ **Position Comment:** Displays the position comment from the remote transceiver. If Emergency is received, (Emergency) is displayed on screen and a beep  is repeatedly sounded 12 times.

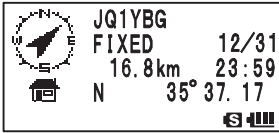
⑬ **Latitude:** The current position is displayed using north (N) or south (S) latitude (DD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).


⑭ **Longitude:** The current position is displayed using east (E) or west (S) longitude (DDD degree, MM.MM minutes, or DD degrees, MM minutes, SS seconds).


⑮ **STATUS TEXT:** Displays comment information.


## Receiving APRS® beacons

### ● Explanation of the Detailed Display for Station List of P (Position: Fixed Station) and key operation.



Pressing **[ENT]** and selecting **[P]** station with  in the STATION LIST screen will open the detail screen for P (Position).

Though only 4 rows are displayed on the screen, scrolling with  will reveal the additional rows of information.

 ... Scrolls trough screen

Press  after pressing  ... Transition of beacon station

Press  ... Moves to STATION LIST screen (See page 11).

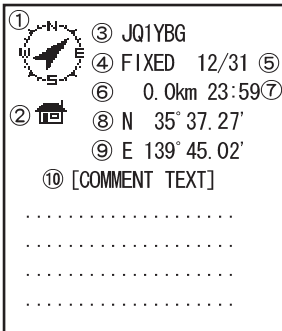
Press  ... Moves to MESSAGE EDIT screen.

Press  over 1 second... Enters the Set mode. (See page 45).

 ... Moves to RAW Data display screen (See page 25).

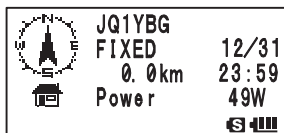
 ... Manual transmission of beacon (See page 26).

#### Screen Details

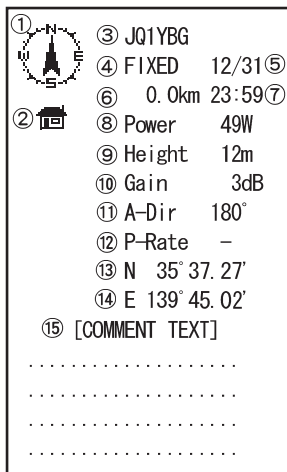



- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Symbol:** Displays the symbol of the received radio station.
- ③ **Callsign:** Displays the received call sign.
- ④ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ⑤ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑥ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑦ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑧ **Latitude:** The current position is displayed using north (N) or south (S) latitude (DD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑨ **Longitude:** The current position is displayed using east (E) or west (S) longitude (DD D degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑩ **STATUS TEXT:** Displays comment information.


● Explanation of Display details and key operations for Station List of P (Position: Fixed Station).



Screen Details



Pressing **[ENT]** and selecting **[P]** station with  in the STATION LIST will open the detail screen for P (Position). Position may contain detailed information called PHG code in some cases.

Though only 4 rows are displayed on screen, scrolling with  will reveal the additional rows of information.

 ... Scroll through screen

Press  after pressing  ... Switches beacon station

Press  ... Moves to STATION LIST screen (See page 11).

Press  ... Moves to MESSAGE EDIT screen.

Press  over 1 second... Enters the Set mode. (See page 45).

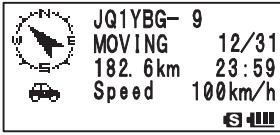
 ... Moves to RAW Data display screen (See page 25).

 ... Manual transmission of beacon (See page 26).

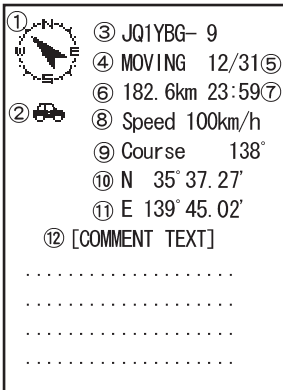
- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Symbol:** Displays the symbol of the received radio station.
- ③ **Call sign:** Displays the received call sign.
- ④ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ⑤ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑥ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑦ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑧ **Transmission Power:** Displays transmission power of the remote transceiver.
- ⑨ **Antenna ground clearance:** Displays the antenna ground clearance of the remote transceiver.
- ⑩ **Antenna gain:** Displays antenna gain of the other station.
- ⑪ **Antenna direction:** Displays the antenna direction of the remote transceiver.
- ⑫ **Transmission count:** Displays the number of transmission from the remote transceiver.
- ⑬ **Latitude:** The current position is displayed using north (N) or south (S) latitude (DD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑭ **Longitude:** The current position is displayed using east (E) or west (S) longitude (DDD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑮ **STATUS TEXT:** Displays comment information.





● Explanation of Display details and key operations for Station List of P (Position: Fixed Station).



Screen Details



Pressing **[ENT]** and selecting **[P]** station with  in the STATION LIST will open the detail screen for P (Position). If there is information related to movement (Speed, Course) in data received, it is displayed as shown below. Though only 4 rows are displayed on the screen, scrolling with  will reveal the additional rows of information.

 ... Scrolls through screen

Press  after pressing  ... Switches beacon station

Press  ... Moves to STATION LIST screen (See page 11).

Press  ... Moves to MESSAGE EDIT screen.

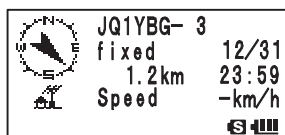
Press  over 1 second ... Enters the Set mode. (See page 45).

 ... Moves to RAW Data display screen (See page 25).

 ... Manual transmission of beacon (See page 26).

- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Symbol:** Displays the symbol of the received radio station.
- ③ **Callsign:** Displays the received call sign.
- ④ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ⑤ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑥ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑦ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑧ **Speed:** Displays the moving speed of the remote transceiver.
- ⑨ **Direction:** Displays the moving direction of the remote transceiver.
- ⑩ **Latitude:** The current position is displayed using north (N) or south (S) latitude (DD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑪ **Longitude:** The current position is displayed using east (E) or west (S) longitude (DDD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑫ **STATUS TEXT:** Displays comment information.

● Explanation of the Detailed Display and key operations for Station List of p (Position: Fixed Station).



Pressing **[ENT]** and selecting **[p]** (Position Compressed type) station with **[DIAL]** in the STATION LIST screen will open the details screen for P (Position).

Though only 4 rows are displayed on screen, scrolling with **[DIAL]** will reveal the additional rows of information.



**[DIAL]** ... Scrolls trough screen

Press **[M]** after pressing **[DIAL]** ... Switches beacon station

Press **[DISP]** ... Moves to STATION LIST screen (See page 11).

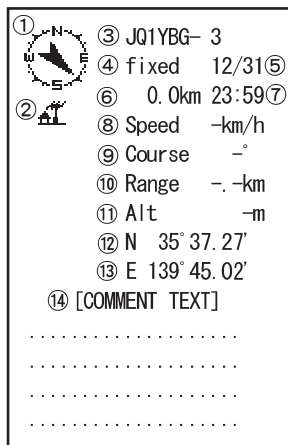
Press **[M]** ... Moves to MESSAGE EDITING SCREEN.

Press **[DISP]** over 1 second ... Enters the Set mode (See page 45).

**[BAND]** ... Moves to RAW Data display screen (See page 25).

**[9.99]** ... Manual transmission of beacon (See page 26).

**Screen Details**

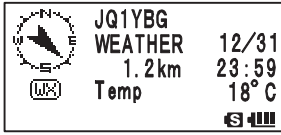




- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Symbol:** Displays the symbol of the received radio station.
- ③ **Callsign:** Displays the received call sign.
- ④ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ⑤ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑥ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑦ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑧ **Speed:** Displays the moving speed of the remote transceiver.
- ⑨ **Direction:** Displays the moving direction of the remote transceiver.
- ⑩ **Radio wave reaching range:** Displays information on the radio wave reaching range of the remote transceiver.
- ⑪ **Latitude:** The current position is displayed using north (N) or south (S) latitude (DD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑫ **Longitude:** The current position is displayed using east (E) or west (S) longitude (DDD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑬ **STATUS TEXT:** Displays comment information.


**Tip**

Compressed type beacon is a beacon sent in a format where a part of the information is compressed.

● Explanation of the Detailed Display for Station List of W (Weather report: Weather Station) and key operation.



Pressing **[ENT]** and selecting **[W]** (Weather report) or **[w]** (Weather report Compressed type) station with  in the STATION LIST screen will open the details screen for W or w (Weather report). Though only 4 rows are displayed on screen, scrolling with  shows all the information.

 ... Scrolls trough screen

Press  after pressing  ... Switches beacon station

Press  ... Moves to STATION LIST screen (See page 11).

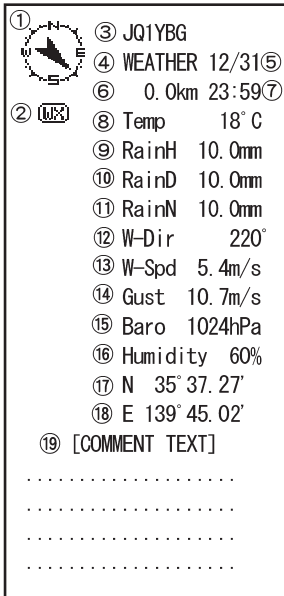
Press  ... Moves to MESSAGE EDITING SCREEN.

Press  over 1 second ... Enters the Set mode (See page 45).

 ... Moves to RAW Data display screen (See page 25).

 ... Manual transmission of beacon (See page 26).

Screen Details

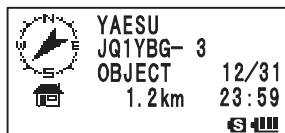


- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Symbol:** Displays the symbol of the received radio station.
- ③ **Callsign:** Displays the received call sign.
- ④ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ⑤ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑥ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑦ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑧ **Temperature:** Displays temperature information.
- ⑨ **Precipitation:** Displays information on precipitation per hour.
- ⑩ **Precipitation:** Displays information on precipitation per 24 hours.
- ⑪ **Precipitation:** Displays information on precipitation from midnight.
- ⑫ **Wind direction;** Displays information on wind direction.
- ⑬ **Wind speed:** Displays information on wind speed.
- ⑭ **Maximum wind speed:** Displays information on the maximum wind speed.
- ⑮ **Atmospheric pressure:** Displays information on atmospheric pressure.
- ⑯ **Humidity:** Displays information on humidity.
- ⑰ **Latitude:** The current position is displayed using north (N) or south (S) latitude (DD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑱ **Longitude:** The current position is displayed using east (E) or west (S) longitude (DDD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑲ **STATUS TEXT:** Displays comment information.

Tip

Compressed type beacon is a beacon sent in a format where a part of the information is compressed.

● Explanation of the Detailed Display and key operations for Station List of O (Object) or I (Item).



Pressing **[ENT]** and selecting **[O (Object)]** station or **[I (Item)]** station with **[DIAL]** in the STATION LIST screen will open the details screen for O (Object) or I (Item). Though only 4 rows are displayed on screen, scrolling with **[DIAL]** will reveal the additional rows of information.

**[DIAL]** ... Scrolls trough screen

Press **[MW]** after pressing **[DIAL]** ... Switches beacon station

Press **[SET DISP]** ... Moves to STATION LIST screen (See page 11).

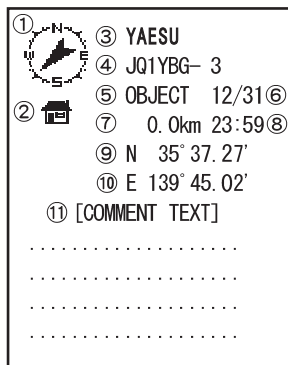
Press **[GM]** ... Moves to MESSAGE EDITING SCREEN.

