



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)



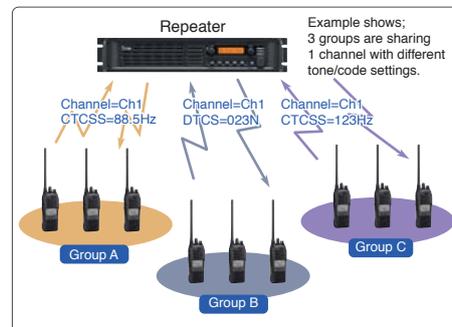
IC-FR5100H series has built-in power amplifier unit.

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

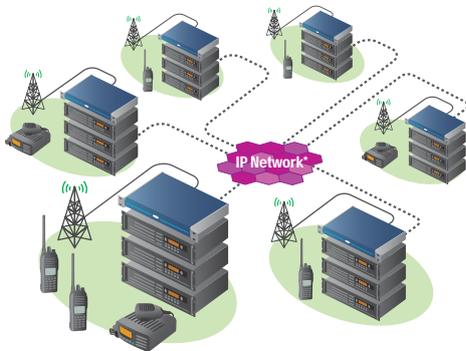
IC-FR6100 (25W version)

IC-FR6100H (50W version)



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

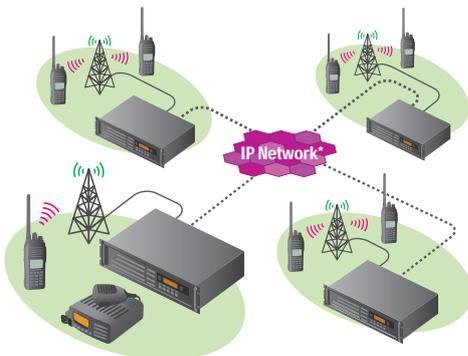
dPMR™ Mode 3 Digital Trunking



- 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 (W×H×D) (Projections not included)	483×88×260mm	
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 
---	---	---

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



OPC-2202 **OPC-2203**

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

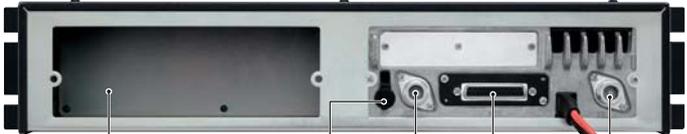


VOICE SCRAMBLER UNITS
 (For analog mode)



UT-109R **UT-110R**

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

Icom, Icom Inc. and the Icom logo are registered trademarks of Icom Incorporated (Japan) in the United States, the United Kingdom, Germany, France, Spain, Russia and/or other countries. IDAS and IDAS logo are trademarks of Icom Incorporated. dPMR is a trademark of the dPMR MoU Association. NXDN is a trademark of Icom Incorporated and JVC KENWOOD Corporation. All other trademarks are the properties of their respective holders.