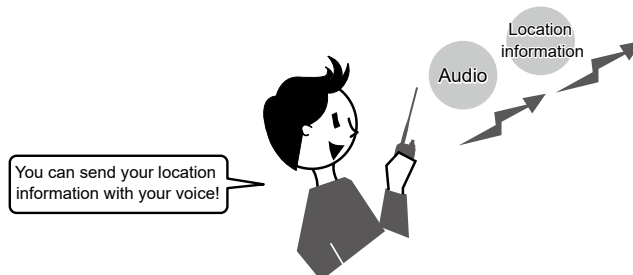


This guide uses the ID-52A/E PLUS as an example to explain what you need to know before operating D-PRS. For instructions on operating D-PRS, refer to the “Advanced Guide” (p. 4).

Transmitting Location Information

In D-STAR's digital audio mode (DV mode), you can transmit your location information simultaneously with audio by utilizing the low-speed data channel.

There are 2 major GPS transmission modes for sending location information, D-PRS and NMEA.



D-PRS data

◆D-PRS

D-STAR Packet Reporting System (D-PRS) is a mode that simultaneously sends position data received from the internal GPS receiver, using the slow-speed data packet space, along with voice audio in the DV mode.

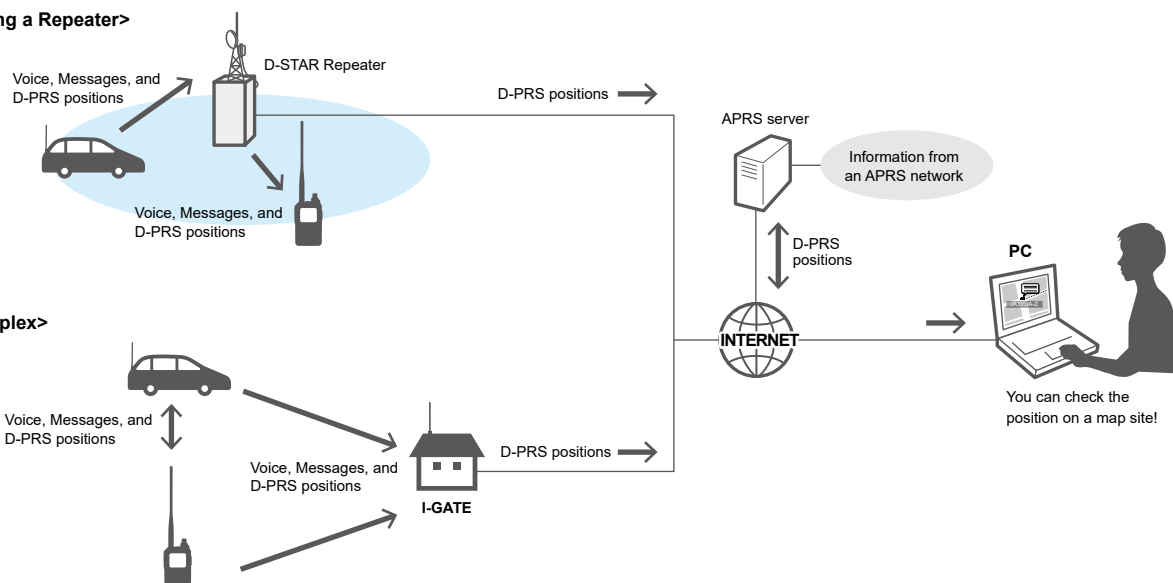
In the Analog mode, you can transmit or receive only voice audio or data at one time. However, a D-PRS capable radio can transmit or receive message data or GPS position data simultaneously when voice is being transmitted or received. An I-GATE is required to send position data to the Automatic Packet Reporting System (APRS) server.

NOTE:

- If “GPS select” is set to “Manual,” the manually entered position data in “Manual Position” is changed to the D-PRS data format to transmit.
([MENU] > GPS > GPS Set > **GPS Select**)
- Note that if “GPS Auto TX” is set to any setting other than “OFF,” it is transmitted according to the set time.
([MENU] > GPS > **GPS Auto TX**)

The image of D-PRS

<Using a Repeater>



D-PRS Capabilities

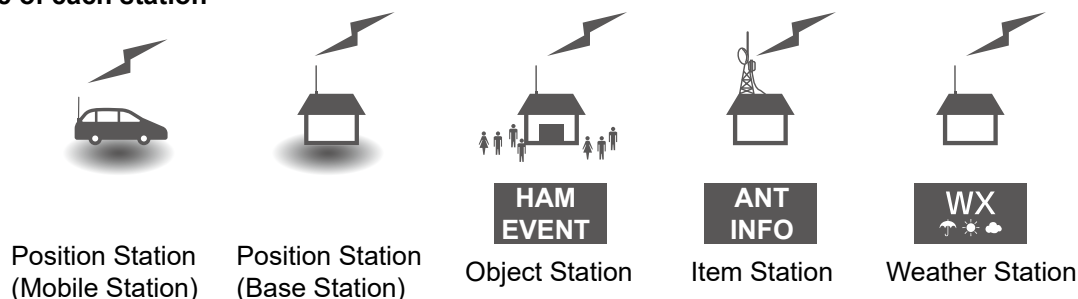
With D-PRS, you can transmit as a Position (Mobile/Base), Object, Item, or Weather Station. In addition to location information, D-PRS can transmit object, item, and weather information. Mobile station can transmit current position, direction of travel, and speed. Object station can transmit object data such as ham event locations and other real-time global information. Weather stations can transmit temperature, humidity, wind speed, and other weather data, as well as typhoon or earthquake reports.