Press **[SET DISP]** over 1 second ... Enters the Set mode (See page 45).

**[SCOPE BND DN BAND]** ... Moves to RAW Data display screen (See page 25).

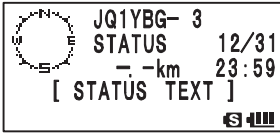
**[BCON TX- 9.99]** ... Manual transmission of beacon (See page 26).


**Screen Details**





- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Symbol:** Displays the symbol of the received radio station.
- ③ **Name:** Displays the name of the Object or Item.
- ④ **Callsign:** Displays the received call sign.
- ⑤ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ⑥ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑦ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑧ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑨ **Latitude:** The current position is displayed using north (N) or south (S) latitude (DD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑩ **Longitude:** The current position is displayed using east (E) or west (S) longitude (DDD degree, MM.MM minutes, or DD degree, MM minutes, SS seconds).
- ⑪ **STATUS TEXT:** Displays comment information.

● Explanation of the Detailed Display and key operations for Station List of S (Status).



Pressing **[ENT]** and selecting **[S (Status)]** station with  in the STATION LIST will open the details screen for S (Status).

Though only 4 rows are displayed on screen, scrolling with  shows all the information.

 ... Scrolls trough screen

Press  after pressing  ... Switches beacon station

Press  ... Moves to STATION LIST screen (See page 11).

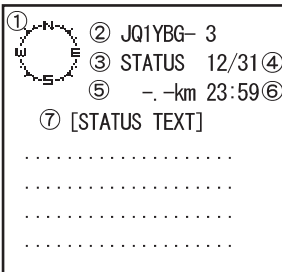
Press  ... Moves to MESSAGE EDITING SCREEN.

Press  over 1 second ... Enters the Set mode (See page 45).

 ... Moves to RAW Data display screen (See page 25).

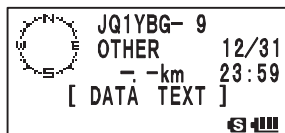
 ... Manual transmission of beacon (See page 26).

**Screen Details**

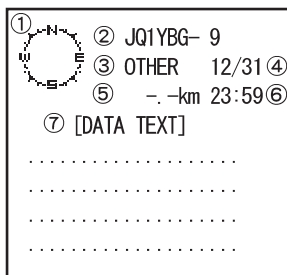


- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Callsign:** Displays the received call sign.
- ③ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ④ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑤ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑥ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑦ **STATUS TEXT:** Displays comment information.

● Explanation of the Detailed Display and key operations for Station List of ? (Other).



Screen Details



Pressing **[ENT]** and selecting **[?]** (Other) station with in the STATION LIST will open the details screen for ? (Other).

This symbol is displayed when a packet that could not be deciphered as a APRS beacon is received.

Though only 4 rows are displayed on the screen, scrolling with will reveal the additional rows of information.

... Scrolls trough screen

Press after pressing ... Switches beacon station

Press ... Moves to STATION LIST screen (See page 11).

Press ... Moves to MESSAGE EDITING SCREEN.

Press over 1 second ... Enters the Set mode (See page 45).

... Moves to RAW Data display screen (See page 25).

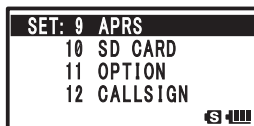
... Manual transmission of beacon (See page 26).

- ① **Compass (Direction):** Shows the direction to the remote transceiver from your transceiver.
- ② **Callsign:** Displays the received call sign.
- ③ **Remote transceiver information:** Displays information on the fixed station (FIXED).
- ④ **Date:** Displays the Time (HH Hours: MM Minute) or Date (MM Month/DD Day).
- ⑤ **Distance:** Displays the distance between your transceiver and the remote transceiver.
- ⑥ **Time:** Displays the time (HH Hours: MM Minutes) that beacon was received.
- ⑦ **DATA TEXT:** Displays the packet data that could not be deciphered as APRS beacon.

**Notification of beacons or messages with a popup screen. APRS POPUP Function**

A popup display can be set to notify the reception of APRS beacons or messages from the remote station.

- 1 Press over 1 second.  
Enters the Set mode.
- 2 Turn to select [9 APRS].
- 3 Press **[ENT]**.
- 4 Turn to select [9 APRS POPUP].
- 5 Press **[ENT]**.



## Receiving APRS® beacons

- 6 Turn  to select setting item.

For details on each item, refer to Set mode Function List (See page 50).

Mic-E: OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT

POSITION: OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT

WEATHER: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s to BND60s / BNCNT

OBJECT: OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT

ITEM: OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT

STATUS: OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT

OTHER: OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT

MY PACKET: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s to BND60s / BNCNT

MSG: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNCNT

GRP: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNCNT

BLN: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNCNT

MY MSG: OFF / BND2s to BND60s / BNCNT

DUP.BCN: OFF / BND2s to BND60s / BNCNT

DUP.MSG: OFF / BND2s to BND60s / BNCNT


ACK.REJ: OFF / BND2s to BND60s / BNCNT


OTHER MSG: OFF / BND2s ~ BND60s / BNCNT

- 7 Press .

- 8 Turn  to select a setting value.


- 9 Press .

- 10 Turn  to select setting item.

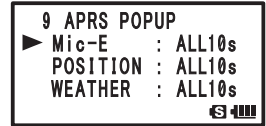
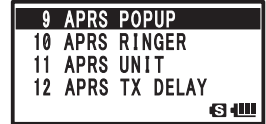
Turn  to select next setting item.

- 11 Press .

- 12 Repeat steps 6 to 11 to set remaining items.

- 13 Press .

Exits from the Set mode.



## Screen when BND2s to BND60s is selected

If a beacon or message from the remote station is received when [BND2s to BND60s] is selected for APRS POPUP, a screen like shown below is displayed.

2 alphabetic characters are displayed.



The alphabetic characters displayed next to the callsign of the remote station signifies the following meanings.

### 1<sup>st</sup> character

- N** = New: New signal
- D** = Duplicate: Signal that has already been received
- A** = ACK: ACK signal of a message (See page 43)
- R** = Reject: REJ signal of a message (See page 37)

### 2<sup>nd</sup> character

- E** = Mic-E: Beacon of a MIC encoder station.
- P** = Position: Beacon of a Fixed station (FIXED) or a Moving Station (MOVING)
- P** = Position: Beacon of a Fixed station (fixed) or a Moving Station (moving) (compressed type).
- W** = Weather report: Beacon of a weather station
- w** = Weather report: Beacon of a weather station (compressed type).
- O** = Object: Beacon of an object station
- o** = Object: Beacon of an object station (compressed type)
- I** = Item: Beacon of an item station
- i** = Item: Beacon of an item station (compressed type)
- K** = Killed Object or Item: Erased object station or item station.
- k** = Killed Object or Item: Erased object station or item station (compressed type).
- S** = Status: Beacon of a status station
- ?** = Other: Beacon that could not be deciphered




## Notification of beacon or message reception with a ringer sound. APRS RINGER Function

A ringer sound can be set to notify the reception of APRS beacons or messages from the remote stations.

- 1 Press  over 1 second.

Enters the Set mode.

- 2 Turn  to select [9 APRS].

- 3 Press .

- 4 Turn  to select [10 APRS RINGER].

- 5 Press .

- 6 Turn  to select setting item.

For details on each item, refer to Set mode Function List (See page 52).

Mic-E: ON/OFF

POSITION: ON/OFF

WEATHER: ON/OFF

OBJECT: ON/OFF

ITEM: ON/OFF

STATUS: ON/OFF

OTHER: ON/OFF

MY PACKET: ON/OFF

MSG: ON/OFF

GRP: ON/OFF

BLN: ON/OFF

MY MSG: ON/OFF

DUP.BCN: ON/OFF

DUP.MSG: ON/OFF

ACK.REJ: ON/OFF

OTHER MSG: ON/OFF


TX BCN: ON/OFF

TX MSG: ON/OFF

- 7 Press .

- 8 Turn  to select [ON] or [OFF].

- 9 Press .

- 10 Turn  to select setting item.

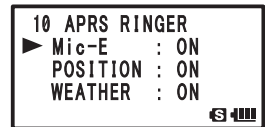
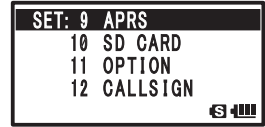
Turn  to select next setting item.

- 11 Press .

- 12 Repeat steps 6 to 11 to set remaining items.

- 13 Press .

Exits from the Set mode.



## Displaying RAW packet data

Display packet data (raw data) received from the remote station on the STATION LIST details screen.

- 1 Press and then .

The STATION LIST screen appears.

- 2 Turn to select a beacon station.

Select the beacon station to see the RAW packet data received from it.

- 3 Press .

The STATION LIST detail screen is displayed on the LCD.

- 4 Press .

RAW packet data is displayed on the LCD.

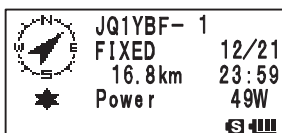
- 5 Press to scroll the screen display.

**Tip** After you have pressed , you can change the beacon being displayed by turning while is displayed on the LCD.

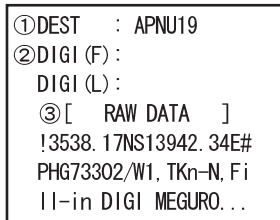
- 6 Press .

STATION LIST detail screen appears.

STATION LIST details screen



Details of the RAW Packet Data display screen



- ① **Destination Information:** Displays the destination address information of AX.25 packet.
- ② **Digipeater Information:** Displays the information of repeater station (Digipeater).
- ③ **RAW TEXT:** Displays the text of raw data



### Tip

- DIGI (First) and DIGI (Last) are not displayed because Digipeater information is not saved for transmission message. (“-” is displayed instead)
- When a 3rd Party Header Beacon (beacon from I-Gate, etc.) is received, the route information included in the 3rd Party Header Beacon is displayed, not that obtained from the AX.25 packet signal.


## Receiving APRS® beacons

### Deleting beacon stations from the list

Delete unnecessary beacon stations from the STATION LIST by selecting them on the STATION LIST screen.


- 1 Press  and then .

The STATION LIST screen appears.

- 2 Turn  to select a call sign to delete. Scroll the screen display and select a call sign to delete.

- 3 Press .

The confirmation message [DELETE?] appears on the LCD.

**Tip** Pressing a key other than  cancels the deletion.

- 4 Press .



The selected CALLSIGN is deleted from the list.

STATION LIST		
2	P JA1ZRL	01:15
3	W JQ1YBF	01:08
4	E JQ1YBG- 9	01:06

STATION LIST		
2	DELETE?	
3	W JQ1YBF	01:08
4	E JQ1YBG- 9	01:06

## Transmitting the APRS® beacon

### Manually transmitting a beacon

- 1 Press  and then .

Press  on the STATION LIST and STATION LIST Details screens.



To transmit beacons automatically, set [AUTO] or [SMART] in the next instruction, "Switching between manual and automatic transmission of beacon".

#### Tip


- If [DUP.BCN] is set to ON in [APRS] → [10 APRS RINGER], a bell will sound when your station beacon relayed by a digipeater is received.
- To use the GPS function for APRS operation, check that the Set mode option [9 APRS] → [24 MY POSITION] has been set to [GPS].  
Beacon cannot be transmitted if the GPS data cannot be received.

### Switching between manual and automatic beacon transmission

Set the APRS beacon for manual or Automatic transmission.


- 1 Press  and then .

The STATION LIST screen appears.


- 2 Press .


Pressing the  key toggles between [MANUAL], [AUTO], and [SMART].

