O ICOM

1200MHz DIGITAL TRANSCEIVER





DIGITAL HAM INNOVATION WITH DIGITAL VOICE & HIGH SPEED DATA

What is D-STAR?

D-STAR is a new ham radio system which offers digital voice and data communication. It connects repeater sites over microwave links and the Internet and forms a wide area ham radio network. The D-STAR system provides a new capability and functionality to the ham radio world and increases the efficiency of emergency communications.

What can the D-STAR system do?

128kbps digital data and 4.8kbps digital voice communication

The D-STAR system provides not only digital voice (DV mode) communication but also digital data transmission (DD mode). It can exchange various data files such as graphics, images, etc, at 128kbps.



Your voice and data can reach further than ever

Multiple repeater links by radio and the Internet provide long distance communication to virtually anywhere.

Internet application available

The D-STAR system uses the TCP/IP protocol, so when connected with a PC, web, e-mail and other Internet applications are available.



Wireless Internet Access

No matter where you travel within the D-STAR network, you can access the web, e-mail, text messages and multimedia messages.

Independent network

In DD mode, ID-1 can transfer data directly with another ID-1 without the use of a repeater. This is useful for establishing a simple network where a D-STAR repeater does not exist or D-STAR services are not required.

Increase efficiency of emergency communications

Out in the field, fast emergency information is the key. Send pictures and weather charts to or from a remote location with the ID-1. "A picture is worth a thousand words", and efficient send/receive opens up your repeater for other emergency communications.

D-STAR system will be upgraded

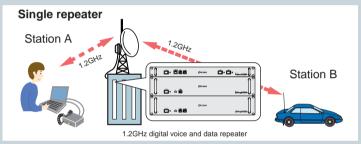
The D-STAR system will be enhanced and new D-STAR radios will be released, adding features and performance to the D-STAR system.

D-STAR repeater system

The D-STAR repeater is composed of a repeater controller, 1.2GHz digital voice repeater, digital data repeater, 10GHz microwave relay and the Internet gateway PC. For the signal is digital data, no information is lost due to conversion and multiple repeater relays are possible in this system. The D-STAR system repeater can perform 3 relay functions as shown in the following figures.

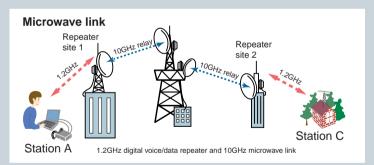
Single repeater

The D-STAR repeater operates similar to existing analog repeater. That is a simple relay of transmit and receive communication in 1.2GHz band.



Microwave link

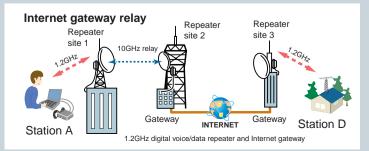
When D-STAR repeaters are connected via 10GHz microwave, the D-STAR system transfers a received data to another repeater site.



You can also make a CQ call to a specified repeater area.

Internet gateway relay

When D-STAR repeaters are connected with the Internet gateway, the D-STAR system relays the received data over the Internet. Microwave links and Internet gateways can be combined even during



PC remote controller supplied

The controller software is supplied with the ID-1. When the ID-1 is connected to a PC via a USB cable, most functions of the ID-1 can be controlled from the PC. In DD mode operation*, you can browse web sites and send and receive e-mail as if the ID-1 is a 10W wireless network adapter. * Ethernet port is required for DD mode operation.



Useful callsign functions

The ID-1 embeds your own and the called station's callsign in your transmission. When you input "CQCQCQ" as the intended station, you can make a CQ call in the area. The calling station's ID is displayed on the

received station and a newly received callsign Receive Callsign can be automatically Caller: JA3YUA stored in the memory.



Digital callsign squelch (DSQL) & Digital code squelch (CSQL) The DSQL opens the squelch, only when your callsign is received. When you share a single callsign with a club or group members, the CSQL function allows you to set a CSQL code from 00 to 99 and provides quiet stand-by while other members are talking.

EMR mode operation

When you require the attention of all stations in the area, the Enhanced Monitor Request (EMR) mode operation allows the caller to bypass the CSQL and DSQL setting of the receivers station. During EMR mode operation, all receiving stations will hear your audio, even though they may be muted.

