



VHF AND UHF REPEATERS

IC-FR5100 (25W VHF REPEATER)

IC-FR5100H (50W VHF REPEATER)

IC-FR6100 (25W UHF REPEATER)

IC-FR6100H (50W UHF REPEATER)

iDAS™
ICOM DIGITAL ADVANCED SYSTEM



Dual mode Double Channels

IDAS digital/
Analogue FM

Two RF modules
in one unit (option)

50W full duty
(IC-FR5100H/FR6100H)

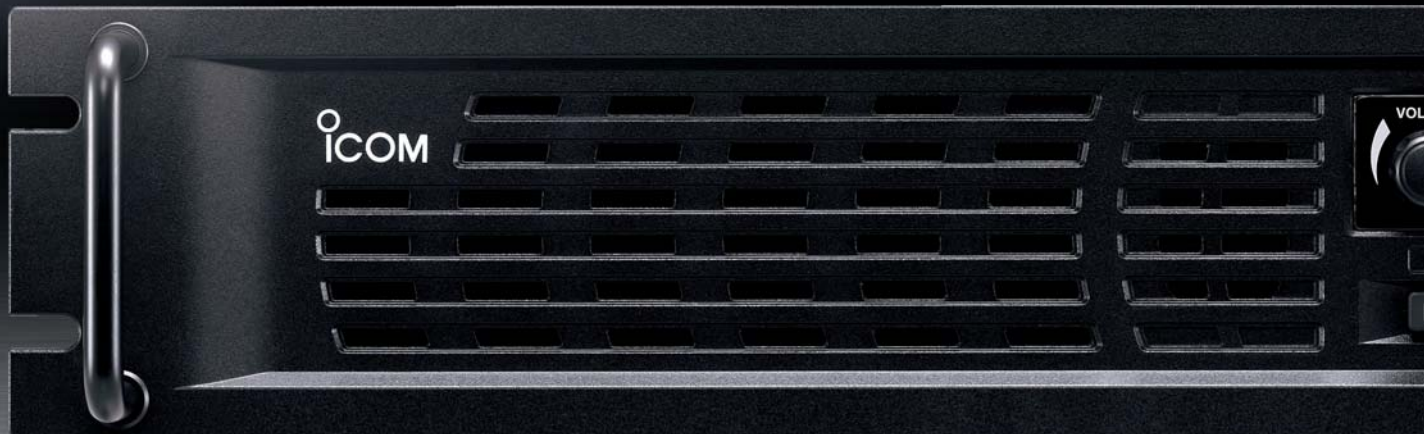
5-Tone, DTMF
CTCSS, DTCS

2U height
rackmount

32 Ch memory,
dot-matrix LCD



Value, Performance and



19-inch rack mount, 2U height low profile design

The IC-FR5100/H series uses only 2U height. This low profile configuration allows you to stack multiple units in an industry standard 19-inch rack and provides great space efficiency.

Two RF modules in one unit

The IC-FR5100 series has an internal space for installing another RF unit. Two RF modules* can be installed and can be programmed and operated independently.

* Optional UR-FR5100/UR-FR6100 required.



Two RF units can be installed inside. (Left side is an option.)

100% duty cycle operation

Employing a high performance power amplifier, the IC-FR5100 series provides a reliable 100% duty cycle operation at 25W output. When higher power is needed, the IC-FR5100H series provides a powerful 50W output with 100% duty cycle.

(* Ambient temperature: 25°C)



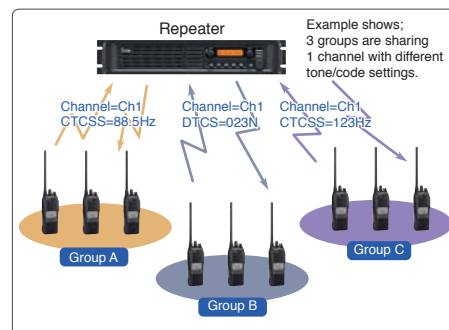
IC-FR5100H series has built-in power amplifier unit.

32 channel capacity and 5 programmable buttons

The 12-digit dot-matrix display, 5 programmable buttons, 32 memory channels and internal speaker allow you to use the repeater as a simple base station or to check repeater activity.

Multiple CTCSS, DTCS tone and digital channel code decode

The IC-FR5100/H series decodes multiple CTCSS and DTCS as well as digital channel codes on a per channel basis (up to 16 tones/codes) and downlinks the received signal with a specified tone/code. This function is useful for sharing a channel with multiple groups and provides quiet stand-by while using other groups.



D-SUB 25-pin accessory connector

The IC-FR5100/H series has a programmable D-SUB 25-pin accessory connector for connecting various trunking controllers or external remote control devices. Also, modulation /demodulation signals can be input/output from the D-SUB connector.