The shortcut key for this operation is [9 APRS] → [16 BEACON TX].

Icon is off (MANUAL): APRS beacon of your station is only transmitted when  is pressed (default setting).

For transmission on the frequency screen, press  then .

 is continually lit (AUTO): APRS beacon of your station is transmitted automatically every 5 minutes.\*1

 is continually lit (SMART): APRS beacon is sent automatically using the SmartBeaconing function.\*2

Icon is off (MANUAL):

 is continually lit (AUTO):

 is continually lit (SMART):

STATION LIST		
1	E JQ1YBG-9	01:20
2	P JA1ZRL	01:15
3	W JQ1YBF	01:06

\*1: In APRS set mode option [9 APRS] → [14 BEACON INTERVAL], the interval for transmission can be set.

\*2: • For details on the SmartBeaconing function, see page 28.

• This setting can only be selected if: STATUS setting in [9 APRS] → [27 SmartBeaconing] is set between Type 1 and Type 3, and [9 APRS] → [24 MY POSITION] is set to GPS.

## Tip


In Set mode option [9 APRS] → [12 APRS TX DELAY], the data transmission delay time can be changed.

## Set the automatic transmission interval for sending a beacon


Set the time interval for automatically transmitting the APRS beacon.

1 Press  over 1 second.

Enters the Set mode.

2 Turn  to select [9 APRS].

3 Press .

4 Turn  to select [14 BEACON INTERVAL].

5 Press .

6 Turn  to select the automatic transmission interval.

Select an automatic transmit interval from the following:

30sec/1min/2min/3min/5min/10min/15min/20min/

30min/60min

**Tip** Default: 5 minutes

7 Press .

The automatic beacon transmit interval is set.




8 Press .

Exits from the Set mode.

SET: 9 APRS	
10	SD CARD
11	OPTION
12	CALLSIGN

14 BEACON INTERVAL	
15	BEACON STATS TXT
16	BEACON TX
17	COM PORT SETTING

### Tip

- When the APRS beacon transmit is changed to [AUTO], the timer for the automatic beacon transmit interval is reset, and the count for the automatic beacon interval begins. When the set time is reached, the initial beacon will be transmitted.
- Even in automatic (AUTO) beacon transmit, transmission of the beacon can be forced by pressing  then  while operating with the frequency screen displayed. (Press  while the STATION LIST screen or the STATION LIST Details screen is displayed to force a beacon transmission).  
A forced beacon transmission will reset the automatic transmit timer.
- If the set time is reached during automatic beacon transmit, but the squelch is active, the beacon transmission is withheld.  
When the squelch is deactivated, the beacon is transmitted.

## Setting SmartBeaconing™

The SmartBeaconing function efficiently transmits/beacons the position information of your station, based on data obtained from the GPS unit.

This transceiver can support automatic beacon information with the SmartBeaconing function.

The SmartBeaconing function on this transceiver has 3 different settings (TYPE 1 to TYPE 3) and has preset initial values postulated to be used in the following operations.

TYPE1: High speed movement, such as by vehicle.

TYPE2: Medium speed movement, such as by bicycle.






TYPE3: Low speed movement, such as by walking.

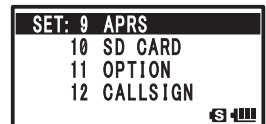
TYPE 2 and TYPE 3 settings (particularly TYPE 3) transmit many beacons in a short period of time, even if movement is comparatively slow.


Because of this, using these setting during high speed movement, such as by vehicle, causes many beacons to be transmitted, and may cause signal congestion on the frequency.

Be sure to use TYPE1 settings when in high-speed movement.

If SmartBeaconing is to be operated at different timings, parameters of settings TYPE1 to TYPE3 can be changed. When changing parameters, be sure to adjust parameters of SmartBeaconing and DIGI PATH settings for appropriate beacon transmission intervals to avoid signal congestion on the APRS frequency.

- 1 Press  over 1 second.  
Enters the Set mode.
- 2 Turn  to select [9 APRS].
- 3 Press .
- 4 Turn  to select [27 SmartBeaconing].
- 5 Press .



6 Press **ENT** again and select TYPE by turning .

Select a TYPE from the following:

OFF: Deactivates the SmartBeaconing function

TYPE1: Settings recommended for high-speed movement such as by vehicle.

TYPE2: Settings recommended for medium speed movement such as by bicycle.



TYPE3: Settings recommended for low speed movement such as walking.

7 Press .

The selected TYPE is set.

8 Press .

Exits from the Set mode.

9 Press  and then .

The STATION LIST screen appears.

10 Press  twice.

 is lit on the top-left of the LCD.

This the shortcut to [9 APRS] → [16 BEACON TX].

SmartBeaconing is set when  is lit on the top-left of the LCD.



### Tip

- If SMART is selected in [9 APRS] → [16 BEACON TX], settings for BEACON INTERVAL are ignored.
- This function can only be selected if: STATUS setting in [9 APRS] → [27 SmartBeaconing] is set between Type 1 and Type 3, and [9 APRS] → [24 MY POSITION] is set to GPS.


\* SmartBeaconing is provided by HamHUD Nichetronix, LLC.

## Status Text Register

5 different status texts of up to 60 characters can be registered.

1 Press  over 1 second.


Enters the Set mode.

2 Turn  to select [9 APRS].


3 Press **ENT**.

4 Turn  to select [15 BEACON STATS TXT].

5 Press **ENT**.

6 Turn  to select [S.TXT].

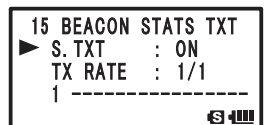
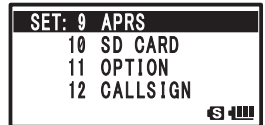
7 Press **ENT**.

8 Turn  to select ON/OFF.

Turn status text ON or OFF.

9 Press .

10 Turn  to select [TX RATE].



## Transmitting the APRS® beacon

11 Press **ENT**.

TX RATE is for setting how frequently status texts are sent when APRS beacons are transmitted.

12 Turn **DIAL** to select [TX RATE].

Select between 1/1 (every time) to 1/8 (once every 8 times)

13 Press **SET DISP**.

14 Turn **DIAL** to select the number for status text.

15 Press **ENT**.

16 Turn **DIAL** to select the number for registering status text.

If there is already a text registered to that number, the first 16 characters of that text will be displayed.

17 Press **ENT**.

The text editing screen appears. Press **SET DISP** to go back to the previous screen.

18 Enter the characters using keypad keys.

Enter STATUS TEXT using keypad keys, referring to the following table.

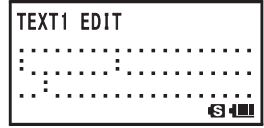
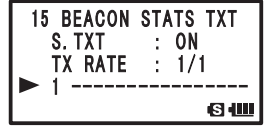
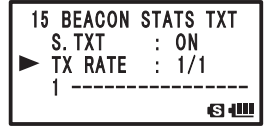
Numeric key	A, 0 (Alphanumeric)
<b>TX PWR</b> 1	1
<b>SCAN</b> 2 ABC	abc2ABC
<b>P. RCVR</b> 3 DEF	def3DEF
<b>HOME</b> 4 GHI	ghi4GHI
<b>REV</b> 5 JKL	jkl5JKL
<b>AF DUAL</b> 6 MNO	mno6MNO
<b>LOG</b> 7 PQRS	pqr7PQRS
<b>8 TUV</b>	tuv8TUV
<b>BCON TX</b> 9 WXYZ	wxyz9WXYZ
<b>S.LIST-APRS</b> 0	0

- Tip**
- When **DEL** is pressed, a character is deleted and the cursor moves to the left.
  - Pressing **ENT** moves the cursor to the right.
  - Single Characters can also be entered by turning **DIAL**.
  - To delete all characters to the right of the cursor, Select [CLR] by pressing **MONO/DUAL (A/B)**, then **DW (V/M)**.
  - To insert a single character into the text. select [INSERT] by pressing **MONO/DUAL (A/B)**, then **DW (V/M)**.
  - To delete all characters, select [CLRALL] by pressing **MONO/DUAL (A/B)**, then **DW (V/M)**.
  - To delete the character where the cursor is positioned, select [DELETE] by pressing **MONO/DUAL (A/B)**, then **DW (V/M)**.

19 Repeat steps 17 and 18 to enter the STATUS TEXT.

20 Press **SET DISP**.

The characters are entered.



21 Press .

Exits from the Set mode.

The status text registered last is transmitted.

When entering the status text, a : (colon) appears on the 21<sup>st</sup> character, the 29 character, and the 43rd character. If text exceeding the position a : (colon) appears, some transceivers may not be able to display the entire message upon reception. Try to enter a text shorter than where : (colons) appear if possible.




## Select a Position Comment

Select the position comment (standard message) incorporated into beacons of your station.

1 Press  over 1 second.


Enters the Set mode.

2 Turn  to select [9 APRS].

3 Press .

4 Turn  to select [26 POSITION COMMENT].



5 Press .

6 Turn  to select a position comment.

Select a position comment from the following.

Off Duty/En Route/In Service/Returning/Committed/  
Special/Priority/Custom 0 to Custom 6/EMERGENCY!

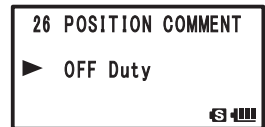
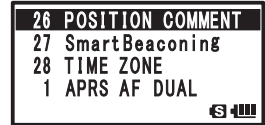
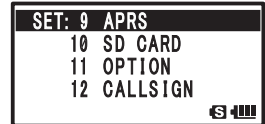
**Remark** Default: Off Duty

- Tip**
- Only when [EMERGENCY!] is selected in step 6, a confirmation message: [OK?] appears when  is pressed and a bell will sound three times upon confirmation.
  - To cancel the position comment, turn  and select a different comment.

7 Press  to register a position comment.

8 Press .

Exits from the Set mode.



### Caution

Unless there is a serious emergency such as an accident or natural disaster, do not select [EMERGENCY!].



## Setting the Digipter Route

A station that relays transmissions such as beacons is called a digipeater. In order to use a digipeater, register the callsign or ALIAS of the digipeater to your transceiver.

This transceiver is preset to [WIDE1-1] (relay setting for 1 position) and [WIDE1-1, WIDE2-1] (relay setting for 2 positions).

In [WIDE1-1, WIDE2-1], a transmission is relayed to the first digipeater station specified as WIDE1-1, then to the second digipeater station specified as WIDE2-1.

In this setting, transmission is relayed by digipeaters in 2 positions.

As of January 2013, digipeater stations used by APRS are recommended to be operated using \*New-N Paradigm.

The initial values set to this transceiver are those premised on the NEW-N Paradigm method for digipeater station operation.

In order to use other methods of relaying messages, select between P4 and P8 and enter the CALLSIGN or ALIAS of the relay station (enter these by following the steps below).


\* For information on the New-N Paradigm method, see the website below for details. <http://aprs.org/fix14439.html> (as of January 2013)

### Caution

If too many relay nodes are set, a beacon sent by one station is repeatedly relayed and can cause communications channel congestion.  
Try to operate DIGI PATH without changing settings unless necessary.

- 1 Press  over 1 second.

Enters the Set mode.

- 2 Turn  to select [9 APRS].

- 3 Press .

- 4 Turn  to select [18 DIGI PATH].

- 5 Press .

- 6 Turn  to select [DIGI PATH].

Select a DIGI PATH from between P1 to P8.


P1 (OFF), P2 (WIDE1-1) and P3 (1: WIDE1-1/2: WIDE2-1) are fixed values.