All transmitted information can be viewed at any time on the APRS map site: <https://aprs.fi/>

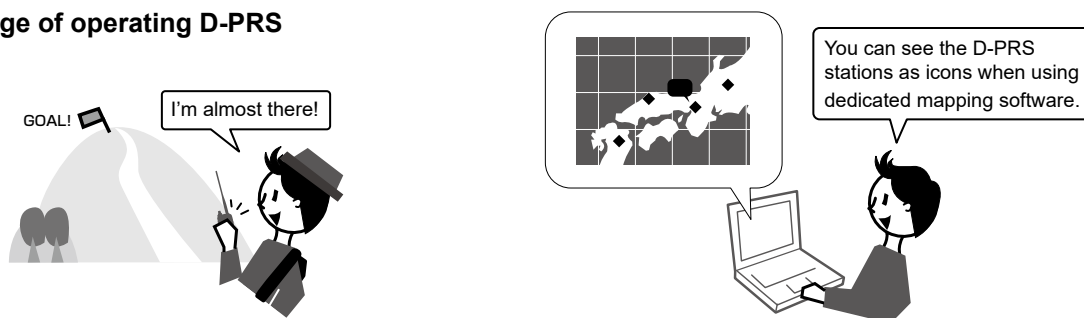
You can also enjoy voice communication in DV mode while receiving event information, traffic updates, emergency alerts, and weather reports in the background.

① Available functions and data types may vary, depending on the transceiver model. See page 3 for details.

The image of each station



The image of operating D-PRS



GPS TX mode and TX format types

GPS position data has 2 TX modes, D-PRS and NMEA. Moreover, with the D-PRS mode data, 5 position formats, Position (Mobile station/Base station), Object, Item, and Weather, are selectable.

D-PRS	D-PRS is a function that simultaneously sends position data received from the internal GPS receiver, using the slow speed data packet space, along with voice.
Position (Mobile)	A station operating from a vehicle, or other position, away from its normal base position.
Position (Base)	A station operating at home or in a building.
Object	Transmitting Object data such as earthquake information, satellite tracking information, and so on. An Object contains a time stamp.
Item	Transmitting Item data, such as a traffic accident, a lighthouse, an antenna, or a DV access point position, and so on. An Item does not contain a time stamp.
Weather	A station transmitting weather information received from a weather device.
NMEA	A station transmitting position data (NMEA 0183) received from the internal GPS receiver.

Differences by transceiver models

◆ Selectable TX Format types

The selectable TX types may vary, depending on whether the TX Format setting is available on the transceiver. Check your transceiver model in the table below. To transmit, see the setting page in the Advanced Guide.

Transceivers	TX format	TX format types	Setting page
ID-31A/E, ID-31A/E PLUS, ID-51A/E, ID-51A/E PLUS, ID-51A/E PLUS2, IC-7100	Not available	 Position (Mobile)	Advanced Guide p. 7
ID-50A/E, ID-52A/E, ID-52A/E PLUS, IC-705, IC-905, ID-4100A/E, ID-5100A/E, ID-5200A/E, IC-9700	Available ① For the ID-52A/E PLUS ([MENU] > GPS > GPS TX mode > D-PRS > TX Format)	 Position (Mobile)	Advanced Guide p. 7
		 Position (Base)	Advanced Guide p. 7
		 Object	Advanced Guide p. 9
		 Item	Advanced Guide p. 9
		 Weather	Advanced Guide p. 10

① The following transceivers provide D-PRS transmission settings under the GPS-A (DV-A) menu. While they can transmit D-PRS as Position (Mobile), there are certain restrictions, such as no altitude transmission support and no SSID configuration.

IC-9100, IC-80AD/E80D, ID-880H/E880, IC-92AD/E92D, IC-2820H/E2820

① The following transceivers do not provide D-PRS transmission settings in the unit itself. Data must be entered through a PC.
IC-U82, IC-V82, IC-91AD/E91, ID-800H

◆ Differences between older models

The GPS TX mode, “GPS (DV-G)” and “GPS-A (DV-A),” are now called “NMEA (DV-G)” and “D-PRS (DV-A).”

GPS (DV-G) → NMEA (DV-G)

GPS-A (DV-A) → D-PRS (DV-A)

The following transceivers do not support certain functions or display data. You can check whether your transceiver or your communication partner’s transceiver is compatible.

GPS TX mode	Transceivers	Explanation
D-PRS	ID-800H, IC-91AD/E91, IC-U82, IC-V82	Transceivers do not display D-PRS data even when received from other transceivers.
	IC-7100, ID-51A/E, ID-31A/E, IC-9100, IC-80AD/E80D, ID-880H/E880, IC-92AD/E92D, IC-2820H/E2820	Transceivers do not display D-PRS position (Base), Object, Item, or Weather information, even when received from other transceivers.
	IC-9100, IC-80AD/E80D, ID-880H/E880, IC-92AD/E92D, IC-2820H/E2820	Transceivers do not support altitude display. If other transceivers transmit with the Altitude setting ON, the altitude will be displayed as text in the comment field.
NMEA	IC-2820H/E2820, ID-800H, IC-91AD/E91, IC-V82, IC-U82, IC-2200H	Transceivers do not support GSV sentences. If other transceivers sent GPS messages as GSV sentences, the GPS messages will not be displayed properly. ① Set the GSV sentence to OFF when sending GPS messages to conventional digital transceivers.

