



50 YEARS IN TECHNOLOGY INNOVATION

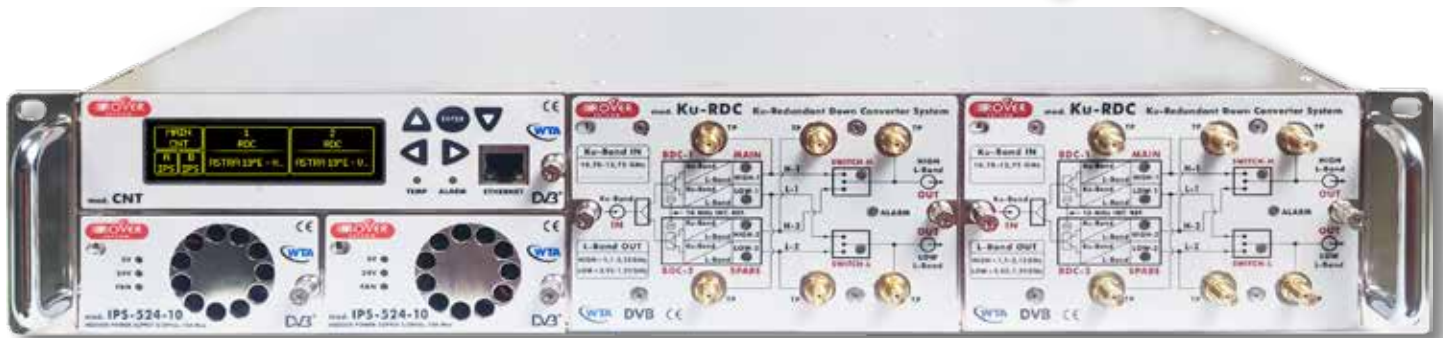
PRELIMINARY

# HOT SWAP REDUNDANT DUAL Ku-DOWN CONVERTER SYSTEM

Dual band: L 10,7 - 11,7 & H 11,7 - 12,75 GHz • Dual polarity: Vert. & Horiz.

BAND  
REDUNDANT  
DUAL DOWN  
CONVERTER

## mod. Ku-RDC System



### MAIN BENEFITS

- RF Switch protected against Mains Power Failure
- Simultaneously Supply of: Low & High Band and Vert & Horiz Polarity via RF coax or opt. Optic Fiber TX
- Fully redundant PSU and BDCs
- Front panel functional Block diagram with related LED & RF monitor Port
- Completely Hot swap, with minimum service interruption, thanks to front plug-in modules

### MAIN FEATURES

- All Sat Band supported: S, X, Ku, Ka on request
- Very Low Phase noise and high frequency accuracy, high P1 dB and IP3
- Raccomended for very low Symbol Rate carriers
- Suggested for Professional applications, Teleports, Broadcast & Military
- Display, SNMP, WEB Controller, with Alarms & Logger