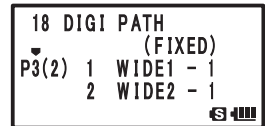
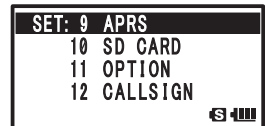
Relay methods can be entered into P4 to P8.


For setting P1 to P3, go to step 12. For setting P4 to P8, go to step 7.



- 7 Press .

The cursor moves to the next item.











Pressing  moves the cursor back to the previous position.





- 8 Turn  to select the address.  
 Select address (1 or 2).  
 Only in P8, up to 8 addresses can be set.

- 9 Press .
- The cursor moves to the next item.  
 Pressing  moves the cursor back to the previous item.

- 10 Enter the CALLSIGN using keypad keys.  
 Enter a CALLSIGN using keypad keys referring to the following table.

Numeric key	A, 0 (Alphanumeric)
 1	1
 2ABC	ABC2
 3DEF	DEF3
 4GHI	GHI4
 5JKL	JKL5
 6MNO	MNO6
 7PQRS	PQRS7
 8TUV	TUV8
 9WXYZ	WXYZ9
 0	0


- Tip** • Pressing  deletes a character and moves the cursor to the left.  
 • Pressing  moves the cursor to the right.

- 11 Repeat steps 9 to 10 and enter characters (CALLSIGN), and enter SSID by turning



- Tip** To enter the following address

Repeat steps 5 through 11 and enter the following ADDRESS.



- 12 Press  to set the Digipeater Route.


- 13 Press .

Exits from the Set mode.

# APRS message screen and key operation

## Description of APRS message screen and key operation

Pressing , then  twice in the frequency display screen opens the APRS MESSAGE LIST screen.






Pressing  toggles between the APRS STATION LIST screen and APRS MESSAGE LIST screen.

On the APRS MESSAGE LIST screen, up to 60 sent and received messages can be stored to Memory, and displayed.

The newest message appears at the top of the list.

① **Number:** The number of received or transmitted message is displayed.

② **Reception/Transmission:** An icon like the following is displayed during reception or transmission.

-  ◀ Received message (Unread)
-  ◀ Received message (Read)
-  #▶ Transmitted Message (ACK Received)
-  .▶ Transmitted Message (ACK Not Received)
-  4 to ◻▶ Transmitted Message (Transmission Incomplete)



\* This value represents the remaining number of transmissions

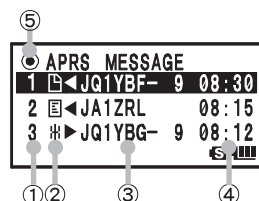
③ **Callsign:** Transmitted and received CALLSIGNS are displayed.

④ **Time or date:** Time (HH Hours: MM Minute) or Date (MM Month/DD Day) that message was transmitted or received is displayed.

⑤ **Beacon Automatic/Manual Reception Icon:**

If icon does not appear, the beacon is manually transmitted.

If  icon appears, the beacon is automatically transmitted. If  icon is displayed, the beacon is automatically transmitted with SmartBeaconing.



 ... **Scroll Screen**

 ... **Move cursor to the top of APRS MESSAGE LIST.**

 ... **Delete selected beacon station on the LCD (See page 26).**


 ... **Go to MESSAGE Reception/Transmission Details screen (See page 37).**

 ... **Go to MESSAGE EDITING screen (See page 40).**

 ... **Go to Frequency Display Screen**

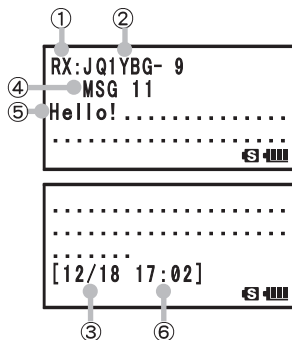
Press  over 1 second ... **Set mode (See page 45).**

## Reception/Transmission Details Screen and Key Operation

On the APRS MESSAGE LIST screen, selecting a station to view details by turning  and pressing **ENT** opens the reception/transmission details screen.

On the Reception/Transmission Details screen, details of received and transmitted messages on the APRS MESSAGE LIST screen are displayed.

- ① **RX/TX:** [RX] shows details of received messages, and [TX] shows details of transmitted messages.
- ② **Callsign:** Transmitted and received CALLSIGNS are displayed.
- ③ **Date of Reception/Transmission:** The date that message was transmitted or received is displayed.
- ④ **Message Number:** The number given to a received message by the other station, or the number added when a message edited by your station is displayed.  
When using bulletin or group messaging, [GRP: (Group)] or [BLN: (Number/Bulletin Name)] is displayed.
- ⑤ **Message:** The content of the received message is displayed.
- ⑥ **Time of Reception/Transmission:** Time (HH Hours: MM Minute) or Date (MM Month/DD Day) of when message was received or transmitted is displayed.



 ... **Scroll Screen**

Press  after pressing  ... **Switches between messages.**

 ... **Go to APRS MESSAGE SCREEN (See page 37).**

 ... **Go to MESSAGE EDITING screen (See page 40).**

Press and hold  for over 1 second ... **Set mode (See page 45).**

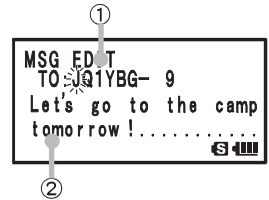
 ... **Go to RAW Data display screen (See page 25).**

## Message Editing Screen and Key Operation

Pressing **[QW]** on the APRS MESSAGE LIST screen or Reception/Transmission screen opens the Message Edit Screen.

Received or transmitted messages can be edited and transmitted on the message editing screen.

- ① **Callsign:** The CALLSIGN of the destination is displayed.
- ② **Message:** Up to 67 characters can be entered into a message for transmission.



**MONO/DUAL**  
**[A/B]** ... Select fixed text

**[KEY PAD]** ... Enter characters

**[ENT]** ... Move cursor to the right

**[←]** ... Move cursor to the left

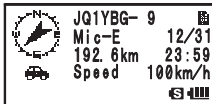
**[SET]** **[DISP]** ... Go to Frequency Display Screen

Press **[SET]** **[DISP]** over 1 second (See page 45).

Pressing **[QW]** in the following screens will switch to the Message Editing screen and allow for respective operation.



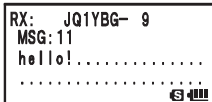
→ Resume editing from information saved to editing buffer.



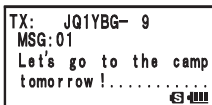
→ Opens the message edit screen copying only the CALLSIGN.



→ Resume editing from information saved to editing buffer.



→ Opens the message editing screen copying the CALLSIGN and message. (Reply Function)





→ Opens the message edit screen copying the CALLSIGN and message (Re-editing function).


### Tip






Content on the editing screen is saved to the editing buffer until ALL CLEAR is executed, or the power of the transceiver is turned off.

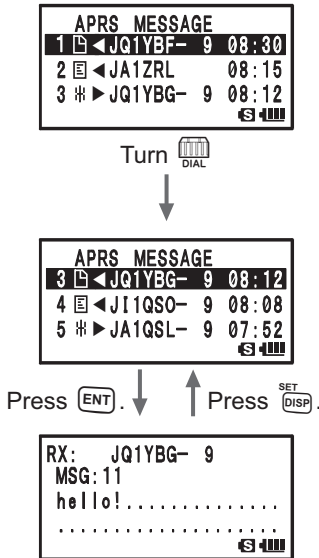
## Receiving Messages

Pressing , then  twice in the frequency display screen, opens the APRS MESSAGE LIST screen.




Pressing the  key toggles between STATION LIST screen and APRS MESSAGE LIST screen.

When a message is received, a popup screen appears with a bell sound () and strobe (white LED) lighting, then the following screen appears.


- 1 Turn  to select the received message.  
Turn  to scroll the screen up or down and select the received message.
- 2 Press  to open the reception details screen and check the message.  
**Tip** Press  to open the message editing screen.
- 3 Press  to return to the APRS MESSAGE LIST screen.



### Tip

- If a group/bulletin message is received, a bell will sound () and the CALLSIGN, as shown on the right screen, appears.
- If message ACK is received, a bell will sound () and [AM>(CALLSIGN)] appears on screen.
- If message REJ (Reject) is received, a bell will sound () and [RM>(CALLSIGN)] appears on screen.
- The strobe (white LED) can be changed in settings of Set mode option [9 APRS] → [5 APRS MSG FLASH].
- The display for ACK/REJ can be change in Set mode option [9 APRS] → [9 APRS POPUP].

RX: JQ1YBG- 9  
GRP: ALL  
hello!.....  
.....



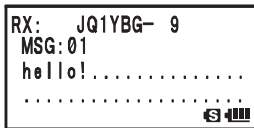
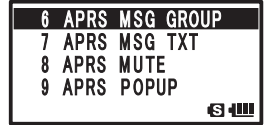
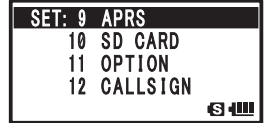
## Receive message filter settings

A group filter can be set for receiving messages or bulletin messages from a specified group (such as ALL, CQ, QST, or YAESU).

- 1 Press over 1 second.  
Enters the Set mode.
  - 2 Turn to select [9 APRS].
  - 3 Press .
  - 4 Turn to select [6 APRS MSG GROUP].
  - 5 Press .
  - 6 Turn to set group filter.  
When using a group code, set to [G1 ALL], [G2 CQ], [G3 QST], [G4 YAESU], or [G5 (arbitrary)].  
When using bulletin, set between [B1] to [B3].
  - 7 Press .
  - 8 Enter the characters using keypad keys.
  - 9 Press .
- The cursor moves to the next character position.
- 10 Repeat steps 8 and 9 to enter characters.  
Up to 9 characters can be entered.
  - 11 Press .
  - 12 Press .

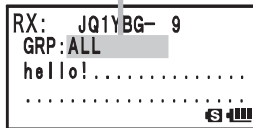
Exits from the Set mode.

When a message from a group or bulletin is received, a screen, like the following appears.



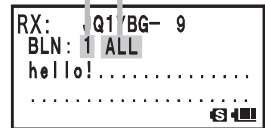
Message addressed to self screen

Display of the group name such as ALL, CQ, QST, or YAESU



Group message reception screen

Bulletin Number  
Display bulletin name









Bulletin reception screen

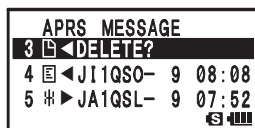
## Tip

- Turning [9 APRS] → [1 APRS AF DUAL] to ON in Set mode options prevents radio broadcast reception and radio sound being disrupted, even while APRS is being received on B-band and APRS beacons or messages are received.  
Received beacon information and APRS messages can be checked by switching to the APRS screen.
- The strobe (white LED) will flash when a message (MSG), group (GRP), or bulletin (BLN) is received if Set mode option [9 APRS] → [5 APRS MSG FLASH] is set.
- The received audio (such as beacons and voices) on [B] band while operating on APRS, can be muted by turning Set mode option [9 APRS] → [8 APRS MUTE] to ON.
- The display method and the time when an APRS BEACON is received can be set in Set mode option [9 APRS] → [9 APRS POPUP].
- A bell sound will notify the reception of an APRS self addressed message, group message, bulletin message, if Set mode option [9 APRS] → [10 APRS RINGER] is set to ON. If it is set to OFF, the bell will not sound but instead a notification will appear on the LCD.
- Self addressed transmissions with only a different SSID can also be received.  
However, ACK data response is only performed when all characters including the SSID are matching.

## Deleting messages from the list

Unneeded messages on the APRS MESSAGE screen can be deleted.

