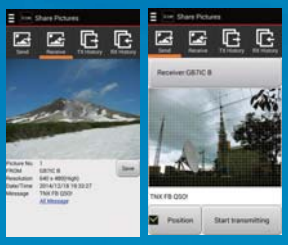
ICOM

D-STAR
SYSTEM INTRODUCTION

RS-MS1A Android™ Application Enhances Your D-STAR Experience

Share Pictures

Take pictures – including your shack, operating place in the field, rigs or friends – with your Android™ device and share them over D-STAR transceivers. Add to your ragchew with images and make QSO even more fun.



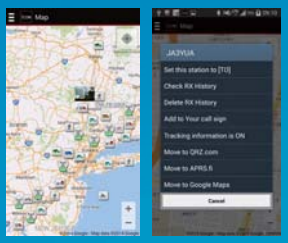
Text Messaging

Text messaging allows you to chat with other D-STAR users. Use texts when voice communications may not be appropriate. By using the Android™ devices, you can exchange a message by your preferred language.

D-STAR Stations and Repeater Sites Mapping

(* ID-51A PLUS and ID-5100A only)

See the location of other stations or repeater sites on a map using received position data. Automatically set the transceiver's "FROM" and "TO" fields by tapping a repeater site or a station on the map.



DV Fast Data Mode

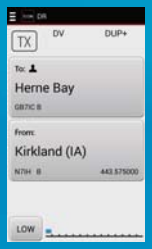
By using data in place of voice frames, the ID-5100A and ID-51A PLUS transfers data 3.5 times faster (3480 bps) than in the conventional DV mode (with voice). Pictures taken by an Android™ device can also be quickly transmitted in the DV Fast Data mode.

DV Fast Data Mode

DR Functions and Remote Settings

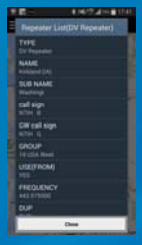
(* ID-51A PLUS and ID-5100A only)

You can set the transceiver's "FROM" and "TO" fields and change some of the transceiver's function settings from your Android™ device. When used with the optional Bluetooth™ headset, VS-3, you can wirelessly control the ID-5100A from a remote place.



Repeater List Viewer

You can see detailed repeater information including frequencies, call sign and offset frequency in the Repeater list. The Repeater list is continually updated. You can use it as reference information for manually setting the D-STAR transceiver.



Other Functions

- Offline map* uses your own maps without needing Internet connection
- Received history* allows you to read and edit the received station's information
- Call sign list allows you to read and edit the Call signs and names used in the DR function
- Object, item and weather reports using D-PRS can be shown on the map
- Import a Repeater list and a Call Sign list
- Export the Repeater list, the Call Sign list, and the Receive History
  (* ID-51A PLUS and ID-5100A only. Cannot use with IC-7100, ID-31 and ID-51 original model.)

RS-MS1A Remote Control Software Requirements

(Free Download Android™ Application from Google Play™)

Compatible Transceivers

- ID-5100A
- ID-51A PLUS
- ID-51A 50th Anniversary model
- ID-51A original model*
- ID-31A*
- IC-7100*

* Not all functions are usable.
* Either optional UT-133 Bluetooth® unit (for ID-5100A) or OPC-2350LU data cable is required.

Android™ Device Requirements

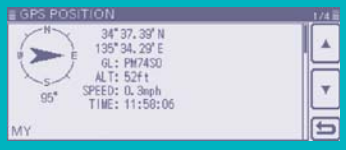
- Android 4.0 or later
- Touch screen
- Bluetooth function and/or USB host function

Note: Some functions may not work properly, depending on the Android™ devices used.

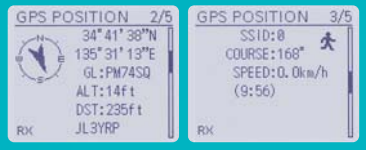
GPS Position Reporting Functions

Displays Own and Received Position Information

The ID-51A PLUS and ID-5100A has an integrated GPS receiver and shows your own position, course, speed and altitude on the display. The GPS position information can be transmitted with voice. Received position information is also shown with distance and direction from your position.



Own (MY) position example (ID-5100A)



Received position example (ID-51A PLUS)

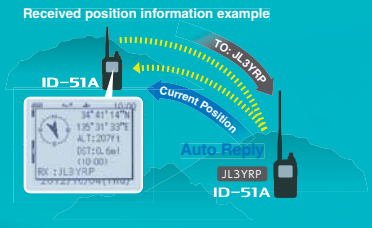
The IC-7100 and IC-9100 allow you to manually input the current latitude, longitude and altitude or connect an external GPS receiver.

Display example of IC-9100

GPS Button (IC-9100)

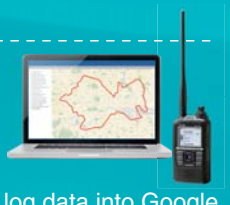
Automatic Position Reply Function

When receiving a call addressed to your call sign, this function automatically replies your current position information. Replied position information will pop up on the caller's display.



GPS Log Function*

The GPS log function logs your position information at regular intervals (1 second–60 seconds, depending on the setting) and memorizes this in the SD card or microSD card to export to your PC. You can import the log data into Google Earth or other map applications.



* SD card or microSD card required.

Export to the Android™ Application

(* ID-51A PLUS and ID-5100A only)

When connected with an Android™ device, received position information can be plotted on a Map Application.

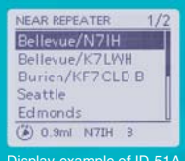
Repeater Search Function

(* ID-51A PLUS, ID-5100A and IC-7100 only)

The repeater search function assists you in accessing nearby repeaters, even in areas you are visiting for the first time. The function searches for a nearby repeater using the repeater memories with the GPS position information.

* To use the automatic repeater search function, the position data of the repeater is required. The repeater list can be updated with programming software. The ID-51PLUS and ID-5100A can also search for D-STAR repeaters as well as analog FM repeaters.

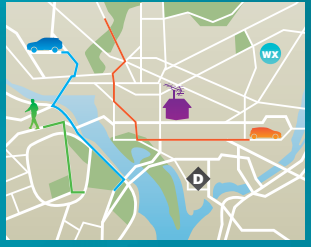
Display example of IC-7100 (Shows near repeater list with distance)

