IFC™ Series 70/140MHz-to L-Band Up/Down Converter Rack Mount System

The IRT Technologies Intelligent Frequency Converters (IFC™) shape the next-generation satellite transmission with its breakthrough leading edge technology, state of the art design, and unprecedented reliability with 3 years warranty for this product line!

IRT Technologies IFC™ series may combine up to 4 embedded converters in a single 1RU shelf with extensive monitor and control via front panel, serial ports EIA232/EIA485 and Ethernet.

Features Best in Class RF characteristic, Flexible reference with autosensing can lock to external 5/10 MHz reference or utilize built-in high stability reference oscillator.

Key Features

- Superior RF performance:
  - Phase noise 15dB better than IESS308/309
  - In Band Spurious below -60dBc
  - Superior Gain flatness
- Super wide frequency band 950 to 2150 MHz
- True RMS power detector for both IF and RF power
- Synthesizer frequency step of 1kHz with optional 1 Hz step size
- User Friendly front panel with menu driven display
- 5 /10MHz external reference Autosense
- Single, dual, triple and quad band frequency converters in a single 1RU chassis (1.75" H x 19" W x 19" D)
- Full featured M&C Interface via RS-232 serial console, packet protocol RS-485 and user friendly HTTP based GUI and SNMP:
  - Frequency control with 1kH step
  - 25dB Gain Control (Optional 30 dB)
  - Input and output power detectors
  - Automated level control (ALC) mode optional
- 1:N Redundant ready
- IF and RF monitoring optional
- 48VDC isolated power supply optional
- 10MHz and DC injected into L-Band ports optional
- Built in BUC DC via IF power supply optional

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IFC™ Series 70/140MHz - to L-Band Up/Down Converter
Rack Mount System Specification

	UPCONVERTER	*DOWNCONVERTER*
IF Characteristics	**IF Input**	**IF Output**
Frequency Range:		
70MHz IF	70MHz +/-18MHz	
140MHz IF	140MHz +/-60MHz	
Output Power @P1dB	N/A	5dBm min
Max Input Level	10dBm	N/A
Impedance	50Ohm/75Ohm optional	
Return Loss	-18dB max	
RF Characteristics	**RF Output**	**RF Input**
Frequency Range:	950-2150MHz	950-2150MHz
Frequency Step	1kHz/1Hz	
Output Power @P1dB	15dBm min	N/A
2 tone IMD at 0dBm Pout	-40dBc max	N/A
Gain Control	25dB range 0.1dB step	
10MHz Reference Out	Multiplexed at RF out port optional	
Impedance	50Ohm/75Ohm optional	
Return Loss	1.5	
Max Input Level	N/A Operational up to 0dBm	
	No Damage up to 10dBm	
Transfer Characteristics		
Conversion Gain	30 dB (Optional 35 dB)	
Gain Adjustment	25dB with 0.1dB step(Optional 30 dB)	
Gain Flatness 70MHz IF:		
over full L- band:	+/-1.0 max	
over 36MHz:	+/-0.5 max	
Phase noise: @ 100Hz	-70dBc	
@ 1kHz	-90dBc	
@ 10kHz	-95dBc	
@ 100kHz	-95dBc	
@ 1MHz	-115dBc	
In Band Spurious	<-60dBc	
Reference		
Frequency	10MHz 5MHz Optional	
Int./Ext. Autosense	Int. clock locks on external reference	
Frequency Stability		
Short term	0.01 ppb	
Aging	+/-100ppb per year	
Phase Noise @ 10Hz	-125dBc/Hz	
@ 100Hz	-140dBc/Hz	
@ 1kHz	-150dBc/Hz	
@ 10kHz	-155dBc/Hz	
Power Level at L-Band Port	+5dBm+/-2dB Optional	

Monitor & Control Features	
Interfaces:	
Serial - EIA485	DB9 Connector rear panel
Serial - EIA232	RJ45 or DB9 Connector rear panel
10/100 base-T Ethernet	RJ45 Connector rear panel
Alarm and Control	DB9 Connector rear panel
Redundant protection interface	HD15 Connector rear panel
Controls:	
Gain Control	via Serial, Ethernet, Front panel
Uplink/Downlink Freq Control	via Serial, Ethernet, Front panel
Mute Control	via Serial, Ethernet, Fr. panel, Red Int.
Local/Remote toggle	Serial(Ethernet)/Front panel toggle
Clear Alarm	via Serial, Ethernet, Front panel
Indicators:	
Uplink/Downlink Frequency	via Serial, Ethernet, Front panel
Gain Status	via Serial, Ethernet, Front panel
IF&RF Power Detect	via Serial, Ethernet, Front panel
Temperature	via Serial, Ethernet, Front panel
Summary Alarm Status	via Serial, Ethernet, Front panel, Redundancy Interface
Mute Status	via Serial, Ethernet, Front panel, Redundancy Interface
Power Supply	
Input Voltage	90 to 265VAC 50/60Hz PFC
	48VDC Isolated Optional
Mechanical	
Width	19" Rack
Height	1RU
Depth	19"
Color	Metallic
Cooling	Forced air
IF/RF Connectors	
IF	BNC (other options available)
RF	N-type (other options available)
10MHz Ref In/Out	BNC (other options available)
IF Monitoring (Optional)	BNC (other options available)
L-Band Monitoring (Optional)	N-type (other options available)
Environmental	
Operating temperature	0 to 60 deg.C
Storage Temperature	-40 to +85 deg.C
Humidity	0 to 95% (non-condensing)

*Contact us for detailed ordering information at sales@irttechnologies.com

Rev.03

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