- 1 Press  and then  twice.  
The APRS MESSAGE LIST screen appears.
- 2 Turn  to select a CALLSIGN.  
Select the message to delete.
- 3 Press .  
[DELETE?] appears on the LCD.  
**Tip** To cancel deletion, press any key other than .
- 4 Press  to delete the message.














# Transmitting an APRS® Message

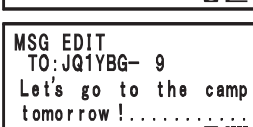
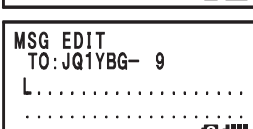
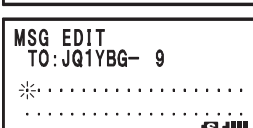
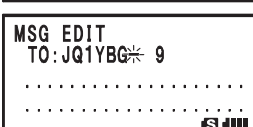
## Message creation and transmission

There are two methods for creating messages

- (1) Individually enter each character.
- (2) Create a message using fixed text












### ● Individually enter each character.

- 1 Press  and then  twice on the frequency display screen.  
Enters APRS MESSAGE LIST screen
- 2 Press .  
Enters APRS MESSAGE Editing screen  
If there are messages that were previously created or edited, these messages appear.  
To edit characters, press  and individually delete each character.
- 3 Enter the CALLSIGN using keypad keys.  
Input the destination with the numeric key.
- 4 Press .  
The cursor moves to the next character position.
- 5 Repeat steps 3 and 4 to enter the CALLSIGN.  
Up to 6 characters can be entered for the callsign.
- 6 Press .  
The cursor moves to 7<sup>th</sup> character position.
- 7 Turn  to set SSID.  
Enter the SSID of 1 to 15.  
The SSID does not need to be entered if it is unnecessary.
- 8 Press .  
The cursor moves to the next character enter column.
- 9 Enter the characters using keypad keys.
- 10 Press .  
The cursor moves to the next character position.



**11** Repeat steps 9 and 10 to enter characters.

Up to 67 characters can be entered.

- Tip**
- When  is pressed, a character is deleted and the cursor moves to left.
  - Pressing  moves the cursor to the right.
  - Characters can also be entered by turning .
  - By selecting [CLR] by pressing , then , all characters to the right of the cursor can be deleted.
  - By selecting [INSERT] by pressing , then , 1 character can be inserted into the text.
  - By selecting [CLRALL] by pressing , then , all characters can be deleted.
  - By selecting [DELETE] by pressing , then , all characters to the right of the cursor can be deleted.

**12** Press  over 1 second.

The message is transmitted and LCD returns to the frequency display screen.

**Tip**


Data transmission time can be changed by setting the Set mode option [9 APRS] → [12 APRS TX DELAY].

● **Create a message using fixed text**

**1** Pressing , then  twice in the frequency display screen opens the APRS MESSAGE LIST screen.

**2** Press .

Enters APRS MESSAGE Edit screen.

If there are messages that were previously created or edited, these messages appear. To edit characters, press  and individually delete each character.

**3** Use keypad keys to enter the destination CALLSIGN to transmit a message.

**4** Press .

The cursor moves to the next column.

**5** Repeat steps 3 and 4 to enter the CALLSIGN.

Up to 6 characters can be entered for the callsign.

**6** Press .

The cursor moves to the 7<sup>th</sup> character position.

**7** Turn  to enter SSID.

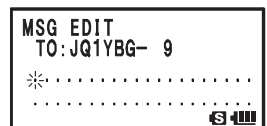
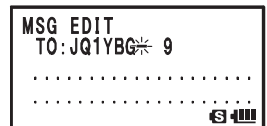
Enter the SSID of 1 to 15.

The SSID does not need to be entered if it is unnecessary.

**8** Press .

The cursor moves to the next character enter column.












**9** Press  to select for fixed texts (MSG TXT1 to MSG TXT8) already registered.



## Transmitting an APRS® Message

10 Press .

Fixed texts can be selected by repeating steps 9 to 10.

- Tip**
- Characters can be added or deleted from the selected fixed text. In addition, characters can be added to the beginning and end of a fixed text.
  - When  is pressed, a character is deleted and the cursor moves to left.
  - Pressing  moves the cursor to the right.
  - Characters can also be entered by turning .
  - By selecting [CLR] by pressing , then , all characters to the right of the cursor can be deleted.
  - By selecting [INSERT] by pressing , then , a single character can be inserted into the text.
  - By selecting [CLRALL] by pressing , then , all characters can be deleted.
  - By selecting [DELETE] by pressing , then , all characters to the right of the cursor can be deleted.

11 Press  over 1 second.

The message is sent and LCD returns to the APRS MESSAGE LIST screen.


### Using the Response Function

Stations that sent a APRS Messages can be responded to.

1 Turn  to select the other station.

Select the station to respond to on the APRS MESSAGE LIST screen.

2 Press .

3 Press .

Enters the APRS Editing screen

4 Enter characters.

Enter characters to the response message by following the steps in [Individually Enter Characters] (See page 40) or [Create Messages using Fixed Texts] (See page 41)


5 Press .

Message is sent to the station you are responding to.




### ● Registering fixed texts

8 types of fixed text of up to 16 characters can be registered to this transceiver.

1 Press  over 1 second.


Enters the Set mode.

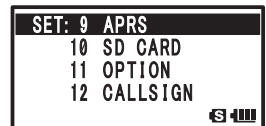
2 Turn  to select [9 APRS].

3 Press .

4 Turn  to select [7 APRS MSG TXT].

5 Press .

6 Turn  to select the number to register the fixed message.



7 Press **ENT**.

The cursor moves to the 1<sup>st</sup> character position.

8 Enter the characters using keypad keys.

9 Press **ENT**.

The cursor moves to the next character position.

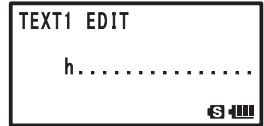
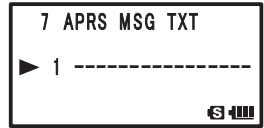
**Tip** When **MW** is pressed, a character is deleted and the cursor moves to left.

10 Repeat steps 8 and 9 to enter characters.

Up to 16 characters can be entered.

11 Press **PTT**.

Registers the fixed text and exits from the Set mode.



List Table of Enterable Characters to Messages																											
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U							
V	W	X	Y	Z	[ \ ]	^ _ `	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r			
s	t	u	v	w	x	y	z	}	(Space)	!	”	#	\$	%	&	'	( )	*	+	,	-	.	/	0	1	2	3
4	5	6	7	8	9	:	;	<	=	>	?	@															

**Tip**

When entering characters, press **S**<sup>LIST-APRS</sup>**0** to enter [0], [SPACE], [-], [%], [/], [?], [!], [,], [:], or [#].

● **Message reception verification data (ACK)**

When transmitting messages to another station, ACK (message reception verification data) indicating the message was received is automatically sent back in response.

When ACK data is received from the other station, a reception confirmation alarm sounds, and the transmission process is completed.

If ACK data is not sent from the other station after 1 minute, the same message is retransmitted to the other station.

If ACK data is not sent from the other station after 5 attempts, the message is displayed to be TX OUT. The remaining transmission attempts of ACK appear on the LCD as shown below.

The remaining number of attempts can also be checked by pressing **ENT** and switching to the transmission details screen.

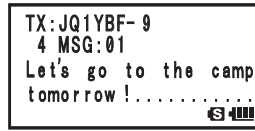
### Display example for remaining attempts

Display of remaining transmission attempts.



**APRS MESSAGE screen**  
(example of when 4 attempts remain)

→  
Press (ENT).



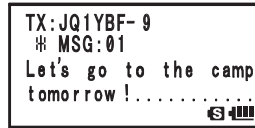
**Transmission Details screen**  
(example of when 4 attempts remain)

"\*" is displayed when ACK is being received.



**APRS MESSAGE Screen**  
(Display of when ACK is being received)

→  
Press (ENT).



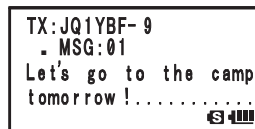
**Transmission Details Screen**  
(Display of when ACK is being received)

"." displayed when TXT OUT occurs.



**APRS MESSAGE Screen**  
(Display of when ACK is being received)

→  
Press (ENT).



**Transmission Details Screen**  
(Display of when TXT OUT occurs)

#### Tip

On the APRS MESSAGE LIST screen, up to 60 messages are displayed. However, if the number exceeds 60 messages, the oldest message will be automatically deleted. Because of this, if a new message is received, a message that has not been retransmitted 5 times may be deleted.

## APRS Set Mode List

Set mode item No./Item	Description of function	Selectable Items (Bold letters: Default)	Reference page
1 APRS AF DUAL	ON/OFF setting of the sound when AF Dual Reception is enabled while APRS function is active.	ON / <b>OFF</b>	49
2 APRS DESTINATION	Display of Model Code	APY01D (cannot be edited)	49
3 APRS FILTER	Selecting filter function	Mic-E: <b>ON</b> / OFF POSITION: <b>ON</b> / OFF WEATHER: <b>ON</b> / OFF OBJECT: <b>ON</b> / OFF ITEM: <b>ON</b> / OFF STATUS: <b>ON</b> / OFF OTHER: <b>OFF</b> / ON ALTNET: <b>OFF</b> / ON	49
4 APRS MODEM	Setting the APRS baud rate	<b>OFF</b> / 1200bps / 9600bps	49
5 APRS MSG FLASH	Setting for the strobes flash when there is an incoming message.	MSG: OFF/2- <b>4</b> -10 (2sec interval) / 20sec / 30sec / 60sec / CONTINUOUS / EVERY 2s-10s (1sec interval) / EVERY 10s-EVERY 50s (10sec interval) / EVERY 1m-EVERY 10m (1min interval) GRP: OFF/2- <b>4</b> -10 (2sec interval) / 20sec / 30sec / 60sec / CONTINUOUS BLN: OFF/2- <b>4</b> -10 (2sec interval) / 20sec / 30sec / 60sec / CONTINUOUS	50
6 APRS MSG GROUP	Group filter message receive settings.	G1 ALL***** / G2 CQ***** / G3 QST***** / G4 YAESU***** / G5 (arbitrary) / B1 BLN***** (arbitrary) / B2 BLN* (arbitrary) / B3 BLN* (arbitrary)	50
7 APRS MSG TXT	Entering fixed text characters.	8 types of pp to 16 characters can be registered.	51
8 APRS MUTE	Turn on/off the B-band AF muting function when APRS is set.	ON / <b>OFF</b>	51
9 APRS POPUP	Setting the type and time of messages to display popup.	Mic-E: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> POSITION: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b>	51

## APRS Set Mode List

Set mode item No./Item	Description of function	Selectable Items (Bold letters: Default)	Reference page
9 APRS POPUP	Setting the type and time of messages to display popup.	WEATHER: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> OBJECT: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> ITEM: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> STATUS: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> OTHER: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> MY PACKET: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> MSG: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> GRP: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> BLN: OFF / ALL2s ~ ALL60s / ALLCNT / BND2s ~ BND60s / BNDCNT <b>ALL10s</b> MY MSG: OFF / BND2s ~ BND60s / <b>BND10s</b> DUP.BCN: OFF / BND2s ~ BND60s / <b>BND10s</b> DUP.MSG: OFF / BND2s ~ BND60s / <b>BND10s</b> ACK.REJ: OFF / BND2s ~ BND60s / <b>BND10s</b> OTHER MSG: OFF / BND2s ~ BND60s / <b>BND10s</b>	51