This guide explains the D-PRS operating steps using the ID-52A/E PLUS as an example.
The names and structure of the setting items may vary, depending on the transceiver. Refer to the instructions for your transceiver as well.
For an overview of how D-PRS works, see the Basic Guide (p. 1).

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1. Operating in the D-PRS mode

To transmit D-PRS data, follow the steps below.
For more details, see the pages listed along with the steps.

1. Enter "MY" (Your own call sign).
(Basic manual D-STAR GUIDE)
2. Confirm that the GPS signal is being received.
3. Set GPS TX mode to "D-PRS." (p. 7)
4. Set TX information.
① You must set "SSID" and "Symbol."
([MENU] > GPS > GPS TX Mode > **D-PRS**)



Complete! You can transmit in the D-PRS mode.



NOTE: Transmitting through a repeater may interfere with other stations' communications. Make sure not to cause interference or disruption to other stations.

TIP: In the D-PRS mode, you can transmit earthquake or weather information, in addition to position data.
([MENU] > GPS > GPS TX Mode > D-PRS > **TX Format**)

TX format of D-PRS

- Position (Mobile/Base):
Used to transmit position data.
- Object: Used to transmit specific position data. (Contains a time stamp.)
- Item: Used to transmit specific position data. (Does not contain a time stamp.)
- Weather: Used to transmit weather information.

2. About the RX screen

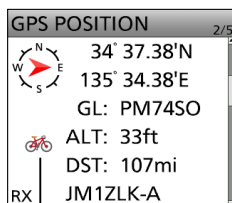
Depending on the data sent to the receiver, the display on the receiver will differ between D-PRS (5 types) and NMEA, as shown below.

([MENU] > GPS > **GPS Position**)

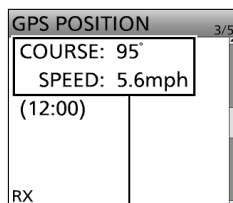
TX format:

D-PRS

Position (Mobile)

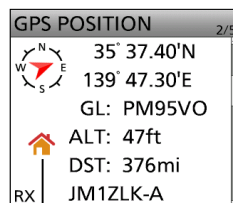


Moving symbol

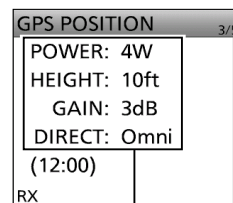


For a mobile station, Course and Speed are displayed.

Position (Base)

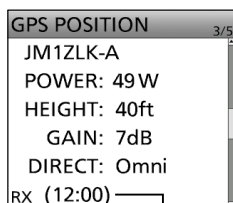
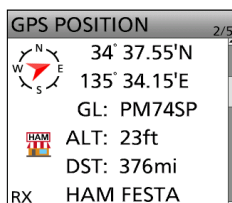


Base station symbol



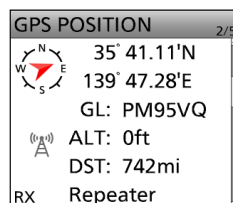
For a base station, Output power, Antenna height, Antenna gain, and Antenna direction are displayed.

Object



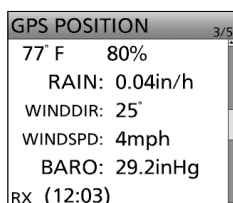
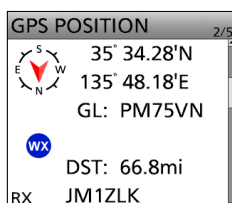
Time that the caller sent the Object's data.

Item



① For an Item station, Time is not displayed.

Weather



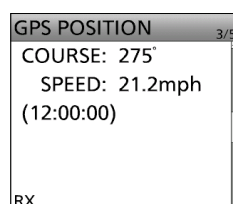
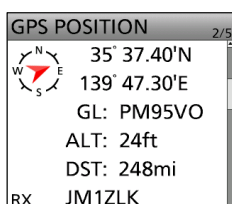
Time that the caller acquired the weather data.

① Call sign is displayed with an SSID.

① When the Object or Item is disabled, "KILLED" is displayed.

TX format:

NMEA



① A symbol or SSID is not displayed when the TX format is NMEA.

3. Displayed items

Depending on the TX format, the setting items and displayed order of the items differ.

	D-PRS								
	Position		Object			Item			Weather
	Mobile	Base	Data extension: OFF	Data extension: Course/Speed	Data extension: Power/Height/Gain/Directivity	Data extension: OFF	Data extension: Course/Speed	Data extension: Power/Height/Gain/Directivity	
Unproto Address	✓	✓	✓	✓	✓	✓	✓	✓	✓
Comment	✓	✓	✓	✓	✓	✓	✓	✓	✓
Altitude	✓	✓							
Object Name/ Item Name			✓	✓	✓	✓	✓	✓	
Data Type			✓	✓	✓	✓	✓	✓	
Position information (Latitude/Longitude/ Altitude)			✓	✓	✓	✓	✓	✓	
Data Extension	✓	✓	✓	✓	✓	✓	✓	✓	
Course				✓			✓		
Speed				✓			✓		
Power		✓			✓			✓	
Height		✓			✓			✓	
Gain		✓			✓			✓	
Directivity		✓			✓			✓	
Symbol	✓	✓	✓	✓	✓	✓	✓	✓	✓
SSID	✓	✓	✓	✓	✓	✓	✓	✓	✓
Time stamp	✓	✓	✓	✓	✓				✓

✓: Displayed

4. Transmitting D-PRS data

◇ Setting D-PRS Position (Mobile/Base)

Set to transmit as a D-PRS Position (Mobile/Base).