**INNOVATIVE  
PERFORMANCE**

for: SYSTEM INTEGRATOR,  
TELEPORT BROADCASTER,  
CABLE NETWORK, GOVERNMENT  
& MILITARY COMMUNICATIONS



1972 > 2022 >>

50 YEARS OF TECHNOLOGY INNOVATION

# HOT SWAP DUAL REDUNDANT KU-DOWN CONVERTER SYSTEM

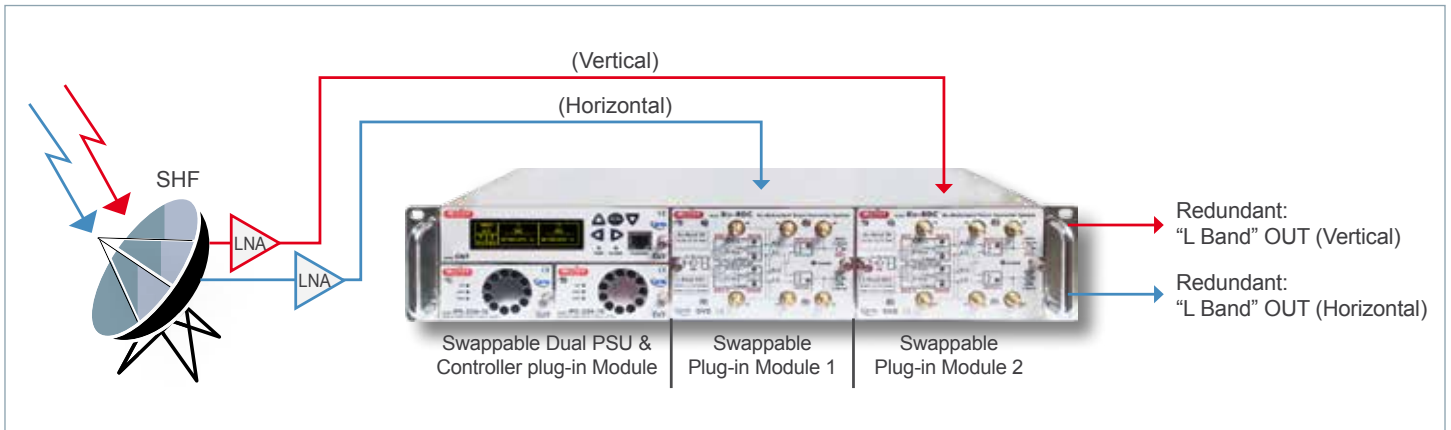
## HOW THE "Ku-RDC SYSTEM" WORKS

The "Ku RDC System" is a compact and comprehensively Down Converter System, fully redundant, fully remote controllable, can supply simultaneously Low & High Band, Vertical & Horizontal (or Circular Left & Right) polarity via RF COAX or opt. Optic Fiber.

The RF Redundancy Switch are protected against power failure thanks to Ultracap Technology.

Thanks to 5 front plug-in module, all parts can be HOT SWAPPED with minimum services interruptions, each module has an independent Microcontroller and Memory to clone the New Module installed.

The "Ku RDC System" is controllable via Local display or remotely via WEB GUI & SNMP; through N. 2 Ethernet port and thanks to N. 2 SFP Slot can be connected/controlled also via fiber optic.



## Ku-RDC System WEB Control

### Ku-RDC System < user defined >

Slot 1 : SAT NAME...

Username: rover (admin)  
IP Address: 192.168.1.11  
Date: 14/01/2020  
Time: 16:14:30

Log-Out

**Administration**

- General Settings
- Network Settings
- Alarm Settings
- SNMP Settings
- Device info

**Modules**

Slot1 : ASTRA 19 vertical  
Slot2 : <User defined>

Home page

**LNA & BDC Powering**

LNA Powering: OFF  ON

BDC1 Current: 300 mA OFF  ON  
 Min Range: 0 mA BDC Min Current Alarm Threshold Adj.: 250 mA Max Range: 800 mA Fine Tune

BDC2 Current: 300 mA OFF  ON  
 Min Range: 0 mA BDC Min Current Alarm Threshold Adj.: 250 mA Max Range: 800 mA Fine Tune