Superior receiver performance

The IC-FR5100/H series has the class leading receiver performance of selectivity and intermodulation rejection. It improves the quality of the repeater service even under congested band conditions.

Voice scrambler

The built-in inversion type* voice scrambler provides secure conversation as standard. When a more secure system is required, the 32 code non-rolling type voice scrambler UT-109R* and 1020 code rolling type UT-110R* are available as an option. In IDAS digital mode, a 15-bit encryption key provides over 32,000 scrambling codes.

* These voice scramblers (inversion type, UT-109R and UT-110R) are available with analogue mode only.

Built-in audio compander*

The built-in audio compander improves the signal to noise ratio and provide clear audio. * Analogue mode only.

Other features

- PTT priority setting (Local Mic., external PTT or repeater operation)
- 5-Tone and DTMF encoder/decoder*
- CW ID transmitter
- Wide/narrow (12.5/25, 12.5/20kHz) channel spacing programmable*
- Normal and priority scan
- Convenient key assign stickers supplied
- Quick and easy programming from a PC
- Beat cancel capability
- Low voltage alert*

* For analogue mode only

Flexibility: All Standard



VHF Repeaters

IC-FR5100 (25W version)

IC-FR5100H (50W version)

UHF Repeaters

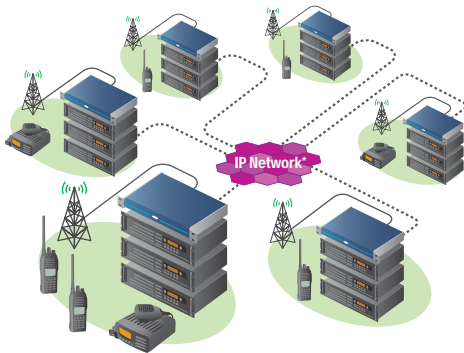
IC-FR6100 (25W version)

IC-FR6100H (50W version)



The IC-FR5100/H series is ready for dPMR™ Mode 3 digital trunking and Mode 2 conventional mode.

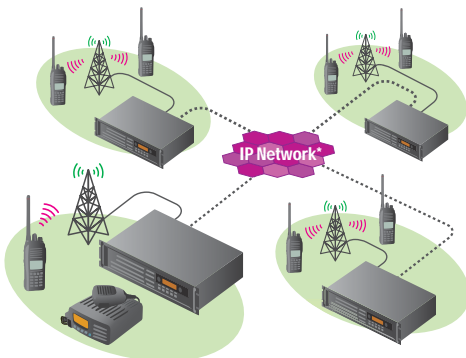
dPMR™ Mode 3 Digital Trunking



- Unique migration solution from MPT to dPMR
- Up to 1,024 sites and 500,000 subscribers
- Web based system administration
- Scalability to nationwide networks*
- Web based AVL and Dispatcher*
- POTS / SIP phone connectivity*

* These services will be released throughout 2012.

dPMR™ Mode 2 Conventional Repeater Mode



- Up to 16 IDAS repeater sites connection over an IP network.

NXDN™ Simple Trunking



- NXDN Type-D distributed channel trunking system
- Up to 30 channels per site
- Up to 2,000 individual IDs and up to 2,000 group IDs (in single site system)

* NXDN version radios and repeater system required.

*1 Note: Private IP Network or VPN Tunnels through the Internet with Static endpoints. Please see the IDAS brochure for details.

SPECIFICATIONS

	IC-FR5100/IC-FR5100H	IC-FR6100/IC-FR6100H
GENERAL		
Frequency coverage	136–174MHz	400–470MHz
Number of channels	Max 32 channels	
Type of emission	16K0F3E, 14K0F3E, 8K50F3E, 4K00F1E/F1D/F3E	
Channel spacing	6.25/12.5/20/25kHz	
PLL channel step	2.5/3.125kHz	
Power supply requirement	13.2V DC nominal	
Current drain (approx.)		
Tx IC-FR5100/FR6100	8A (25W)	7A (25W)
IC-FR5100H/FR6100H	17A (50W)	18A (50W)
Rx Max. audio Standby	1.9A	
	500mA, 400mA (FAN, LCD backlight off)	
Antenna impedance	50Ω (Type-N x 2)	
Operating temperature range	-25°C to +55°C	
Dimensions (WxHxD) (Projections not included)	483x88x260mm	
Weight (approx.)		
IC-FR5100/FR6100	5.6kg	
IC-FR5100H/FR6100H	8.1kg	