1. Setting the GPS TX Mode to D-PRS

[MENU] > GPS > GPS TX Mode > **D-PRS**

2. Checking the Unproto Address

You should use the default address, and editing is not recommended.

3. Setting the TX format to "Position"

Set "TX Format" to "Position."

4. Selecting the Symbol (Required setting)

Select the Symbol that indicates your operating situation. The selected symbol channel's symbols (1 ~ 4) are transmitted with position data.

① See page 15 to see all symbols.

<Editing a symbol with a 2 character symbol code>

1. Select a symbol channel.
① **DO NOT** push [ENT].
2. Push [QUICK].
3. Select "Edit Symbol."
4. Push [QUICK].
5. Select "Direct Input."
6. Rotate [DIAL] to edit the first digit.
7. Push D-pad(→) to select the second digit.
8. Rotate [DIAL] to edit the second digit.

Selectable characters and symbols
<For the first digit> /, \, 0 to 9, A to Z
<For the second digit> A to Z, a to z, 0 to 9, ! " # \$ % & ' () * + , - . / : ; < = > ? @ [\] ^ _ ` { } ~

9. After editing, push [ENT].
 - Sets the symbol into the symbol channel selected in step 1.

<Selecting a preset symbol>

1. Select a symbol channel.
① **DO NOT** push [ENT].
2. Push [QUICK].
3. Select "Edit Symbol."
4. Select a symbol.
 - Sets the symbol into the symbol channel selected in step 1.

5. Selecting the SSID (Required setting)

To help identify your station's type, select the APRS (Automatic Packet Reporting System) based SSID after the D-PRS data call sign.

① The SSID's additional methods differ, depending on whether the call sign includes a space or not.

- ---: The space in the call sign is converted to "-."
① If no text is entered after a space, the space will be deleted, and the space is not converted to "-."
Example: JA3YUA → JA3YUA
JA3YUA A → JA3YUA-A
- (-0): No SSID is added.
① If a call sign includes a space, any text or digit after the space will be deleted.
Example: JA3YUA → JA3YUA
JA3YUA A → JA3YUA
- -1~-15: Adds an SSID of -1 to -15 to your call sign.
① **Example:** SSID is "-9."
JA3YUA → JA3YUA-9
JA3YUA A → JA3YUA-9
- -A~-Z: Adds an SSID of -A to -Z to your call sign.
① **Example:** SSID is "-Z."
JA3YUA → JA3YUA-Z
JA3YUA A → JA3YUA-Z

TIP: About the SSID

According to a common guideline, to help identify a station's type, designated call sign SSIDs are used in D-PRS (or APRS).

The guideline may be changed when the infrastructure environment, such as a product or network, is changed. Check the latest guideline on the website related to D-PRS and APRS and correctly set.

<https://www.aprs.org/>

4. Transmitting D-PRS data

◇ Setting D-PRS Position (Mobile/Base)

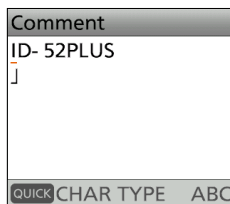
6. Entering a comment

Enter a comment, and transmit it with the D-PRS position data.

- ① The number of characters you can enter differs, depending on the data extension and altitude settings.

Data Extension	Altitude	Characters entered (maximum)
OFF	OFF	43 (Default)
OFF	ON	35
Course/Speed	OFF	36
Course/Speed	ON	28
Power/Height/Gain/Directivity	OFF	36
Power/Height/Gain/Directivity	ON	28

1. Select "Comment."
2. Push [QUICK].
3. Select "Edit."
4. Enter a comment.
 - The symbol "J" indicates the transmittable comment range. Note that the characters that exceed the range will not be transmitted.



Transmittable comment range display
(Example: up to 28 characters)

5. After entering, push [ENT].
6. Push [ENT] again.

7. Setting the Time Stamp

Set the Time Stamp function to transmit the received time data in UTC (Universal Time Coordinated) time.

- ① When your position is manually set, time stamp data is not transmitted.
- OFF: Does not transmit the time information.
 - DHM: Transmits the time stamp in the Day, Hour, and Minute format.
 - HMS: Transmits the timestamp in the Hour, Minute, and Second format.

8. Setting the Altitude

Set whether or not to transmit the altitude data acquired from the GPS receiver.

NOTE: If you transmit with the altitude setting ON, the character string is included in a comment on the products that cannot display the altitude. (p. 3)

9. Setting the Data Extension

Set the data extension of your station's information.

- ① Set "Data Extension" to "Course/Speed" to transmit as a mobile station.
- ① Set "Data Extension" to "Power/Height/Gain/Directivity" to transmit as a base station.
- ① The number of characters you can enter in "Comment" differs, depending on the "Altitude" and "Data Extension" settings.
- OFF: Does not transmit any information.
 - Course/Speed:
 - Transmits the course and speed data with the position data.
 - ① The course and speed data are not transmitted when your location is manually set.
 - ① When transmitting with this setting, your station is regarded as a mobile station.
 - Power/Height/Gain/Directivity:
 - Transmits the TX power level, height, antenna gain, antenna direction, and position data.
 - ① The Power, Height, Gain, and Directivity data are transmitted even if your location is manually set.
 - ① When transmitting with this setting, your station is regarded as a base station.

