

Up Converter, IF 70/140MHz
To Ku Band 13.75-14.50GHz
ER 10M



Up to 4 converter modules in a single 1RU shelf

The **RUC-IF-Ku-N-ER10M-IDU-i13** intelligent frequency converters (IFC) shape the next-generation satellite transmission with its breakthrough leading edge technology, state of the art design, and unprecedented reliability.

It can 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 10dB better than IESS308/309
 - * P1dB of 50dBm; Psat up to 51dBm
 - * Spurious below -60dBc
 - * Wide dynamic range of Gain Control
- **Switchable LO option - standard and Extended Ku-Band in one unit**
- **Our Combining method allows to reach extremely high power density-up to 125W Psat in 12.25"x8"x6.75" only!**
- **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 serial EIA485, EIA232 and Ethernet:**
 - o 20dB Gain Control dynamic range
 - o Input and output power detectors
 - o Automated level control (ALC) mode available
- **1:N Redundant ready**
- **IF and RF monitoring optional**
- **48VDC isolated power supply optional**

Order Examples: RUC-(70M±18MHz)-Ku(13.75-14.50)-Nf-ER10M-IDU-i13

Description: (Up Converter, IF Band (70M±18MHz) to Ku(13.75-14.50GHz), N Female Connector, 10MHz External Reference)

Additional Options: **140M±18MHz)** **Ku(13.75-14.50) (output)** **Type BNC Female**

RUC-IF-70M-Ku-N-ER10M-IDU-i13

Specifications may be subject to change

07/24/14

WORLD HQ: 1702L Meridian Ave. Suite 127, San Jose, Ca 95125, U.S.A.

Tel: (408) 266-7404

FAX: (408) 266-4483

WEB: www.raditek.com

E-mail: sales@raditek.com

Block Up Converter, IF 70/140MHz To Ku Band 13.75-14.50GHz Nf and BNC(Optional) Connector, 10MHz External Reference

Parameter		BUC IF- to Ku-Band Block-Up-Converter Specification					
IF Characteristics		70MHz IF			140MHz IF		
Frequency Range		70MHz+/-18MHz			140MHz+/-36MHz		
Max Input Level		10dBm					
Impedance		50 Ohm/75 Ohm optional					
Return Loss		>-18dB max					
RF Characteristics							
Frequency Range		13.75-14.5GHz					
Frequency step		1kHz					
Output Power at P1dB		10dBm min					
2 tone IMD at 0dBm Pout		-40dBc max					
Impedance		50 Ohm					
Return Loss		-18dB max					
Transfer Characteristics							
Conversion Gain		35dB					
Gain Adjustment		25dB with 0.1dB step					
Gain flatness over IF band		+/-0.5 dB over 36MHz			+/-0.75 over 140MHz		
Gain flatness over Ku-Band		+/-1dB over full band					
Phase Noise	- 55dBc/Hz @ 10Hz	-68dBc/Hz @100Hz	-78dBc/Hz @1kHz	-88dBc/Hz @10kHz	-95dBc/Hz @100kHz	-115dBc/Hz @1MHz	
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			+/-100 ppb per year		
Phase Noise		-125dBc/Hz @ 10Hz	-140dBc/Hz @ 100Hz	-150dBc/Hz @ 1kHz	-155dBc/Hz @ 10kHz		
Monitor & Control Features							
Interfaces		Serial - EIA485			DB9 Connector rear panel		
		Serial - EIA232			RJ45 or DB9 Front Panel		
		10/100 base-T Ethernet			RJ45 rear panel		
		Alarm and Control			DB9 Connector rear panel		
		Redundant protection interface			HD15 Connector rear panel		
Controls		Indicators:					
Frequency Control	via Serial, Ethernet, Front panel			LO Status	via Serial, Ethernet, Front panel		
Gain Control	via Serial, Ethernet, Front panel			Lock Status	via Serial, Ethernet, Front panel		
LO Select	via Serial, Ethernet, Front panel			Gain Status	via Serial, Ethernet, Front panel		
Mute Control	via Serial, Ethernet, Front panel, Red Int.			IF Power Detect	via Serial, Ethernet, Front panel		
Local/Remote toggle	Serial(Ethernet)/Front panel toggle			RF Power Detect	via Serial, Ethernet, Front panel		
Clear Alarm	via Serial, Ethernet, Front panel			Temperature	via Serial, Ethernet, Front panel		
	Summary Alarm Status			via Serial, Ethernet, Front panel, Red Int			
	Mute Status			via Serial, Ethernet, Front panel, Red Int			
Power Supply							
Input Voltage	90 to 265VAC 50/60Hz PFC			-48VDC Optional			
Environmental		Operating temperature		Storage Temperature		Cooling	
		0 to 60 deg.C		-40 to +85 deg.C		Humidity	
				Width		0 to 95% (non-condensing)	
				Height		IF/RF Connectors	
				Depth		IF	
		Color		Metallic		RF	
				10MHz Ref In/Out		BNC (other options available)	

Block Up Converter, IF 70/140MHz To Ku Band 13.75-14.50GHz Nf and BNC(Optional) Connector, 10MHz External Reference

Additional Specifications		
Transfer Characteristics		
Type		no spectral inversion
Noise Figure		< 15 dB
Gain stability		< ± 0.5 dB/day
Carrier Related Spurious		-60 dBc
Non-Carrier Related Spurious		< -50 dBc
IMD		-55 dBc at -10 dBm o/p power
AM/PM Conversion		< 0.2 Deg/dB at -10 dBm o/p power
Image Rejection		> 60 dB
Group Delay	Linear	<0.04 ns/MHz
	Parabolic	<0.02 ns/MHz ²
	Ripple	<2 ns
Frequency Synthesizer Characteristics		
Resolution		<125 KHz Step Size
Optional	Monitoring Port	LO Out of lock Alarm
		RMS Detector
		RMS Detector
1) Operator Interface		
A Remote Monitoring and Control Interface		RS-232/485 Serial Port, Ethernet
B Remote Features Include :		Frequency Control, Gain Control, channel status, signal strength monitoring, and reference offset control etc.
C Front Panel Controls& Indications:.		LCD Menu-driven display should provide indication & control of Frequency, Input Attenuator, Status etc
D LED Indications:		Power, Ext. Ref., Remote, RF On, LO Fault, Signal Fault etc.
2)Connection		
a. RF Input/output		N
b. IF input/output		BNC
c. Ext REF in		
d. Ext REF Out		
e. RS232/485 Interface		D sub 9-pin
f. Ethernet		RJ-45
3) Front/Rear Panel Monitor Ports		Yes quote optional
4) Size		19" Rack Mounted
5) Primary Power		90-260 VAC, 50/60Hz
6) Operating temp		0 to 60 Deg C
7) Warranty		1 year