TRANSMITTER		
Output power (at 13.2V DC)		
IC-FR5100/FR6100	25W (100% duty cycle)	
IC-FR5100H/FR6100H	50W (100% duty cycle)	
Max. frequency deviation	±5.0kHz/±4.0kHz/±2.5kHz (W/M/N)	
Frequency stability	±0.2kHz ±0.5kHz	
Spurious emissions	0.25μW (≤1GHz) 1.0μW (>1GHz)	
Audio harmonic distortion	1% typ. (40% deviation)	
Intermodulation attenuation	40dB min.	
FSK error	5% Max. (Digital)	
Ext. microphone impedance	600Ω (8-pin modular)	

RECEIVER		
Sensitivity (at 20dB SINAD) (at 5% BER)	-4dBμV typ. (emf) -6dBμV typ. (emf)	
Adjacent channel selectivity	86/83/77dB typ. (W/M/N) 67dB typ. (Digital)	80/78/72dB typ. (W/M/N) 63dB typ. (Digital)
Spurious response rejection	86dB typ. (W/M/N) 95dBμV typ. (emf, digital)	80dB typ. (W/M/N) 90dBμV typ. (emf, digital)
Intermodulation	73dB typ. (W/M/N) 76dBμV typ. (emf, digital)	72dB typ. (W/M/N) 74dBμV typ. (emf, digital)
Audio output power	3.5W min. (at 5% distortion, 4Ω load)	
Ext. speaker connector	2-conductor 3.5 (d) mm (1/8")/4Ω	

Measurements made in accordance with EN 300 086 (analogue) & EN 301 166 (digital). All stated specifications are subject to change without notice or obligation.

Applicable U.S. Military Specifications & IP Rating

Standard	MIL 810 F	
	Method	Procedure
High Temperature	501.4	I, II
Low Temperature	502.4	I, II
Dust Blowing	510.4	I
Vibration	514.5	I
Shock	516.5	I, IV

Also meets equivalent MIL-STD-810-C, -D and -E.


Supplied Accessories

- DC power cable
- Handle kit
- Key assign stickers

OPTIONS

HAND MICROPHONE HM-152 	DESKTOP MICROPHONE SM-26 	EXTERNAL SPEAKER SP-35 
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POWER AMPLIFIERS
UR-PA5000: 136–174MHz,
UR-PA6000: 400–470MHz
 50W 100% duty




CHANNEL MODULES
UR-FR5100: 136–174MHz, 25W
UR-FR6100: 400–470MHz, 25W




UR-PA5000 CONNECTION CABLES
OPC-2202: dPMR Mode 2 connection cable
OPC-2203: dPMR Mode 3 connection cable




dPMR Mode 2 NETWORK CONTROLLER
UC-FR5000 (#12)



VOICE SCRAMBLER UNITS
 (For analog mode)



REAR VIEW



Installation space for optional unit.
(UR-PA5000/PA6000 is already installed for IC-FR5100H/FR6100H)

RX Antenna Connector

TX Antenna Connector

External Speaker Connector

D-SUB 25-Pin Accessory Connector

To DC Power Receptacle

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Icom Inc. 1-1-32, Kami-minami, Hirano-ku, Osaka 547-0003, Japan Phone: +81 (06) 6793 5302 Fax: +81 (06) 6793 0013 www.icom.co.jp/world **Count on us!**

Icom America Inc.

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 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 (UK) Ltd.

Blacksale House, Altria Park,
 Herne Bay, Kent, CT6 6GZ, U.K.
 Phone: +44 (0) 1227 741741
 Fax: +44 (0) 1227 741742
 E-mail: info@icomuk.co.uk
 URL: http://www.icomuk.co.uk

Asia Icom Inc.

6F 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

Your local distributor/dealer:

Icom Canada

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

Icom (Europe) GmbH

Communication Equipment
 Auf der Krautweide 24
 65812 Bad Soden am Taunus, Germany
 Phone: +49 (6196) 76685-0
 Fax: +49 (6196) 76685-50
 E-mail: info@icom-europe.com
 URL: http://www.icomeurope.com

Icom France s.a.s.

Zac de la Plaine,
 1 Rue Brindejonn des Moulinais, BP 45804,
 31505 Toulouse Cedex 5, 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

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: bjicom@bjicom.com
 URL: http://www.bjicom.com

Icom (Australia) Pty. Ltd.

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 Spain S.L.

Ctra. Rubi, No. 88 "Edificio Can Castanyer"
 Bajos A 08174, 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

Icom Polska

81-850 Sopot, ul. 3 Maja 54, Poland
 Phone: +48 (58) 550 7135
 Fax: +48 (58) 551 0484
 E-mail: icompolska@icompolska.com.pl
 URL: http://www.icompolska.com.pl