**HIGH BAND**

AUTO  MANUAL

H-1 MAIN H-2 SPARE

**REDUNDANT SWITCH MODE**

AUTO  MANUAL

L-1 MAIN L-2 SPARE

**BDC 1 - (MAIN) RF Power & Alarms**

H-1 (RMS Pwr OUT): 20 dBm  
 L-1 (RMS Pwr OUT): 20 dBm

**BDC 2 - (SPARE) RF Power & Alarms**

H-2 (RMS Pwr OUT): 20 dBm  
 L-2 (RMS Pwr OUT): 20 dBm

**L-BAND OUTPUTS RF Power & Alarms**

HIGH (RMS Pwr OUT): 20 dBm  
 LOW (RMS Pwr OUT): 20 dBm

# "Ku-RDC System" TECHNICAL SPECIFICATIONS

## SHF Ku-Band SPECIFICATIONS:

- Dual Band BDC Input = L Band 10,7/11,75 GHz  
H Band 11,75/12,50 GHz
- Dual Band BDC Output = L Band 950/1950 MHz  
H Band 1100/2150 MHz
- Dual Band BDC L.O. Freq. = L Band 9,75 GHz  
H Band 10,60 GHz
- Dual Band BDC L.O. = Reference = Built-in
- Dual Band BDC L.O. Leakage = - 60 dBm at SMA INPUT
- Dual Band BDC L.O. accuracy =  $\pm 10$  KHz typ. at  $-30/+70^\circ$  C
- Dual Band BDC Noise Figure at 12 GHz = 17 dB typ. (20 max)
- Dual Band BDC gain = 10-30 dB internal Adjust, flat  $\pm 3$  dB
- SHF Ku Input connector = SMA (f) 50 ohm (Rear Panel)
- Dual Band BDC L.O. Phase Noise = 90 dB typ. (80 min) at 10 KHz

## RF L-Band SPECIFICATIONS (Plug 1 & 2):

- Output freq. Redundant Low Band = 950/1950 MHz
- Output freq. Redundant High Band = 1100/2150 MHz
- Output R.L. = 18 dB typ. (16 min) SMA connector
- Output RF Connectors = SMA (f)
- Output Optical connector = SC/APC (optional)
- Front panel Test Point = N.3 for Low Band & N.3 for High Band (-20 dB)

## LNA POWER CONTROL:

- LNA Powering ON/OFF Max current 800 mA
- LED = green OK, RED = short circuit alarm
- Alarm indication via LED or dry contact

## DRY CONTACT ALARM BOARD:

- CONNECTOR = SUB-D9 Male
- CONTACT LOAD = 65 V 400 mA
- A & B MAINS PSU = One defective
- LNB = DC Short Circuit
- RF POWER SENSING = RF too Low or no RF Signal

## REDUNDANT HOT-SWAP POWER SUPPLY:

- N. 2 AC MAINS PSU = 110-240 VAC (with 2 separate receptacle for 2 separate Power LINE)
- AC POWER CONSUMPTION = < 25 VA
- N. 1 EXT DC PSU = 48 V D.C. (optional)

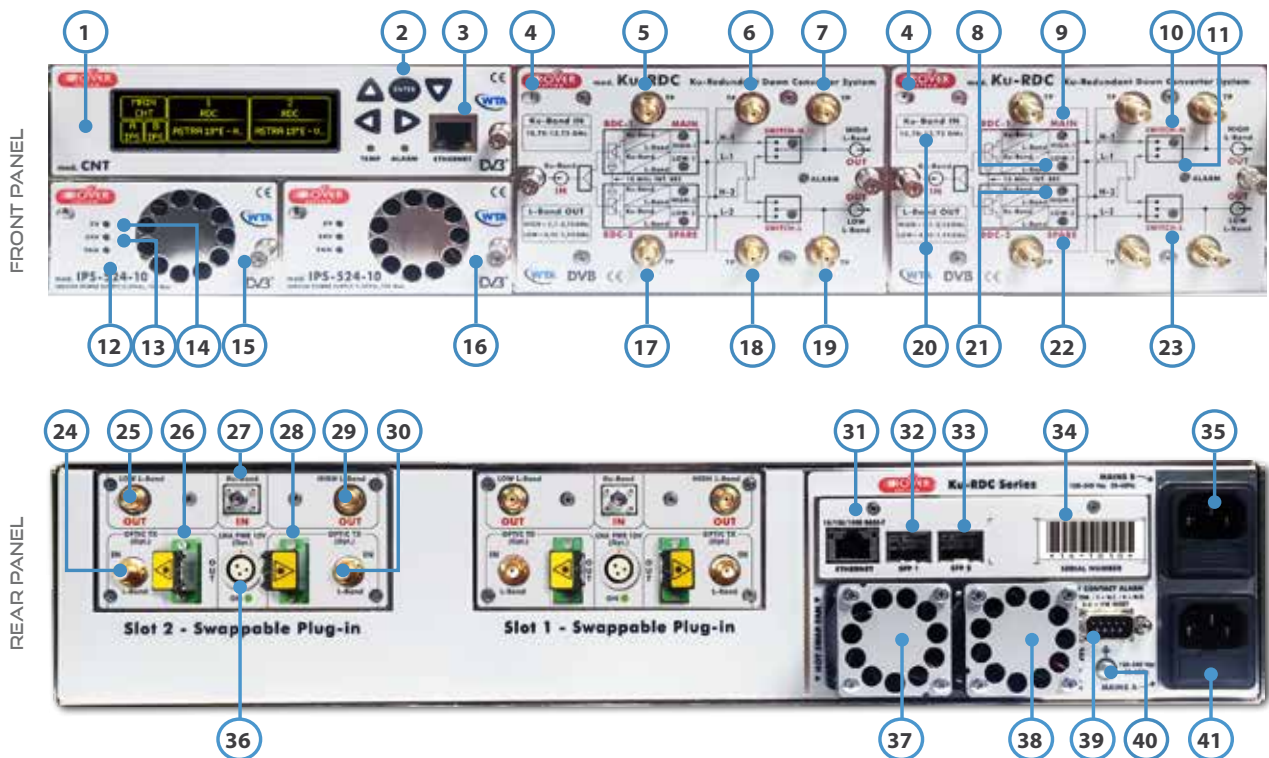
## GENERAL SPECIFICATIONS:

- CASE = 19" 2U Rack (43 cm deep)
- NET WEIGHT = from 8 to 12 Kg related to the IN/OUT modules
- SAFETY = EN 50 083-1 and EN 60 950.
- ENVIRONMENT:
  - Temperature range:  $-30^\circ / +55^\circ$  (max  $60^\circ$ )
  - Umidity 95%
- EMC = EN 50 083-2

## PERIFERALS & CONTROL:

- Local control = with display and front LAN port
- PC control = via front LAN port
- Remote control = via rear LAN port through WEB & SNMP
- Fiber Remote Control via rear SFP Module
- LAN Port = 10-100-1.000 BASE-T

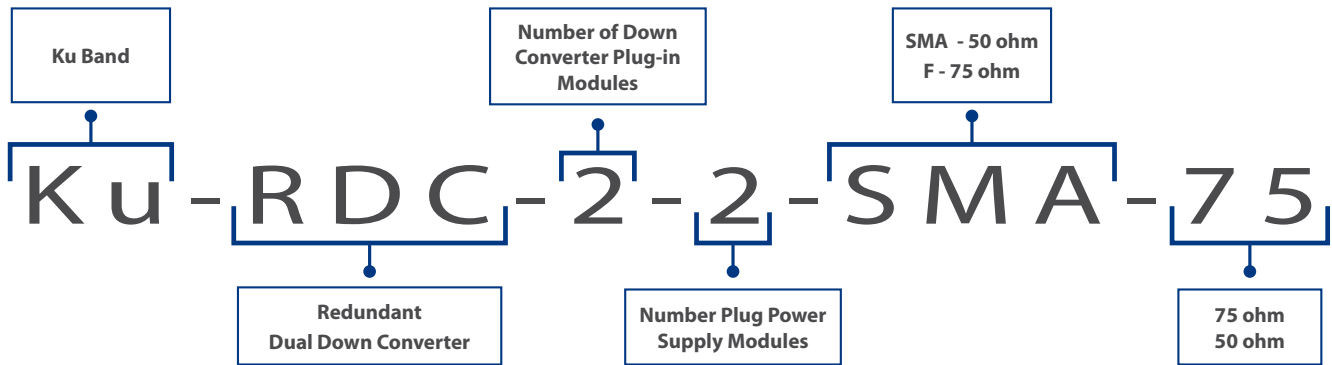
## Ku-RDC System Front & Rear panels DESCRIPTION



- |                               |                                |                                     |   |
|-------------------------------|--------------------------------|-------------------------------------|---|
| 1. CNT, controller module     | 12. FAN LED                    | 23. A3 LED switching state          | 33. SFP2 Slot, Ethernet Fiber Optic       |
| 2. Keyboard                   | 13. 24 V LED                   | 24. L-Band Input to B-2 Optic TX    | 34. Serial Number label                   |
| 3. Front Ethernet port        | 14. 5 V LED                    | 25. L-Band B2 coax Out              | 35. Main B, receptacle                    |
| 4. Down Converter Modules 1&2 | 15. Plug-in PSU Module A       | 26. L-Band Optic B-2 Out            | 36. Ku-Band LNA 15 Vd.c. Fisher Connector |
| 5. A1, L-Band T.P. (SMA/f)    | 16. Plug-in PSU Module B       | 27. Ku-Band Input (vert. Pol.)      | 37. Chassis FAN                           |
| 6. B1, L-Band T.P. (SMA/f)    | 17. B2, L-Band T.P. (SMA/f)    | 28. L-Band Optic A-2 Out            | 38. Chassis FAN                           |
| 7. A out, L-Band T.P. (SMA/f) | 18. A2, L-Band T.P. (SMA/f)    | 29. L-Band A-2 coax Out             | 39. SUB-D, dry contact alarm              |
| 8. B1 LED Signal presence     | 19. B out, L-Band T.P. (SMA/f) | 30. L-Band Input to A-2 Optic TX    | 40. Ground screw                          |
| 9. A1 LED Signal presence     | 20. Signal legend              | 31. Rear Ethernet port              | 41. Mains A, receptacle                   |
| 10. A3 LED switching state    | 21. A2 LED Signal presence     | 32. SFP1 Slot, Ethernet Fiber Optic |   |
| 11. Alarm Down Converter 2    | 22. B2 LED Signal presence     |                                     |   |



## ORDERING MODEL/CODE EXPLANATIONS



## COMPLETE CHASSIS ORDERING MODEL / CODE EXAMPLE

MODEL	DESCRIPTION	APPLICATION
<b>Ku-RDC-1-2-SMA-50</b>	Hot Swap Redundant Down converter System with one Plug-In Down converter, double Power supply SMA 50 ohm Output connectors	SAT/Teleport & Broadcast
<b>Ku-RDC-2-2-SMA-50</b>	Hot Swap Redundant Down converter System with two Plug-In Down converter, double Power supply SMA 50 ohm Output connectors	SAT/Teleport & Broadcast

## ROVER SATCOM PRODUCTS

### TCM

#### TRANSPONDERS CONVERTER MATRIX

250-2350 MHz, 16 Inputs, 48 Transponders  
Redundant Hot-Swap PSU, Web GUI & SNMP,  
opt. Optical Out



### KU-RDC SYSTEM

#### DUAL REDUNDANT DOWN CONVERTER SYSTEM

250-2350 MHz, 2 Hot Swap RF modules,  
RF switch protected against Power Failure,  
Display, SNMP, WEB controller, Alarms & Logger



### TMD

#### TRANSPONDERS MONITORING & DEMODULATOR

250-2350 MHz, 8 Inputs, 24 Transponders  
Redundant Hot-Swap PSU, Digital  
Measurements, Web GUI & SNMP, opt. Optical Out



### RLP

#### LIGHTNING PROTECTION

5-3000 MHz, up to 12 Feeds



### RAS-2

#### MANAGED WIDEBAND ACTIVE SPLITTER/COMBINER

1-4 RF In & 4-32 RF Out, 700-3000 MHz, RF  
Monitor Port & RF Power Meas., Redundant  
Hot-Swap PSU, Web GUI & SNMP, opt. Optical In



### LPI-10-V-F

#### LNB POWERING INSERTER

5-3000 MHz, 10 times individual switchable  
LNB Powering (Voltage & Tone), Redundant  
Hot-Swap PSU, Dry Contact Alarms



### RAL

#### REDUNDANT L-BAND LINE AMPLIFIER

1 To 4 Hot Swap Amplifier Module, Low  
Noise, High Gain & High Power, Display,  
SNMP, WEB Controller, Alarms & Logger



### ROF 20-OU

#### RF OVER FIBER LINKS

20 Slots for Tx- or Rx-Modules,  
1+1, +1, 3+1 & 4+1  
Path Redundancy,  
Redundant Hot-Swap PSU,  
local Display, SNMP,  
WEB Controller,  
Alarms & Logger

V. 3,1 26-5-2021



Product  
made in Italy by  
Rover Broadcast.com

CERTIFICATES N°  
1263 ISO 9001  
1264 ISO 14001  
1265 ISO 45001



Specifications and features are subject to change without notice.

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