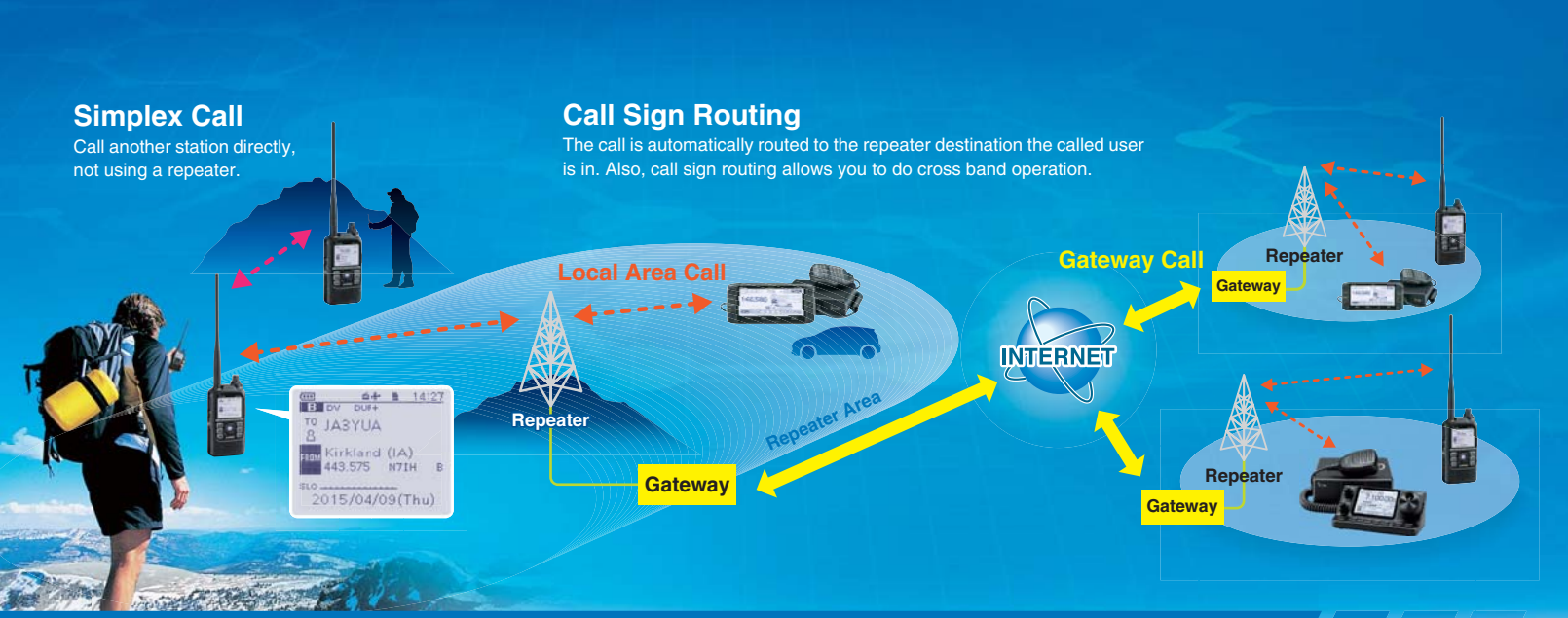


Display example of ID-51A

D-PRS (Digital Packet Reporting System)

D-PRS converts the D-STAR GPS information to APRS™ compatible strings and presents it to the APRS-IS (APRS Internet Server) and other APRS™ clients. The APRS maps show real-time APRS information and tracks D-STAR stations on the Internet.





Long Distance Communications Virtually Anywhere

The biggest appeal of D-STAR is long distance communications over the Internet gateway through repeaters. Even with a handheld transceiver, you can communicate with a friend in another city or country with a clear audio. You can uplink to your local repeater and downlink from a remote repeater, even from the opposite side of the earth.

What is D-STAR?

The term D-STAR is Digital Smart Technology for Amateur Radio. It is an open protocol for digital communications established by JARL (Japan Amateur Radio League).

Digital modulation equals Clear Audio

As the digital voice incorporates error correction and DSP technology, the result is clear and crisp audio. The concept is similar to conventional FM, but D-STAR DV mode provides clear intelligible audio without the noises associated with being on the fringes of the communication range. In addition to the clear audio, Icom transceivers automatically sense a FM signal while operating in DV mode, and temporary changes the operating mode to the FM mode.

DD Mode Operation

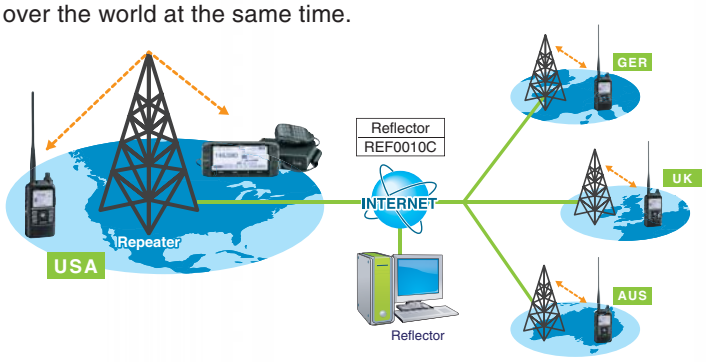
DD mode is a 128kbps data mode in a 10 W mobile package on the 23cm band.* This is perfect when you need network connectivity, at ranges your standard wireless network cannot reach. The ID-1 becomes your wireless modem via your computer's Ethernet port.

* The ID-1 is required for DD mode operation.

Routing and Linking

One of the great features of D-STAR is the user's ability to talk anywhere they want via call sign commands. With the basic call sign routing, you can route your communications to a specific user or repeater. You are not required to know what repeater the person you want to communicate with is located.

For those repeaters running the dplus software, you have the capability of linking to another repeater or a group of repeaters via a reflector. The reflectors are a great way to meet new people and have communications with a group of users from all over the world at the same time.



Internet Resources and D-STAR Community

There are already many D-STAR user communities on the Internet and below are some major Internet resources.

http://www.dstarinfo.com/

This site is dedicated to helping D-STAR users world wide. From basic information on what D-STAR is to detailed technical information.