When you set "Data Extension" to "Power/Height/Gain/Directivity":

9-1. Setting the TX power

Select the TX power level of the base station to transmit along with the position data.

9-2. Setting the antenna height

Select the height of the base station's antenna to transmit along with the position data.

9-3. Setting the antenna gain

Select the gain of the base station's antenna to transmit along with the position data.

9-4. Setting the antenna directivity

Select the direction the base station's antenna is pointing to transmit, along with the position data.

10. Exiting the POSITION screen

To close the POSITION screen, push [MENU].

- Returns to the standby screen, and then "DV 1" is displayed.

4. Transmitting D-PRS data

◇ Setting D-PRS Object/Item

Set to transmit as a D-PRS Object or Item.

1. Setting the GPS TX Mode to D-PRS

[MENU] > GPS > GPS TX Mode > **D-PRS**

2. Checking the Unproto Address

You should use the default address, and editing is not recommended.

3. Setting the TX format to “Object” or “Item”

Set “TX Format” to “Object” or “Item.”

4. Entering Object name or Item name

Enter an Object or Item name, such as event information or location (up to 9 characters).

5. Selecting Data type

Set the Object or Item’s status.

- ① For example, if you want to transmit finished event information as an Object, set the Data type to “Killed Object.”
- Live Item: The Object or Item station is valid.
- Killed Item: The Object or Item station is invalid.

6. Setting the Symbol (Required setting)

Select the Symbol that indicates an Object or Item.

- ① See page 7 to enter the symbol.
- ① See page 15 to see all symbols.

7. Entering a comment

Enter a comment to transmit as an Object or Item.

- ① The number of characters you can enter differs, depending on the data extension and altitude settings.

Data Extension	Altitude	Characters entered (maximum)
OFF	—	43 (Default)
OFF	Entered	35
Course/Speed	—	36
Course/Speed	Entered	28
Power/Height/Gain/Directivity	—	36
Power/Height/Gain/Directivity	Entered	28

- ① The symbol “” indicates the transmittable comment range. Please note that the characters that exceed the range will not be transmitted.
- ① See page 8 to enter a comment.

8. Entering the Position data

Enter the position data of an Object or Item.

- ① For example, if you want to transmit traffic accident information as an Item, enter the position data where the accident happened.
- If the position data is in the GPS memory, you can easily set the position data from the memory.

Entering the position information manually

1. Select “Edit” on the Quick Menu window.
 - The POSITION EDIT screen is displayed.
2. Select “LATITUDE.”
3. Enter a latitude.
 - ① Select “N/S” to switch the north latitude and the southern latitude.
4. Select [ENT].
5. Select “LONGITUDE.”
6. Enter a longitude.
 - ① Select “E/W” to switch the east longitude and the west longitude.
7. Select [ENT].
8. Select “ALTITUDE.”
9. Enter an altitude.
 - ① After entering, select [+/-] to switch “+” and “-.”
10. Select [ENT].
11. Select “<<Write>>.”
12. Select “YES.”
 - The position information is entered.

9. Setting the Data Extension

Set the data extension of an Object or Item’s information.

- ① Set “Data Extension” to “Course/Speed” to transmit as a mobile station.
- ① Set “Data Extension” to “Power/Height/Gain/Directivity” to transmit as a base station.

When you set “Data Extension” to “Course/Speed”:

9-1. Entering the Course

Enter the Object or Item’s course when the station moves.

9-2. Entering the Speed

Enter the Object or Item’s speed.

When you set “Data Extension” to “Power/Height/Gain/Directivity”:

9-3. Setting the TX power

Select the Object or Item’s TX power level if the station is a repeater, node, access point, and so on, and an antenna is installed.

9-4. Setting the antenna height

Select the height of the Object or Item’s antenna.

9-5. Setting the antenna gain

Select the gain of the Object or Item antenna.

9-6. Setting the antenna directivity

Select the direction the base Object or Item’s antenna is pointing.

4. Transmitting D-PRS data

◇ Setting D-PRS Object/Item

10. Selecting the SSID (Required setting)

To help identify your station's type, select the APRS based SSID after the D-PRS data call sign. (p. 7)

11. Setting the Time Stamp

① This item is displayed when the TX format is "Object."

Set the Time Stamp function to transmit the received time data in UTC (Universal Time Coordinated) time.

- DHM: Transmits the time stamp in the Day, Hour, and Minute format.
- HMS: Transmits the time stamp in the Hour, Minute, and Second format.

12. Exiting the OBJECT or ITEM screen

To close the OBJECT or ITEM screen, push [MENU].

- Returns to the standby screen, and then "DV 1" is displayed.

◇ Setting D-PRS Weather

Set to transmit as a D-PRS Weather station.

1. Setting the GPS TX Mode to D-PRS

[MENU] > GPS > GPS TX Mode > **D-PRS**

2. Checking the Unproto Address

You should use the default address, and editing is not recommended.

3. Setting the TX format to "Weather"

Set "TX Format" to "Weather."

4. Selecting the Symbol (Required setting)

Select the Symbol that indicates the weather station.

① See page 7 to enter the symbol.

① See page 15 to see all symbols.

5. Selecting the SSID (Required setting)

To help identify your station's type, select the APRS based SSID after the D-PRS data call sign. (p. 7)

6. Entering a comment

Enter a comment to transmit as a D-PRS Weather station.