Short message in DV mode

Short messages of 20 characters max. can be sent in DV mode operation.

Analog FM mode operation

The ID-1 also operates in analog FM mode. allowing you to communicate with an analog FM transceiver. In FM mode operation, the ID-1 has CTCSS tone squelch and pocket beep functions for quiet stand-by.

Other features

• 950bps (approx.) data communication capability in DV mode • AFC (Automatic Frequency Control) function* • S-meter squelch • Break-in communication • Programmed, memory and select mode scan • Stand-by beep

* FM and digital voice only.

Rear View





1200MHz DIGITAL TRANSCEIVER



GENERAL
Frequency coverage : 1240–1300MHz
• Type of emission : FM, GMSK (Digital)
Transmission speed (theoretical value) :
Data 128kbps
Digital voice 4.8kbps
Codec : AMBE (2.4kbps)
• No of memory channels: 100 regular 3 calls and 2 scan edges
• Frequency resolution : 5, 6.25, 10, 12.5, 20, 25, 50,
100kHz
• Operating temp. range: -10°C to +60°C; +14°F to +140°F
• Frequency stability : ±2.5ppm (-10°C to +60°C)
 Power supply requirement : 13.8V DC ±15%
Current drain (at 13.8V DC; approx.):
Rx AF max. Less than 1.5A
Tx at 10W Less than 7.0A
 Antenna impedance : 50Ω (Type-N)
 Dimensions (Projections not included; W×H×D):
Main unit $141 \times 40 \times 165.8$ mm;
5%16 × 1%16 × 61732 in
Remote controller $150 \times 50 \times 49.5$ mm;
5 ²⁹ / ₃₂ × 1 ³¹ / ₃₂ × 1 ¹⁵ / ₁₆ in
• Weight (approx.) :
Main unit 1.2kg; 2.6lb
Remote controller 220g; 7.7oz

TRANSMITTER							
Modulation system	:						
FM	Variable reactance modulation						
Digital	Quadrature modulation						
Output power	: 10W/1W (Selectable)						
Max. frequency deviation	n: ±5.0kHz (FM)						
Spurious emissions	: Less than –50dB						
Microphone connecto	r: 8-pin modular jack (600Ω)						

(600Ω) iector : 8-p modular jac

RECEIVER

 Intermediate frequency 	/:					
FM, Digital voice	243.95MHz/31.05MHz/450kHz					
	(1st/2nd/3rd)					
Data	243.95MHz/10.7MHz (1st/2nd)					
Sensitivity (FM: at 12dB	3 SINAD, Digital: at BER 1×10 ⁻²) :					
FM	Less than 0.18µV					
Digital Voice	Less than 0.35µV					
Data	Less than 1.58µV					
 Squelch sensitivity 	: Less than 0.18µV (FM, threshold)					
 Selectivity (typical) 	:					
FM	More than 12kHz/6dB					
	Less than 30kHz/60dB					
Digital voice	More than 6kHz/6dB					
	Less than 18kHz/50dB					
Data	More than 140kHz/6dB					
ation.	Less than 520kHz/40dB					

- Spurious and image rejection :
 - , More than 50dB
- · Audio output power : More than 2.0W at 10% distortion (at 13.8V DC) with 8Ω load
- Ext. speaker connector : 2-conductor 3.5 (d) mm (¹/₈")/8Ω
- Supplied accessories: (* Optional for some versions.)
- Microphone • External speaker, SP-22
- Ethernet cable coupler • DC power cable
- USB extension cable (1.5 m; 4.9 ft)
 Ethernet cable (3 m; 9.8 ft) Controller software CD
- Remote controller (RC-24)*
 Mounting bracket kit for RC-24*
- Mic extension cable (2.5 m; 8.2 ft)*
- System requirements for controller software:
- Microsoft® Windows® 98/98SE/Me/2000/XP USB Port • Ethernet port (for DD mode operation)