Set mode item No./Item	Description of function	Selectable Items (Bold letters: Default)	Reference page
10 APRS RINGER	Settings the bell sound when beacon or message is received.	Mic-E: <b>ON</b> / OFF POSITION: <b>ON</b> / OFF WEATHER: <b>ON</b> / OFF OBJECT: <b>ON</b> / OFF ITEM: <b>ON</b> / OFF STATUS: <b>ON</b> / OFF OTHER: <b>ON</b> / OFF MY PACKET: <b>ON</b> / OFF MSG: <b>ON</b> / OFF GRP: <b>ON</b> / OFF BLN: <b>ON</b> / OFF MY MSG: <b>ON</b> / OFF DUP.BCN: <b>ON</b> / OFF DUP.MSG: <b>ON</b> / OFF ACK.REJ: <b>ON</b> / OFF OTHER MSG: <b>ON</b> / OFF TX BCN: <b>ON</b> / OFF TX MSG: <b>ON</b> / OFF	54
11 APRS UNIT	Setting units of the APRS display.	Position: <b>MM.MM'</b> / MM'SS' Distance: km / <b>mile</b> Speed: km/h / knot / <b>mph</b> Altitude: m / <b>ft</b> Temp: °C / ° <b>F</b> Rain: mm / <b>inch</b> Wind: m/s / <b>mph</b>	56
12 APRS TX DELAY	Setting the data sending delay time.	100ms / 150ms / 200ms / 250ms / <b>300ms</b> / 400ms / 500ms / 750ms / 1000ms	56
13 BEACON INFO	Setting the transmitting beacon information	AMBIGUITY: <b>OFF</b> / 1 dig ~ 4dig SPD / CSE: <b>ON</b> / OFF ALTITUDE: <b>ON</b> / OFF	57
14 BEACON INTERVAL	Setting the beacon automatic sending interval.	30sec / 1min / 2min / 3min / <b>5min</b> / 10min / 15min / 20min / 30min / 60min	57
15 BEACON STATS TXT	Input setting the status text	S.TXT: <b>ON</b> / <b>OFF</b> TX RATE: <b>1/1</b> ~ 1/8 1 to 5 CH	58
16 BEACON TX	Setting the automatic or manual sending of beacon	AUTO / <b>MANUAL</b> / SMART	58
17 COM PORT SETTING	Setting the COM port.	STATUS: <b>ON</b> / <b>OFF</b> SPEED: 4800 / <b>9600</b> / 19200 / 38400 INPUT: <b>OFF</b> / GPS OUTPUT: <b>OFF</b> / GPS / WAY.P WAYPOINT: <b>NMEA9</b> / NMEA6 / NMEA7 / NMEA8	59



## APRS Set Mode List

Set mode item No./Item	Description of function	Selectable Items (Bold letters: Default)	Reference page
17 COM PORT SETTING	Setting the COM port.	Mic-E: <b>ON</b> / OFF POSIT: <b>ON</b> / OFF WEATHER: <b>ON</b> / OFF OBJECT: <b>ON</b> / OFF ITEM: <b>ON</b> / OFF	59
18 DIGI PATH	Setting the digipeater route.	P1 OFF P2 1 WIDE1-1 <b>P3 1 WIDE1-1 / 2 WIDE2-1</b> P4 1 ..... / 2..... P5 1 ..... / 2..... P6 1 ..... / 2..... P7 1 ..... / 2..... P8 1 ..... to 8.....	61
19 GPS DATUM	Setting the datum used by GPS function	<b>WGS-84</b> / Tokyo Mean / Tokyo Japan / Tokyo Korea / Tokyo Okinawa	61
20 GPS POWER	Setting on/off of the GPS function.	<b>GPS ON</b> / GPS OFF	62
21 GPS TIME SET	Setting on/off of the GPS time and date automatic acquisition function.	<b>AUTO</b> / MANUAL	62
22 GPS UNIT	Setting units of the GPS display.	Position: <b>.MMM</b> " / 'SS" Speed: km/h / Knot / <b>mph</b> Altitude: m / <b>ft</b>	62
23 CALLSIGN (APRS)	Setting the callsign of your station.	*****-NN *: CALLSIGN NN: SSID (number)	62
24 MY POSITION	Setting the position for your station.	<b>GPS</b> / Lat N * * * * * / LON* * * * * P1 to P10	63
25 MY SYMBOL	Setting the symbol for your station.	45 Icon	64
26 POSITION COMMENT	Setting the position comment function.	<b>Off Duty</b> / En Route / In Service / Returning / Committed / Special / Priority / Custom 0 to 6 / EMERGENCY!	64
27 SmartBeaconing	Setting the smart beaconing function.	STATUS: <b>OFF</b> / TYPE1 / TYPE2 / TYPE3 LOW SPD: 2mph ~ 30mph HIGH SPD: 31mph ~ 90mph SLOW RATE: 1min to 100min FAST RATE: 10sec to 180sec TURN ANGL: 5° to 90° TURN SLOP: 1 to 255 TURN TIME: 5sec to 180sec	64
28 TIME ZONE	Setting the time zone.	UTC ±13.0 H / <b>UTC+0:00</b>	66

# APRS Set mode function list

## ● 1 APRS AF DUAL

### Sound setting for AF Dual Function

**Setting Item:** ON / OFF

**Default:** OFF

**Explanation:**

ON/OFF setting to enable the AF Dual function while APRS function is active.

## ● 2 APRS DESTINATION

### Model Code Display

**Setting Item:** [APY01D]

**Default:** [APY01D]

**Explanation:**

Displays the model code. This setting cannot be changed.

## ● 3 APRS FILTER

### Filter function setting

**Setting Item:** Mic-E / POSITION / WEATHER / OBJECT / ITEM / STATUS / OTHER /  
ALTNET

**Default:** Mic-E: ON / POSITION: ON  
WEATHER: ON / OBJECT: ON  
ITEM: ON / STATUS: ON  
OTHER: OFF  
ALTNET: OFF

**Explanation:**

For setting FILTER for obtaining various beacon types.

ON:           Obtains beacons  
OFF:          Does not obtain beacons

Mic-E:        Displays the obtained MIC-Encoder beacons  
POSITION:    Displays the obtained Position of beacons  
WEATHER:     Displays the obtained Weather beacons  
OBJECT:      Displays the obtained Object of beacons  
ITEM:         Displays the obtained item of beacons  
STATUS:      Displays the obtained Status of beacons  
OTHER:       Displays the obtained packets other than those used in APRS.  
ALTNET:      Displays the obtained packets specified by Destination Address in Alternate  
              Nets.

## ● 4 APRS MODEM

### APRS baud rate settings

**Setting Item:** OFF / 1200bps / 9600bps

**Default:** OFF

**Explanation:**

OFF: Turn APRS function [OFF].  
 1200bps: Sets APRS baud rate to 1200bps.  
 9600bps: Sets APRS baud rate to 9600bps.

**● 5 APRS MSG FLASH**

**Setting for strobe flash when there is an incoming message.**

**Setting Item:** MSG: OFF/2-4-10 (2sec interval) / 20sec / 30sec / 60sec /  
 CONTINUOUS / EVERY 2s-10s (1sec interval) / EVERY  
 10s-EVERY 50s (10sec interval) / EVERY 1m-EVERY 10m (1min  
 interval)  
 GRP: OFF / 2-4-10 (2sec interval) / 20sec / 30sec / 60sec /  
 CONTINUOUS  
 BLN: OFF / 2-4-10 (2sec interval) / 20sec / 30sec / 60sec /  
 CONTINUOUS

**Default:** MSG: 4sec. / GRP: 4sec. / BLN: 4sec

**Explanation:**

The strobe (white LED) flashes depending on settings in each of the following: [MSG] when a message is received, [GRP] when a group message is received, [BLN] when a bulletin message is received.

Strobe (white LED) flashes continuously when COUNTINUOUS is selected.

If EVERY is selected in [MSG], the strobe (white LED) flashes as below:

2sec - 5sec	1 flash for the set time interval
6sec - 9sec	2 flashes for the set time interval
10sec - 50sec	3 flashes for the set time interval
1min - 5min	4 flashes for the set time interval
6min - 10min	5 flashes for the set time interval

The strobe (white LED) will not flash if [OFF] is selected.

If EVERY is selected for [MSG] and strobe (white LED) is flashing, and a GRP (group) or BLN (bulletin) message is received, the group or bulletin strobe will temporarily flash, then return to the message strobe once BLN reception of the group or bulletin message is complete.

**● 6 APRS MSG GROUP**

**Group filter setting for APRS MSG GROUP reception messages**

**Setting Items:** A filter can be set for receiving messages with a specified group code (ALL or CQ).

- G1: ALL\*\*\*\*\*
- G2: CQ\*\*\*\*\*
- G3: QST\*\*\*\*\*
- G4: YAESU\*\*\*\*
- G5:

B1: BLN\*\*\*\*\*

B2: BLN\*

B3: BLN\*

**Default:** G1: ALL\*\*\*\*\*

G2: CQ\*\*\*\*\*

G3: QST\*\*\*\*\*

G4: YAESU\*\*\*\*

G5:

B1: BLN\*\*\*\*\*

B2: BLN\*

B3: BLN\*

**Explanation:**

A filter can be set to receive messages with a specified group code (ALL or CQ) (ALL, CQ, QST, and YAESU are selected in default settings).

“\*”: Acts as a wild card matching any character received.

● **7 APRS MSG TXT**

**Entering fixed text characters.**

**Explanation:**

8 types of up to 16 character fixed text can be created, and pasted to messages on the message edit screen.

● **8 APRS MUTE**

**ON/OFF of AF MUTE for the band set for APRS.**

**Setting Item:** ON / OFF

**Default:** OFF

**Explanation:**

If Set mode option [8 APRS] → [3 APRS MODE] is set to 1200bps or 9600bps, received sounds can be muted on the B-band when it is set for APRS.

If this is set to [OFF], received sounds can be heard in accordance to the volume settings of the APRS band (B-band).

● 9 APRS POP-UP

Setting the popup function for APRS reception

Setting item:	Mic-E:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	POSITION:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	WEATHER:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	OBJECT:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	ITEM:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	STATUS:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	OTHER:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	MY PACKET:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	MSG:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	GRP:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	BLN:	OFF / ALL2s to ALL60s / ALLCNT / BND2s to BND60s / BNCNT
	MY MSG:	OFF / BND2s to BND60s
	DUP.BCN:	OFF / BND2s to BND60s
	DUP.MSG:	OFF / BND2s to BND60s
	ACK.REJ:	OFF / BND2s to BND60s
	OTHER MSG:	OFF / BND2s to BND60s

**[Explanation on Parameters]**

- ALL2s to ALL60s: Sets the display time of a popup for 2 to 60 seconds.
- ALLCNT: Popup continues to be displayed until a key is operated.
- BND2s to BND60s: Content is displayed in 2 alphabetic characters on the band display section on the screen for 2 to 60 seconds. (See page 23).
- BNCNT: Content is displayed in 2 alphabetic characters on the band display section on the screen until a key is operated (See page 23).

<b>Default:</b>	Mic-E:	ALL10s
	POSITION:	ALL10s
	WEATHER:	ALL10s

OBJECT: ALL10s  
 STATUS: ALL10s  
 OTHER: ALL10s  
 MY PACKET: ALL10s  
 MSG: ALL10s  
 GRP: ALL10s  
 BLN: ALL10s  
 MY MSG: BND10s  
 DUP.BCN: BND10s  
 DUP.MSG: BND10s  
 ACK.REJ: BND10s  
 OTHER MSG: BND10s

**Explanation:**

When an APRS BEACON is received, the content is shown in a POPUP.