1. Select "Comment."
2. Push [QUICK].
3. Select "Edit."
4. Enter a comment.
5. After entering, push [ENT].
6. Push [ENT] again.

7. Setting the Time Stamp

Set the Time Stamp function to transmit the received time data in UTC (Universal Time Coordinated) time.

- OFF: Does not transmit the time information.
- DHM: Transmits the time stamp in the Day, Hour, and Minute format.
- HMS: Transmits the time stamp in the Hour, Minute, and Second format.

8. Exiting the WEATHER screen

To close the WEATHER screen, push [MENU].

- Returns to the standby screen, and then "DV 1" is displayed.

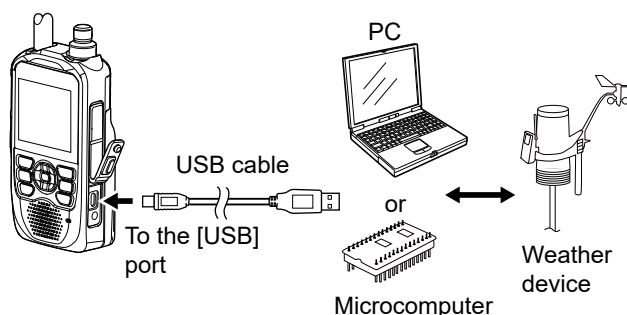
5. Weather station transmission

The following explains the operation of a weather station using the ID-52A/E PLUS as an example. Refer to the instructions for your transceiver to confirm connection details and settings when transmitting as a weather station.

When you transmit as a weather station, you should set the weather station's settings and input the weather data into the [USB] port. You can input the weather data from a third party's weather device by converting it to the APRS weather format in your PC or microcomputer.

After completing the weather station's settings and inputting the weather data, you can transmit as a weather station.

NOTE: To input the Weather data into the [USB] port, set "USB Connect" to "Serialport," and set "USB Serialport function" to "DV Data."
([MENU] > SET > Function > **USB Connect**)
([MENU] > SET > Function > **USB Serialport Function**)
If the weather data is not input into the [USB] port, you cannot transmit as a weather station.



◆ Application setting

Configure the communication software as follows.

- Port: The COM port number that is used by the transceiver.*
- Baud rate: Your desired speed
- Data: 8 bit
- Parity: none
- Start: 1 bit
- Stop: 1 bit
- Flow control: none

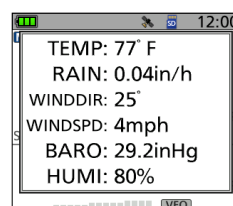
*Depending on the PC environment, the COM port number used by the ID-52A/E PLUS may be higher than 5.

In that case, use an application that can set it to higher than 5.

◆ Confirming the weather data input

You can confirm whether or not the weather data is input into the [USB] port.

1. Set "GPS TX Mode" to "D-PRS," and "TX format" to "Weather." (p. 10)
 2. On the Standby screen, push [QUICK].
 3. Select "Weather Information."
- ① Displays the WEATHER INFORMATION screen if the weather data is entered correctly.
- ① When the weather information is displayed, you can transmit as a weather station. If "-" is displayed on the screen, the weather data is not entered. In that case, check the entered data settings.



◆ About the weather data content

The weather data should be input according to the format (based on the APRS Weather Data), shown below.

Example:

220/004 g005 t077 r000 p000 P000 h50 b09900 End code
1 2 3 4 5 6 7 8 9

No.	Item	Value	Unit
1	Wind direction	000 to 360	°
2	Wind speed	000 to 999	mph
3	Gust speed	g000 to g999	mph
4	Temperature	t-99 to t-01, t000 to t999	°F
5	Rainfall	r000 to r999* ¹	inch
6	Rainfall (24 Hours)	p000 to p999* ¹	inch
7	Rainfall (Midnight)	P000 to P999* ¹	inch
8	Humidity	h00, h01 to h99 (h00 indicates 100%.)	%
9	Barometric pressure	b00000 to b99999* ²	hPa, mb

*¹ The last 2 digits indicate the 1 decimal place and the 2 decimal places.

*² The last digit indicates the 1 decimal place.

① If you have no data, enter a space or "." (period) instead of a number.

(Example: ".../...g...t077r000p...P...h50b.....")

① Enter <CR>, <LF>, or <CR><LF> for an end code.

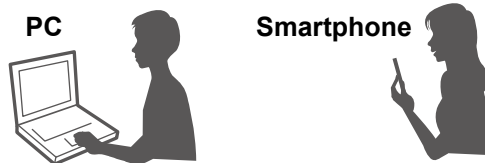
6. Displaying your location using mapping software

If you transmit to an I-GATE station, and then enter the call sign information on the Internet map website, the selected symbol is displayed.

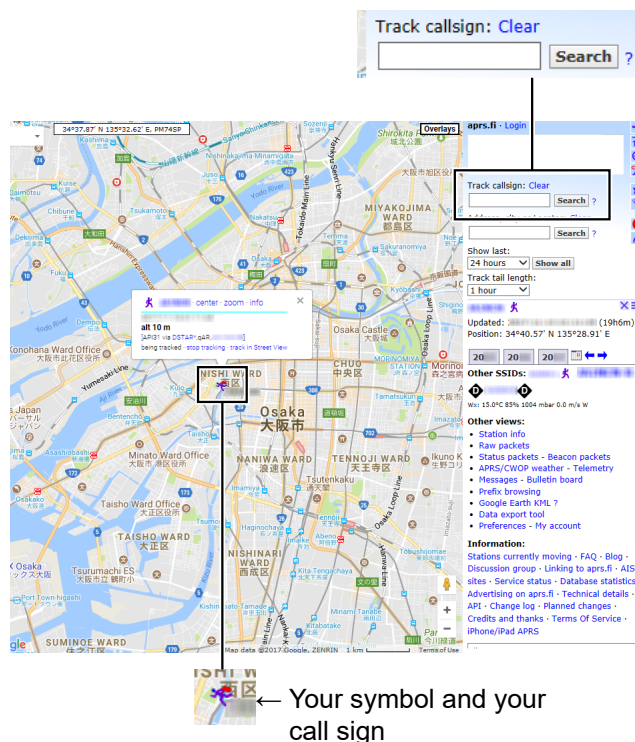
Example: Check your location on the APRS.fi site.

1. Display a free APRS related map site on the Internet. (Example: <https://aprs.fi/>)
2. Enter your call sign in the "Track callsign" field.
3. Click <Search>.
 - The icon (D-PRS symbol) is displayed on the map site.

You can check it on the Internet!



Enter your call sign, and then click <Search>.



7. GPS Automatic Transmission

NOTE:

- Use the GPS Automatic Transmission function in only the Simplex mode.
- Using the function through a Repeater may interfere with other communications.

You can set the GPS Automatic Transmission function in the following menu.

[MENU] > GPS > **GPS Auto TX**

If you set this function, GPS data is automatically transmitted according to the set time.

- ① This function is not activated if your call sign (MY) is not entered in the transceiver.
- ① If "GPS Select" is set to "OFF" or "Manual," this function is not enabled when the transmit GPS TX mode is set to NMEA.
([MENU] > GPS > GPS Set > **GPS Select**)

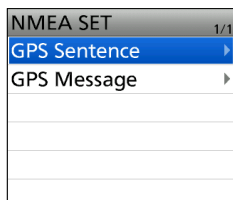
8. Transmitting NMEA data

Set a GPS sentence to transmit GPS data in the DV mode.

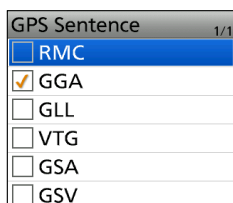
◆ Setting the GPS data sentence

[MENU] > GPS > GPS TX Mode > NMEA > **GPS Sentence**

1. Push [MENU].
2. Select "GPS TX Mode" in the "GPS" menu.
3. Select "NMEA."
4. Select "GPS Sentence."



5. Select the GPS Sentence.



- Displays "☑" when the sentence is set to ON.
- ① The selectable GPS sentences are RMC, GGA, GLL, VTG, GSA, and GSV. The GGA sentence is set to ON as the default GPS sentence.
- ① To reset to the default setting, push [QUICK], and then select "Default."

6. Repeat step 5 to set the GPS sentence.
 - ① Up to 4 GPS sentences can be set at a time.
7. To close the "GPS Sentence" screen, push [MENU].
 - Returns to the standby screen, and then "DV 1" is displayed.

NOTE:

- Set "GSV Sentence" to "OFF" when sending the GPS message to conventional digital transceivers. (Basic Guide p. 3)
- If "GPS Select" is set to "Manual," the transceiver automatically sets the NMEA sentence and transmits it along with the manually entered position data in "Manual Position."
([MENU] > GPS > GPS Set > **GPS Select**)
([MENU] > GPS > GPS Set > **Manual Position**)
- Note that if "GPS Auto TX" is set to any option other than "OFF," data is automatically transmitted according to the set time.
([MENU] > GPS > **GPS Auto TX**)
 - ① If "GPS Select" is set to "OFF" or "Manual," the GPS Automatic Transmission function is not activated.

Contents of the GPS sentence

Sentence	Lon /Lat	Alt	UTC	Date (UTC)	Status	2D /3D	COG (True)	SOG (knot)	Others
RMC	✓		✓	✓	✓		✓	✓	Magnetic variation, Mode Indicator
GGA	✓	✓	✓		✓				Number of satellites in use, HDOP, Geoidal separation, Age of Differential GPS data, Differential reference station ID
GLL	✓		✓		✓				Mode Indicator
VTG							✓	✓	COG (Magnetic north), SOG (km/h), Mode Indicator
GSA					✓	✓			PRN number of satellites used in solution, PDOP, HDOP, VDOP
GSV									Total number of sentences, Sentence number, Total number of satellites in view, Satellite information (ID, Elevation, Azimuth, S/N)

8. Transmitting NMEA data

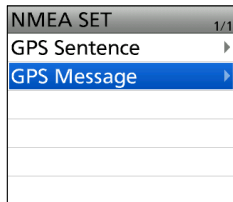
◇ Setting a GPS message

Enter a GPS message to be transmitted with the position data.

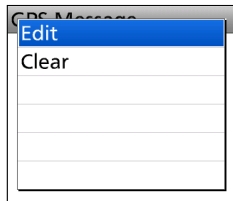
Example: Entering “OSAKA Suzuki”

[MENU] > GPS > GPS TX Mode > NMEA > **GPS Message**

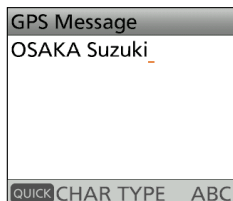
1. Push [MENU].
2. Select “GPS TX Mode” in the “GPS” menu.
3. Select “NMEA.”
4. Select “GPS Message.”



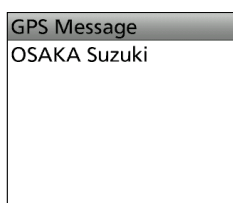
5. Push [QUICK].
6. Select “Edit.”



7. Enter a GPS message of up to 20 characters.



8. After entering, push [ENT].



- You can confirm the entered message.
9. To close the “GPS Message” screen, push [MENU].

9. Symbol

Selectable symbols

	/!	Sherrif		/S	Shuttle		/p	Rover		_	Overlaid WX Station
	/#	Digipeater		/T	SSTV		/r	Repeater		\a	Overlaid Diamond
	/&	Gateway		/U	Bus		/s	Ship (power boat)		\c	RACES
	/'	Small Aircraft		/V	ATV		/u	Truck (18-wheeler)		\g	Gale Flags
	/+	Red Cross		/W	WX Service		/v	Van		\h	Ham Store
	/-	House QTH (VHF)		/X	Helicopter		/y	Yagi @ QTH		\j	Work Zone
	/.	X		/Y	Yacht		\#	Overlaid Digipeater		\m	Speedpost (Value Signpost)
	//	Red Dot		/[	Person		\&	Overlaid Gateway		\n	Triangle
	/:	Fire		/\	DF Station		\-	House		\o	Small Circle
	/;	Campground		/^	Large Aircraft		\.	Big Question Mark		\s	Overlaid Ship
	/<>	Motorcycle		/_	WX Station		\0	Circle		\t	Tornado
	/=	Railroad Engine		/'	Dish Antenna		\;	Park/Picnic Area		\u	Overlaid Truck
	/>	Car		/a	Ambulance		\>	Overlaid Car		\v	Overlaid Van
	/C	Canoe		/b	Bicycle		\L	Lighthouse		\x	Wreck
	/E	Eyeball		/f	Fire Truck		\S	Satellite		/'	Other
	/K	School		/g	Glider		\U	Sunny			
	/L	PC User		/h	Hospital		\W	Overlaid WX Service			
	/O	Balloon		/j	Jeep		\Y	Radio			
	/P	Police		/k	Truck		IY	Icom Radio			
	/R	Recreational Vehicle		/n	Node		\^	Aircraft			

10. About DPRS data

TIP:

D-PRS data content

D-PRS data contents are shown below.

◇Position (Mobile)

(e.g.) JA3YUA-A>API52,DSTAR*:/002338h3437.38N/13534.29E>090/002/A=000012ID-52PLUS OP.SATOH
 ① ② ③ ④ ⑦ ⑧ ⑨ ⑩ ⑨ ⑪ ⑬ ⑭

◇Position (Base)

(e.g.) JA3YUA-A>API52,DSTAR*:/002338h3437.38N/13534.29E-PHG5132OP.SATOH
 ① ② ③ ④ ⑦ ⑧ ⑨ ⑩ ⑨ ⑫ ⑭

◇Object

(e.g.) JA3YUA-A>API52,DSTAR*::HAM FESTA*012345z3437.38N\13534.29Eh2026.08.31 am10-pm4
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑨ ⑭

◇Item

(e.g.) JA3YUA-A>API52,DSTAR*:)REPEATER!3454.00N/13536.00ErPHG5132439.39MHZ DV RPT JP3YHH A
 ① ② ③ ④ ⑤ ⑥ ⑧ ⑨ ⑩ ⑨ ⑫ ⑭

◇Weather

(e.g.) JA3YUA-A>API52,DSTAR*:/012345z3454.00N/13536.00E_220/004g005t077r000p000P000h50b09900
 ① ② ③ ④ ⑦ ⑧ ⑨ ⑩ ⑨ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒

① Call sign

② SSID

③ Unproto Address

④ D-PRS Data type

/ Position with time stamp

! Position without time stamp

; Object

) Item

⑤ Object Name/Item Name

⑥ Data Type

* Live Object

! Live Item

_ Killed Object/Killed Item

⑦ Time Stamp (UTC)

h Hour Minute Second

z Day Hour Minute

⑧ Latitude

⑨ Symbol

⑩ Longitude

⑪ Data Extension (Course/Speed)

Course:0 ~ 360°

Speed:0 ~ 999 knots

⑫ Data Extension(PHG codes)

PHG codes definitions

	0	1	2	3	4	5	6	7	8	9	
First: Power	0	1	4	9	16	25	36	49	64	81	(W)
Second: Height	10	20	40	80	160	320	640	1280	2560	5120	(feet)
Third: Gain	0	1	2	3	4	5	6	7	8	9	(dB)
Fourth: Directivity	omni	45°NE	90°E	135°SE	180°S	225°SW	270°W	315°NW	360°N	-	-

⑬ Altitude

-99999 ~ 999999 feet

⑭ Comment

⑮ Wind direction/Wind speed

Wind direction:0 ~ 360°

Wind speed: 0 ~ 999 mph

⑯ Gust speed

0 ~ 999 mph

⑰ Temperature

-99 ~ 999f

⑱ Rainfall

0.00 ~ 9.99 inch

⑲ Rainfall (24 Hours)

0.00 ~ 9.99 inch

⑳ Rainfall (Midnight)

0.00 ~ 9.99 inch

㉑ Humidity

1 ~ 99%, 00=100%

㉒ Barometric pressure

0.0 ~ 9999.9 hPa

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