Applicable U.S. Military Specifications

	-	•					
MIL 810 C		MIL 810 D		MIL 810 E		MIL 810 F	
Method	Proc.	Method	Proc.	Method	Proc.	Method	Proc.
500.1	I	500.2	I, II	500.3	I, II	500.4	I, II
501.1	I	501.2	I, II	501.3	I, II	501.4	I, II
502.1	Ι	502.2	I, II	502.3	I, II	502.4-3	I, II
503.1	I	503.2	I	503.3	I	503.4	Ι
505.1	I	505.2	I	505.3	Ι	505.4	I
507.1	I, II	507.2	II, III	507.3	II, III	507.4	-
509.1	Ι	509.2	I	509.3	I	509.4	-
510.1	Ι	510.2	I	510.3	Ι	510.4	Ι
514.2	VIII, X	514.3	I	514.4	I	514.5	Ι
516.2	I, II, V	516.3	I, IV	516.4	I, IV	516.5	I, IV
	Method 500.1 501.1 502.1 503.1 505.1 507.1 509.1 510.1 514.2	Method Proc. 500.1 I 501.1 I 502.1 I 503.1 I 505.1 I 507.1 I, II 509.1 I 509.1 I 509.1 I	Method Proc. Method 500.1 1 500.2 501.1 1 501.2 502.1 1 502.2 503.1 1 503.2 505.1 1 505.2 505.1 1 505.2 507.1 1,11 507.2 509.1 1 509.2 510.1 510.2 509.2 510.1 1 510.2 514.2 VIII, X 514.3	Method Proc. Method Proc. 500.1 1 500.2 I, II 501.1 I 501.2 I, II 502.1 I 503.2 I, II 503.1 I 503.2 I 505.1 I 505.2 I 507.1 I, II 507.2 I, III 509.1 I 509.2 I 507.1 I, II 509.2 I 509.1 I 509.2 I 507.1 I, III 509.2 I 509.1 I 509.2 I 501.1 509.2 I I 501.1 I 500.2 I 501.1 I 510.3 I 504.2 VIII, X 514.3 I	Method Proc. Method Proc. Method 500.1 1 500.2 1, II 501.3 500.3 500.3 500.3 500.3 1 502.2 1, II 501.3 503.3 1 503.2 1 503.3 503.3 1 503.2 1 503.3 503.3 1 505.2 1 503.3 505.1 1 505.2 1 505.3 505.1 1 505.2 1 505.3 507.1 1, II 507.3 507.1 1, II 507.3 507.1 1, II 507.3 507.1 507.2 1, III 507.3 509.1 507.2 1, III 507.3 509.3 509.2 1 509.3 501.3 510.3 510.3 510.3 510.3 510.3 514.2 1 514.2 1 514.2 1 514.4 514.4 514.4 514.4 514.4 514.4 514.4 514.4 514.4 514.4 514.4 514.4 514.4 514.4	Method Proc. Method Proc. 500.1 1 500.2 I, II 500.3 I, II 501.1 1 501.2 I, II 501.3 I, II 502.1 1 502.2 I, III 502.3 I, II 503.1 1 503.2 I 503.3 I 505.1 1 502.2 I 505.3 I 507.1 1, II 507.2 I 505.3 I 507.1 1 507.2 I 505.3 I 509.1 1 507.2 I 509.3 I 509.1 1 507.2 I 509.3 I 509.1 1 507.2 I 509.3 I 509.1 1 509.2 I 509.3 I 510.1 1 510.2 I 510.3 I 514.2 VIII, X 514.3 I 514.4 I	Method Proc. Method Method Method Proc. Method Method

All stated specifications are subject to change without notice or obligation.

OPTIONS



• HM-154 HAND MICROPHONE Regular hand microphone.







 SP-10 EXTERNAL SPEAKER



EXTERNAL SPEAKER Same as supplied

All trademarks are the properties of their respective holders.

D-STAR REPEATER

(10GHz Microwave

<u>.</u>

Ö۰ • 同同

⊙• • **0**

link repeater)

Datas

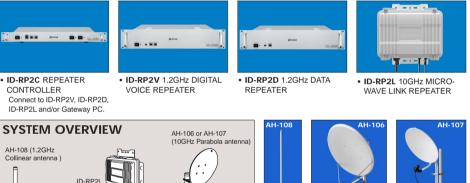
ID-RP2C (Repeater controller)

ID-RP2V (1.2GHz Digital voice repeater)

DATA

ID-RP2D (1.2GHz Data repeater)

Ö.Ö.