This setting is for the method and time the POPUP is displayed.

- Mic-E: Setting for the time a POPUP is displayed when a Mic-Encoder beacon is received.
- POSITION: Setting for the time a POPUP is displayed when a position beacon is received.
- WEATHER: Setting for the time a POPUP is displayed when a weather beacon is received.
- OBJECT: Setting for the time a POPUP is displayed when a object beacon is received.
- ITEM: Setting for the time a POPUP is displayed when a item beacon is received.
- STATUS: Setting for the time a POPUP is displayed when a status beacon is received.
- OTHER: Setting for the time a POPUP is displayed when a beacon other than what is used by APRS is received.
- MY PACKET: Setting for the time a POPUP is displayed when a self transmitted beacon (relay wave) is received.
- MSG: Setting for the time a POPUP is displayed when a new message is received.
- GRP: Setting for the time a POPUP is displayed when a group message is received.
- BLN: Setting for the time a POPUP is displayed when a bulletin message is received.
- MY MSG: Setting for the time a POPUP is displayed when a self transmitted message (relay wave) is received.
- DUP BGN: Setting for the time a POPUP is displayed when a overlapping beacon is received.
- DUP MSG: Setting for the time a POPUP is displayed when a message that has already been received, has been received.

## APRS Set mode function list

ACK REJ: Setting for the time a POPUP is displayed when response data of a message sent by your station is received.

OTHER MSG: Setting for the time a POPUP is displayed when a message addressed to a different destination is received.

### ● 10 APRS RINGER

**Setting the bell sound when a message or beacon is transmitted/received.**

**Setting item:** Mic-E: ON / OFF  
POSITION: ON / OFF  
WEATHER: ON / OFF  
OBJECT: ON / OFF  
ITEM: ON / OFF  
STATUS: ON / OFF  
OTHER: ON / OFF  
MY PACKET: ON / OFF  
MSG: ON / OFF  
GRP: ON / OFF  
BLN: ON / OFF  
MY MSG: ON / OFF  
DUP.BCN: ON / OFF  
DUP.MSG: ON / OFF  
ACK.REJ: ON / OFF  
OTHER MSG: ON / OFF  
TX BCN: ON / OFF  
TX MSG: ON / OFF

**Default:** Mic-E: ON  
POSITION: ON  
WEATHER: ON  
OBJECT: ON  
ITEM: ON  
STATUS: ON  
OTHER: ON  
MY PACKET: ON  
MSG: ON  
GRP: ON  
BLN: ON  
MY MSG: ON  
DUP.BCN: ON  
DUP.MSG: ON  
ACK.REJ: ON  
OTHER MSG: ON  
TX BCN: ON  
TX MSG: ON

**Explanation:**

Set the bell sound for transmission/reception of APRS beacons and messages and the conditions for when it rings.

- Mic-E: Setting for the sound of the bell that rings when a Mic-Encoder beacon is received.
- POSITION: Setting for the sound of the bell that rings when a position beacon is received.
- WEATHER: Setting for the sound of the bell that rings when a weather beacon is received.
- OBJECT: Setting for the sound of the bell that rings when a object beacon is received.
- ITEM: Setting for the sound of the bell that rings when an item beacon is received.
- STATUS: Setting for the sound of the bell that rings when a status beacon is received.
- OTHER: Setting for the sound of the bell that rings when a beacon other than what is used by APRS is received.
- MY PACKET: Setting for the sound of the bell that rings when a when a self transmitted beacon (relay wave) is received.
- MSG: Setting for the sound of the bell that rings when a new message is received.
- GRP: Setting for the sound of the bell that rings when a group message is received.
- BLN: Setting for the sound of the bell that rings when a bulletin message is received.
- MY MSG: Setting for the sound of the bell that rings when a self transmitted message (relay wave) is received.
- DUP BCN: Setting for the sound of the bell that rings when a overlapping beacon is received.
- DUP MSG: Setting for the sound of the bell that rings when a message that has already has been received is received again.
- ACK REJ: Setting for the sound of the bell that rings when response data (ACK, REJ) of a message sent by your station is received.
- OTHER MSG: Setting for the sound of the bell that rings when a message addressed to another destination is received.
- TX BCN: Setting for the sound of the bell that rings when a beacon is being sent from your station.
- TX MSG: Setting for the sound of the bell that rings when a message is being sent from your station.



● 11 APRS UNIT

**Unit setting for APRS display.**

**Setting item:** Position: .mm' / 'ss"  
 Distance: km / mile  
 Speed: km/h / mph / knot  
 Altitude: m / ft  
 Temp: °C / °F  
 Rain: mm / inch  
 Wind: m/s / mph

**Default:** Position: .mm'  
 Distance: mile  
 Speed: mph  
 Altitude: ft  
 Temp: °F  
 Rain: inch  
 Wind: mph

**Explanation:**

Set the measurement unit for Latitude/Longitude (Position), Distance, Speed, Altitude, Temperature (Temp), Precipitation (Rain), and Wind Speed (Wind).

Position: Unit display of minute of Longitude/Latitude (DD° MM.MM') can be changed. MM' is displayed in 1/100 minute and SS" in seconds.

- Distance: Unit can be set to [km] or [mile].
- Speed: Unit can be set to [km] or [mile].
- Altitude: Unit can be set to [m] or [feet].
- Temp: Units can be set to [°C] or [°F].
- Rain: Unit can be set to [mm] or [inch].
- Wind: Unit can be set to [m/s] or [mph].

● 12 APRS TXDELAY

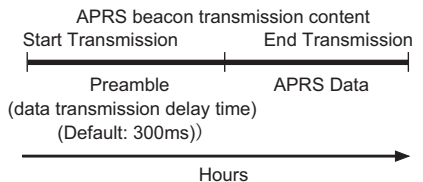
**Set the data sending delay time.**

**Setting item:** 100ms / 150ms / 200ms / 250ms / 300ms / 400ms / 500ms / 750ms / 1000ms

**Default:** 300ms

**Explanation:**

The preamble (data transmission delay time), shown right, for when transmitting APRS data can be set.



## ● 13 BEACON INFO

### Setting the transmit beacon information

**Setting item:** AMBIGUITY: OFF / 1digi / 2digi / 3digi / 4digi

SPD/CSE: ON / OFF

ALTITUDE: ON / OFF

**Default:** AMBIGUITY: OFF

SPD/CSE: ON

ALTITUDE: ON

### Explanation:

**AMBIGUITY:** This function is for masking lower denominations of your position (longitude, latitude) to disambiguate the position of your station. Setting this function to [OFF] disables disambiguation and transmits the precise position information of your station.

OFF	1digi	2digi	3digi	4digi
35°38.17'	35°38.1□	35°38.□□	35°3□.□□	35°□□.□□
139°42.33'	139°42.3□	139°42.□□	139°4□.□□	139°□□.□□

**SPD/CSE:** (SPEED/COURSE) If function is set to [ON], speed and directional information is transmitted. If this function is set to [OFF], speed and directional information is not be transmitted.

**ALTITUDE:** If this function is set to [ON], altitude information is transmitted. If this function is set to [OFF], altitude information is not transmitted.

## ● 14 BEACON INTERVAL

### Automatic transmission interval settings for beacon

**Setting item:** 30sec / 1min / 2min / 3min / 5min / 10min / 15min / 20min / 30min / 60min

**Default:** 5 minutes

### Explanation:

Set the automatic transmission interval for transmission of APRS beacons.

- Set the Set mode option [9 APRS] → [16 BEACON TX] to [AUTO]. The timer for transmission is reset when the automatic transmission interval is set. From this point, the count for interval time begins, and the initial beacon is automatically transmitted when the specified time is reached.
- If squelch is active when the interval for automatic beacon transmission is reached, the transmission is stopped. The beacon is transmitted when squelch is deactivated.
- If SMART is selected in [9 APRS] → [16 BEACON TX], the setting for BEACON INTERVAL is ignored.

● 15 BEACON STATS TXT

Entering status text

Setting Item: S.TXT: ON / OFF

TX RATE: 1/1 1/2 1/3 1/4 1/5 1/6 1/7 1/8

1: (Not entered)

2: (Not entered)

3: (Not entered)

4: (Not entered)

5: (Not entered)

\* Up to 60 characters can be entered for status text into TEXT1 to TEXT5.

Default: S.TXT: OFF

TX RATE: 1/1

1 to 5: Text not entered.

Explanation:

S.TXT: Select the status text to send when transmitting a beacon.

Selecting OFF transmits the beacon without a status text.

TX RATE: Set how frequent a status text is sent with a APRS beacon. Select from 1/1: every time, 1/2: 2 once every 2 transmissions, to up to 1/8: once every 8 transmissions, a status text is sent with a beacon.

● 16 BEACON TX


Set the beacon automatic transmission interval.



Setting Item: MANUAL / ●AUTO / ○SMART


Default: MANUAL

Explanation:

Set the method BEACON is automatically transmitted.

The transmission method can also be change by pressing  on the STATION LIST screen.

MANUAL: An APRS BEACON is transmitted by pressing  then .

Press  on the STATION LIST and STATION LIST Details screens to transmit an APRS BEACON.

●AUTO: An APRS BEACON of your station is transmitted automatically according to BEACON INTERVAL settings.

○SMART: A BEACON is automatically transmitted using the SmartBeaconing™ function.

This setting can only be selected if: STATUS setting in [9 APRS] → [27 SmartBeaconing] is set between Type 1 and Type 3, and [9 APRS] → [24 MY POSITION] is set to GPS.

## ● 17 COM PORT SETTING

### COM Port setting

**Setting Item:** STATUS: OFF / ON  
 SPEED: 4800 / 9600 / 19200 / 38400  
 INPUT: OFF / GPS  
 OUTPUT: OFF / GPS / WAY.P  
 WAYPOINT: NMEA9 / NMEA6 / NMEA7 / NMEA8  
 Mic-E: ON / OFF  
 POSIT: ON / OFF  
 WEATHER: ON / OFF  
 OBJECT: ON / OFF  
 ITEM: ON / OFF

**Default:** STATUS: OFF  
 SPEED: 9600  
 INPUT: OFF  
 OUTPUT: OFF  
 WAYPOINT: NMEA9  
 Mic-E: ON  
 POSIT: ON  
 WEATHER: ON  
 OBJECT: ON  
 ITEM: ON

### Explanation:

STATUS: OFF: Set to OFF when data terminal is not in use.

ON: Set to ON when using data terminal.

Various setting items are added when ON is selected.

SPEED: Set the communication speed for the data terminal.

INPUT: OFF: Deactivate the input function of the data terminal (negate function).

GPS: GPS data is obtained by connecting a commercially sold external GPS device instead of the internal GPS function in this transceiver.

In this setting, information obtained from the internal GPS function is negated.

**Tip** • If an external GPS device is connected to the data terminal, the time display on the GPS screen appears as shown below.

aa (hour): bb (minute)

• The GPS function in this transceiver uses data in \$GPRMC in NMEA-0183 format and \$GPGGA data.

In order to use an external GPS device, the device must be able to output data of this type.

• When using an external GPS device, setting the Set mode option [9 APRS] → [20 GPS POWER] to OFF will deactivate the internal GPS function and reduce battery consumption.