- Repeater List
- Reflector List
- Application List

http://www.dstarusers.org/

Your source for D-STAR information.

- Last Heard List
- Repeater List
- D-STAR Growth Report

http://www.d-rats.com/

A multi-platform integrated tool for communication using D-STAR radios.

D-STAR QSO PARTY

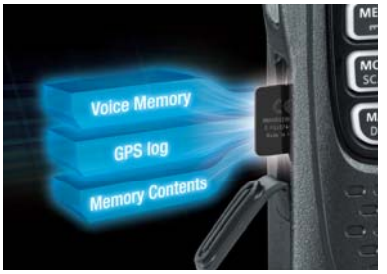
The biggest D-STAR QSO party in the World is held every September.

Handheld

Enhanced Functions and Great Digital Features

IPX7 Waterproof Construction

Integrated GPS Receiver



microSD Card Slot

- **VHF/VHF, UHF/UHF, VHF/UHF dualwatch**
- **Integrated GPS receiver**
- **Independent AM/FM broadcast receiver**
- **Compact and lightweight**
- **PC programmable with CS-51PLUS free download software**

VHF/UHF DUAL BAND DIGITAL TRANSCEIVER

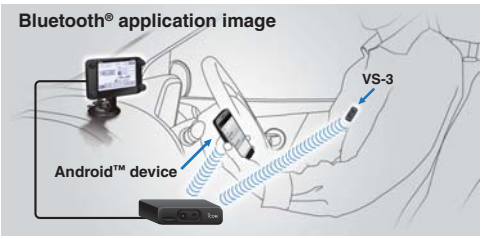
ID-51A PLUS

5W

Mobile

Innovation and Mobility Taken to the Next Level

Touch Screen Operation



VS-3 Bluetooth® Headset

SD Card Slot for
Voice and Data Storage

- **VHF/VHF, UHF/UHF, VHF/UHF dualwatch**
- **Integrated GPS receiver**
- **Optional wireless remote control Bluetooth® headset VS-3**
  (Optional UT-133 Bluetooth® Unit must be installed in the ID-5100A.)
- **PC programmable with CS-5100 free download software**

VHF/UHF DUAL BAND DIGITAL TRANSCEIVER

ID-5100A

50W

Base Stations

Intuitive Touch Screen, Quick Response, Multi-band Radio

- **HF, 50/144/430/440MHz multi-band**
- **Intuitive touch screen interface**
- **Controls at your fingertips with an angled display**

100W (HF/50MHz) 50W (144MHz) 35W (430/440MHz)