▲ AH-106 PARABOLA ANTENNA (ø800mm) AH-107 PARABOLA ANTENNA (ø450mm) For connection with ID-RP2L. Max. communication range AH-106 to AH-106: 20km AH-106 to AH-107: 12km, AH-107 to AH-107: 8km * Ranges may differ depending on weather condi-

tions, etc. All ranges are approximation. AH-108 1 2GHz COLLINEAR ANTENNA

Built-in dual collinear antennas for ID-RP2V and ID-RP2D.

• UR-2 ANTENNA CANCELLER For connection ID-RP2V and ID-RP2C with AH-108.

Count on us!

ICOM INC. 1-1-32, Kamiminami, Hirano-ku, Osaka 547-0003, Japan Phone: +81 (06) 6793 5302 Fax: +81 (06) 6793 0013 URL: http://www.icom.co.ip/world/index.html

UR-2

Icom America Inc.

versions

2380 116th Avenue NE, Bellevue, WA 98004, U.S.A. Phone : +1 (425) 454-8155 Fax : +1 (425) 454-1509 E-mail : sales@icomamerica.com URL : http://www.icomamerica.com

Icom Canada

Glenwood Centre #150-6165 Highway 17, Delta, B.C., V4K 5B8, Canada Phone : +1 (604) 952-4266 :+1 (604) 952-0090 Fax -mail : info@icomcanada.com RL : http://www.icomcanada.com URL

Icom (Australia) Pty. Ltd.

A.B.N. 88 006 092 575 Unit 1 / 103 Garden Road, Clayton VIC 3168 Australia Phone : +61 (03) 9549 7500 Fax : +61 (03) 9549 7505 E-mail : sales@icom.net.au URL : http://www.icom.net.au

Icom New Zealand

146A Harris Road, East Tamaki Auckland, New Zealand Phone : +64 (09) 274 4062 Fax : +64 (09) 274 4708 E-mail : inquiries@icom.co.nz URL : http://www.icom.co.nz

Icom (Europe) GmbH

Communication Equipment Himmelgeister Str. 100, D-40225 Düsseldorf, Germany Phone : +49 (0211) 346047 Fax : +49 (0211) 333639 E-mail : info@icomeurope.com URL : http://www.icomeurope. : http://www.icomeurope.com

Icom Spain S.L.

Crta. de Gracia a Manresa Km. 14,750 08190 Sant Cugat del Valles Barcelona, Spain Phone : +34 (93) 590 26 70 Fax :+34 (93) 589 04 46 E-mail : icom@icomspain.com URL : http://www.icomspain.com Fax URL

Icom (UK) Ltd.

Unit 9, Sea St., Herne Bay, Kent, CT6 8LD, U.K. Phone : +44 (01227) 741741 Fax : +44 (01227) 741742 E-mail : info@icomuk.co.uk URL : http://www.icomuk.co.uk

Icom France S.a

Zac de la Plaine, 1, Rue Brindejonc des Moulinais BP 5804, 31505 Toulouse Cedex, France Phone : +33 (5) 61 36 03 03 Fax : +33 (5) 61 36 03 00 E-mail : icom@icom-france.com URL : http://www.icom-france.com

Icom Polska

Sopot, 3 maja 54, Poland Phone : +48 (58) 550 7135 : +48 (58) 551 0484 Fax E-mail : icompolska@icompolska.com.pl URL : http://www.icompolska.com.pl

Asia Icom Inc.

GF No. 68, Sec. 1 Cheng-Teh Road, Taipei, Taiwan, R.O.C. Phone: +886 (02) 2559 1899 Fax :+886 (02) 2559 1874 E-mail : sales@asia-icom.com URL : http://www.asia-icom.com

Internet

Beijing Icom Ltd.

10C07, Long Silver Mansion, No.88, Yong Ding Road, Haidian District, Beijing, 100039, China Phone : +86 (010) 5889 5391/5392/5393 Fax : +86 (010) 5889 5395 E-mail : biicom@biicom.com URL : http://www.bjicom.com



Your local distributor/dealer:

