

Up Converter IF 70/140MHz to Ku Band  
 Down Converter Ku Band to IF 70/140MHz  
 Ku(14-14.50) / Kue(13.75-14.50), Indoor Unit



Up to 4 converter modules in a single 1RU shelf



Our Frequency Converters offer a new best in class for the Industry. Not only for ease of operation, but lowest cost too. They embody embedded redundancy options and extensive monitor and control via: front panel, serial ports (EIA232/EIA485) and Ethernet

There may be up to 4 converter modules in a single 1RU shelf, and they can be configured for various applications and bands. The reference with autosensing can lock to an external 5/10 MHz reference or utilize the built-in high stability, reference oscillator.

Hot-swappable shelf redundancy option and extensive monitor and control via front panel, serial ports EIA232/EIA485 and Ethernet

#### Key Features

- Superior RF performance:
  - Phase noise >10dB better than IESS308/309
  - In-band Spurious -60dBc
  - Superior Gain flatness
- Switchable LO option - standard and Extended Ku-Band in one unit
- User Friendly front panel with menu driven display
- 5/10MHz external reference with 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 serial EIA485, EIA232, Ethernet:
  - 20dB Gain Control
  - 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

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#### Order Examples: RUC-IF-Kue-Nf-AC-IDU-i13

Description: (Upconverter, IF Band (70M±18MHz) to Ku extended(13.75-14.50GHz), N Female Connector, 90 to 265VAC, Indoor Unit)

#### Order Examples: RDC-Kue-IF-Nf-AC-IDU-i13

Description: (Downconverter, Ku extended(13.75-14.50GHz) to IF Band (70M±18MHz), N Female Connector, 90 to 265VAC, Indoor Unit)

Additional Options: ( IF 140±18MHz) - Ku(14-14.50) - Type BNC Female – DC 48V - (or ER10M External Reference5MHz ER5M or 10MHz)

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\*Please specify number of 4 frequency converters and combinations at time of order.

## Up and Down Converter Family Rack Mount: IF 70/140MHz to Ku Band Ku(14-14.50) / Kue(13.75-14.50), Indoor Unit

	UPCONVERTER	DOWNCONVERTER
<b>IF CHARACTERISTICS</b>	<b>IF Input</b>	<b>IF Output</b>
Frequency Range:		
70MHz IF	70MHz +/-18MHz	
140MHz IF	140MHz +/-36MHz	
Output Power @P1dB	N/A	5dBm min
Max Input Level	10dBm	N/A
Impedance	50Ohm/75Ohm optional	
Return Loss	-18dB max	
<b>RF CHARACTERISTICS</b>	<b>RF Output</b>	<b>RF Input</b>
Frequency Range: Opt. 1	14-14.5GHz	10.7-11.7GHz
Opt. 2	13.75-14.5GHz	11.7-12.75GHz
Frequency Step	1kHz/1Hz	
Output Power @P1dB	15dBm min	N/A
2 tone IMD at 0dBm Pout	-36dBc max	N/A
Gain Control	20dB range 0.1dB step	
10MHz Ref Out (Optional)	Separate Connector	
Impedance	50Ohm/75Ohm optional	
Return Loss	1.5	
Max Input Level	N/A	Operational up to 0dBm
	No Damage up to 10dBm	
<b>TRANSFER CHARACTERISTICS</b>		
Conversion Gain	30 dB (Optional 35 dB)	
Gain Adjustment	20dB with 0.1dB step(Optional 25 dB)	
Gain Flatness 70MHz IF:	+/-0.5dB	
over full C- band:	+/-1.0 max	
over 36MHz:	+/-0.5 max	
Phase noise: @ 100Hz	-68dBc	
@ 1kHz	-78dBc	
@ 10kHz	-88dBc	
@ 100kHz	-95dBc	
@ 1MHz	-115dBc	
In Band Spurious	<-60dBc	
<b>REFERENCE</b>		
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 at 10M out port	+5dBm+/-2dB Optional	

<b>MONITOR &amp; CONTROL FEATURES</b>		
<b>Interfaces:</b>		
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	
<b>Controls:</b>		
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	
<b>Indicators:</b>		
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	
<b>POWER SUPPLY</b>		
Input Voltage	90 to 265VAC 50/60Hz PFC	
	48VDC Isolated Optional	
<b>MECHANICAL</b>		
Width	19" Rack	
Height	1RU	
Depth	20"	
Color	Metallic	
Cooling	Forced air	
<b>IF/RF CONNECTORS</b>		
	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)
Ku-Band Monitoring (Optional)		N-type (other options available)
<b>ENVIRONMENTAL</b>		
Operating temperature	0 to 60 °C	
Storage Temperature	-40 to +85 °C	
Humidity	0 to 95% (non-condensing)	