HF/VHF/UHF TRANSCEIVER

IC-7100

Base Stations

The All-around Transceiver, IC-9100

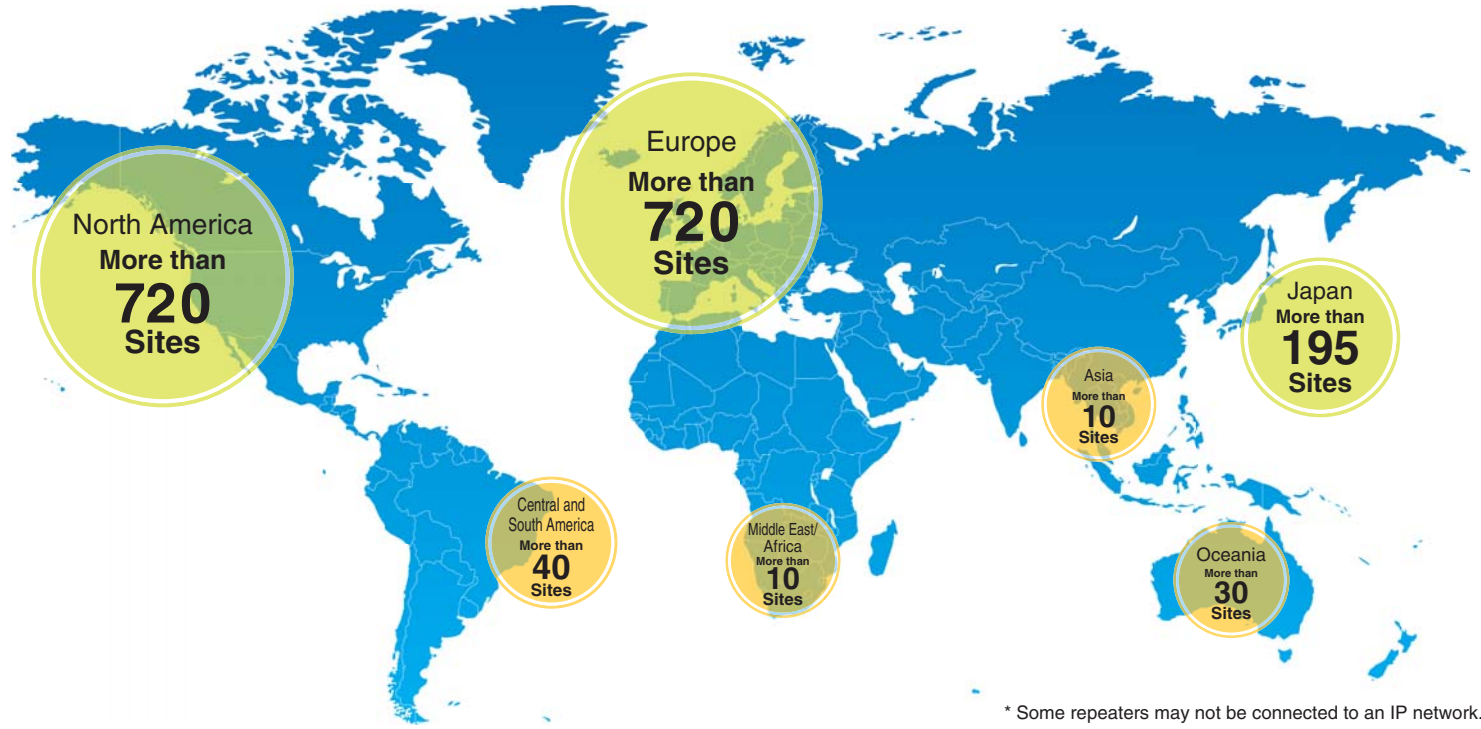
- **28/50/144/430/440MHz band DV mode** (UT-121 required)
- **1200MHz band DV mode** (UT-121 and UX-9100 required)
- **Three independent receivers, one each for HF/50MHz, 144MHz and 430/440MHz bands**

HF/VHF/UHF TRANSCEIVER

IC-9100

100W (HF/VHF) 75W (430/440MHz) 10W (1200MHz with UX-9100)

D-STAR Worldwide Repeater Network



* Some repeaters may not be connected to an IP network.

D-STAR Repeaters

ID-RP2C
Repeater controller

One unit is required for each repeater station and connects up to 4 RF modules. Transfers the received signal to the specified RF module or the Internet gateway server.

Photo shows ID-RP2V.

ID-RP2V
1200MHz DV mode RF module

ID-RP2000V
144MHz DV mode RF module

ID-RP4000V
430/440MHz DV mode RF module

These are DV mode RF modules for the respective bands. With a combination of these RF modules, cross band operation with 144/430 (440)/1200MHz bands is available.

ID-RP2D
1200MHz DD mode RF module

The ID-RP2D is the DD mode RF module for 1.2GHz. It provides 128kbps high speed data communication.

RS-RP2C
Internet gateway software

The Internet gateway connects the D-STAR repeater station to the Internet and links multiple D-STAR repeater stations via the Internet.

Repeater Compatibility Chart with Icom Digital Transceiver

	ID-51A PLUS	ID-5100A	IC-7100	IC-9100+UT-121	ID-1
ID-RP2000V (144MHz DV mode)	✔	✔	✔	✔	—
ID-RP4000V (430/440MHz DV mode)	✔	✔	✔	✔	—
ID-RP2V (1200MHz DV mode)	—	—	—	✔*1	✔
ID-RP2D (1200MHz DD mode)	—	—	—	—	✔

*1 Optional UX-9100 and UT-121 are required.
* Repeater access using radio frequency. Cross band operation between ID-RP2000V/RP4000V/RP2V is possible.

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