## APRS Set mode function list

- OUTPUT:** OFF: Deactivate the input function of the data terminal (negate function).
- GPS:** Output GPS data (\$GPRMC in NMEA-0183 format or \$GPGLL data) obtained by this transceiver.
- WAY.P:** Output position information from APRS PACKET received from a BEACON received from another station as WAYPOINT data (\$GPWPL in NMEA-0183 format).
- WAYPOINT:** Set the number of digits for CALLSIGN information of APRS BEACON stations, attached to various data, when WAYPOINT is selected for OUTPUT.
- NMEA6:** CALLSIGN is restricted to 6 digits to the right (example: if JQ1YBG-14 is received, CALLSIGN information appears as [YBG-14]).
- NMEA7:** CALLSIGN is restricted to 7 digits to the right (example: if JQ1YBG-14 is received, CALLSIGN information appears as [1YBG-14]).
- NMEA8:** CALLSIGN is restricted to 8 digits to the right (example: if JQ1YBG-14 is received, CALLSIGN information appears as [Q1YBG-14]).
- NMEA9:** CALLSIGN is restricted to 9 digits to the right (example: if JQ1YBG-14 is received, CALLSIGN information appears as [JQ1YBG-14]).
- Mic-E:** ON: Mic-E BEACON information (BEACON displayed as [E] on LIST) is output with WAPOINT data.
- OFF: Mic-E BEACON information is not output when set to OFF.
- POSIT:** ON: POSITION BEACON information (BEACON displayed as [P] or [p] on LIST) is output with WAPOINT data.
- OFF: POSITION BEACON information is not output when set to OFF.
- WEATHER:** ON: WEATHER BEACON information (BEACON displayed as [W] or [w] on LIST) is output with WAPOINT data.
- OFF: WEATHER BEACON information is not output when set to OFF.
- Tip** • Because a Positionless type WEATHER BEACON does not have position information, it is not output with WAYPOINT DATA.
- OBJECT:** ON: OBJECT BEACON information (BEACON displayed as [O] or [o] on LIST) is output with WAPOINT data.
- OFF: POSITION BEACON information is not output when set to OFF.
- ITEM:** ON: ITEM BEACON information (BEACON displayed as [I] or [i] on LIST) is output with WAPOINT data.
- OFF: ITEM BEACON information is not output when set to OFF.

**Tip**

- If you are to connect the transceiver with a PC using SCU-18, the following settings must be applied on the PC.  
 DATA SPEED: 9600bps (the SPEED setting of this transceiver and a PC must correspond).  
 DATA LENGTH: 8bit  
 Parity Bit: None  
 Stop Bit: 1bit

**● 18 DIGI PATH****Setting the digipeater route.**

**Setting item:** P1 OFF  
 P2: WIDE1-1 (fixed value)  
 P3: WIDE1-1, WIDE2-1 (fixed value)  
 P4 to P7: Up to 2 addresses can be entered arbitrarily.  
 P8: Up to 8 addresses can be entered arbitrarily.

**Default:** P3 FWIDE1-1 AWIDE2-1 (fixed value)

**Explanation:**

A station that relays packets, such as beacons, are called a digipeater.

Select a CALLSIGN or ALIAS of the digipeater you would like to use.

In this transceiver, [WIDE1-1/WIDE2-1] (setting for 2 relay stations) is set beforehand.

In [WIDE1-1, WIDE2-1], a transmission is relayed to the first digipeater station specified as WIDE1-1, then to the second digipeater station specified as WIDE2-1.

As of January 2013, digipeater stations used by APRS are recommended to be operated using \*New- Paradigm.

The initial values set to this transceiver are those premised for digipeater stations operating with New- Paradigm, due to most digipeater stations supporting this method. In order to use other relay methods, select one of P4 to P8 and enter the CALLSIGN or ALIAS.

\* For information on the New-Paradigm method, refer to the following websites for details.

<http://aprs.org/fix14439.html>

**● 19 GPS DATUM****Select DATUM**

**Setting Item:** WGS-84 / Tokyo Mean / Tokyo Japan / Tokyo Korea / Tokyo Okinawa

**Default:** WGS-84

**Explanation:** Because APRS uses the DATUM of WGS-88, this setting is not changed under normal circumstances.

● **20 GPS POWER**

**ON/OFF setting for the GPS function.**

**Setting Item:** ON / OFF

**Default:** ON

**Explanation:** Turn the GPS function ON or OFF.

● **21 GPS TIME SET**

**ON/OFF of the GPS time and date automatic acquisition function.**

**Setting Item:** AUTO / MANUAL

**Default:** AUTO

**Explanation:**

AUTO: Time data for the internal clock is automatically obtained from the GPS function.

MANUAL: GPS time data is not used, and time set manually to the internal clock of this transceiver is prioritized.

● **22 GPS UNIT**

**Unit setting for the GPS display.**

**Setting item:**

Position: .MMM' / 'ss"

Speed: km/h / knot / mph

Altitude: m / ft

**Default:** Position: MMM'

Speed: mph

Altitude: ft

**Explanation:**

Set the measurement unit for Altitude, Speed, Longitude and Latitude (Position).

Position: Unit for Longitude/Latitude can be changed.

MMM is 1/000 minute format. If MMM is SS, unit appear as minute-second format.

Speed: Unit can be set to [km/h], [mph], or [knot].

Altitude: Unit can be set to [m] or [feet].

● **23 CALLSIGN (APRS)**

**Specify the CALLSIGN of your station.**

**Explanation:**

Register the CALLSIGN of your station which is needed for APRS communication.

APRS data cannot be transmitted if a CALLSIGN for your station is not registered.

Be sure to register a CALLSIGN.

When a CALLSIGN is registered to your station, it is displayed on the LCD when the power of this transceiver is turned on.

Register a CALLSIGN as shown below.

\*\*\*\*\* – NN

\*: CALLSIGN (Up to 6 characters)

NN: Number (a number between 1 to 15, or no SSID.)

Entering [-7] after the CALLSIGN is recommended in standard mobile use.

## ● 24 MY POSITION

### Setting the station position.

**Setting Item:** GPS / Lat / Lon / P1 to P10

**Default:** GPS

### Explanation:

Set whether position information for your station is obtained via GPS, or manually entered.


GPS: Acquire the position of your station automatically via GPS.

Lat/Lon: Manually set the position of your station.


P1 to P10: Position information of radio stations, acquired via GPS, can be saved in 10 memories (P1 to P10).

Registered position information can be transmitted as data for the current position of your station with the APRS BEACON.


1 Obtain the position information via GPS.

2 Press  over 1 second.

Enters the Set mode.

3 Turn  to select [9 APRS].

4 Press .

5 Turn  to select [24 MY POSITION].

6 Press .

7 Select a memory channel from P1 to P10, to register the position information.

8 Press .

The position information is registered to the selected memory channel.

**In standard operation of APRS, the position of your station is automatically acquired via GPS.**




**Other than when a GPS antenna unit is connected to your station, be sure to have the setting as [GPS].**



● 25 MY SYMBOL

**Symbol setting for your station**

**Setting Item:** Symbol

**Default:** ICON 1: Human/Person ()

ICON 2: Bicycle ()

ICON 3: Car ()

USER: Yaesu Radios ()

**Explanation:** Set the symbol for your station to transmit.

Select your symbol from 45 types.

● 26 POSITION COMMENT

**Set up the position comment function.**

**Setting Item:** Off Duty / En Route / In Service / Returning / Committed / Special / Priority / Custom 0 / Custom 1 / Custom 2 / Custom 3 / Custom 4 / Custom 5 / Custom 6 / Emergency!

**Default:** Off Duty

**Explanation:**

Select the position comment (standard message) incorporated into beacons of your station.



**Unless there is a serious emergency, such as an accident or natural disaster, do not select [EMERGENCY!].**

● 27 SmartBeaconing

**Settings for SmartBeaconing**

**Setting Item:** STATUS: OFF/TYPER1/TYPER2/TYPER3

LOW SPD: 2 to 30

HIGH SPD: 6 to 90

SLOW RATE: 1min to 100min

FAST RATE: 10sec to 180sec

TURN ANGL: 5° to 90°

TURN SLOP: 1 to 255


TURN TIME: 5sec to 180sec

**Default:** STATUS: OFF

STATUS	TYPE1	TYPE2	TYPE3
LOW SPD	5mph	3mph	2mph
HIGH SPD	70mph	30mph	12mph
SLOW RATE	30min	30min	30min
FAST RATE	120sec	120sec	120sec
TURN ANGL	28°	28°	28°
TURN SLOP	26	11	7
TURN TIME	30sec	30sec	30sec

**Explanation:**

The SmartBeaconing function is a function for efficiently transmitting beacons of position information of your station, based on data obtained from the GPS unit.

Set STATUS to one of TYPE1 to TYPE3, set [9 APRS] → [24 MY POSITION] to [GPS], and [9 APRS] → [16 BEACON TX] to [SMART] (can also be set by pressing  twice on the STATION LIST screen) to activate the operation of the SmartBeaconing function. If “O” appears on the top-left corner of the STATION LIST screen, SmartBeaconing™ is in operation.

STATUS: SmartBeaconing™ only operates when STATUS is set to TYPE1, TYPE2, or TYPE3.

Set STATUS to OFF to deactivate SmartBeacon™.

The SmartBeaconing function on this transceiver has 3 different settings (TYPE 1 to TYPE 3) and has preset initial values postulated to be used in the following operation.

TYPE1: High speed movement, such as by vehicle.

TYPE2: Medium speed movement, such as by bicycle.

TYPE3: Low speed movement, such as by walking.

TYPE 2 and TYPE 3 settings (particularly TYPE 3) transmits many beacons in a short period of time even if in comparatively slow movement.

Because of this, using these setting during high speed movement, such as by vehicle, causes many beacons being transmitted and may cause a frequency jam.

Be sure to have settings on TYPE1 when in high speed movement.

LOW SPD: If speed is lower than which is set, BEACONS are transmitted in time intervals set in [SLOW RATE].

The units for speed can be set in Set mode option [9 APRS] → [11 APRS UNIT].

HIGH SPD: If speed is higher than which is set, BEACONS are transmitted in time intervals set in [FAST RATE].

The units for speed can be set in Set mode option [9 APRS] → [11 APRS UNIT].

SLOW RATE: BEACON transmission time interval when speed decreases below the [LOW SPD] setting.

FAST RATE: BEACON transmission time interval when speed increases above the [HIGH SPD] setting.

TURN ANGL: Set the minimal value of changes in angle when the direction of movement changes.

TURN SLOP: Set the coefficient for automatically altering the angle that judges changes in the direction of movement according to speed.

The higher the coefficient value setting, the greater the judgment angle is when moving at slow speeds.

1 to 255 (X10)°/SPEED

(If the real number for units of rotating tilt is set to 1/10, this is the same as the unit setting used in HamHUD Nichetronix, LLC series transceivers.)

**TURN TIME:** Set the time limit until the next BEACON can be transmitted, after a BEACON is transmitted upon detection of a change in time (Variable Rate Beacons) or direction (Corner Pedding).

### Caution

- If SmartBeaconing™ is to be operated at different timings, the parameters of settings TYPE1 to TYPE3 can be changed.  
When changing parameters, be sure to adjust parameters of SmartBeaconing and DIGI PATH settings for appropriate beacon transmission intervals to avoid communications channel congestion.

### ● 28 TIME ZONE

**Set the time zone.**

**Setting Item:** ± 13.0 hours

**Default:** UTC+0:00 hours

**Explanation:**

The time zone can be set in units of 30 minutes.

Time data from the GPS function is transmitted from Coordinated Universal Time (UTC).

Because time in Japan is 9 hours ahead of UTC, +9 hours is set beforehand.

When using this transceiver in regions other than Japan, modify settings according to the time difference from UTC to suit the country or region you are in.

***YAESU***  
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