



## IFC SERIES C-BAND Rack Mount Up/Down Converter



The SpacePath Communications 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 warrant for this product line!

The SpacePath Communications 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 characteristics, Flexible reference with autosensing can lock to external 5/10 MHz reference or utilize built-in high stability reference oscillator.

### Options

- RF and L-Band monitoring
- 48VDC isolated power supply

### Features

- Superior RF performance:
  - Phase noise 8dB better than IESS308/309
  - In Band Spurious below -60dBc
  - Superior Gain flatness
- Available in all C-Band options—standard, extended, Palapa and Insat
- 5 / 10 MHz external reference Autosense
- Single, dual, triple and quad band frequency converters in a single 1RU chassis (4.4cms H x 48cm W x 48cm D)
- User Friendly front panel with menu driven display
- Full featured M&C Interface via RS-232 serial console, packet protocol RS-485 and user friendly HTTP based GUI and SNMP:
  - 20dB Gain Control
  - Input and output power detectors
  - Automated level control (ALC) mode optional
- 1:N Redundant ready



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## IFC™ Series C-Band Up/Down Converter Rack Mount System Specification

| Parameter   | Up-Converter  |                | Down-Converter |                    |                                  |
|---|---|----------------|----------------|--------------------|----------------------------------|
| RF Performance  | Standard C/Extended C   | Palapa/Insat   | C-Band         | Insat Band         |                                  |
| RF Frequency Range-Available in / switched                | 5.85-6.425GHz   | 6.425-7.025GHz | 3.4-4.2GHz     | 4.5-4.8GHz         |                                  |
| IF Frequency Range  | 950-1825MHz   | 950-1550MHz    | 950-1750MHz    | 950-1250MHz        |                                  |
| LO Frequency  | 4.9GHz  | 5.475GHz       | 5.15GHz        | 5.75GHz            |                                  |
| Input Return Loss   | 16dB  |                | 18dB           | 16dB               |                                  |
| Output Return Loss  | 18dB  |                | 16dB           | 16dB               |                                  |
| Noise Figure  | 5dB Max   |                |                |                    |                                  |
| Conversion  | Single Conversion; non-inverting  |                | inverting      |                    |                                  |
| Output Power at 1dB compression point                     | 10dBm min   |                |                |                    |                                  |
| Conversion Gain   | 35dB  |                |                |                    |                                  |
| Gain Flatness   | +/- 1dB typ., +/-1.5dB max over full band; +/- 0.5dB max over any 40MHz                       |                |                |                    |                                  |
| Gain Stability  | +/- 1.5dB over full temperature range   |                |                |                    |                                  |
| Gain Control  | 20dB min  |                |                |                    |                                  |
| External Reference Frequency                              | 10MHz   |                |                |                    |                                  |
| External Reference Required Phase Noise                   | -130dBc/Hz @ 100Hz; -140dBc/Hz @ 1kHz; -150dBc/Hz @ 10kHz; -155dBc/Hz @ 100kHz                |                |                |                    |                                  |
| Phase Noise   | -70dBc/Hz @ 100Hz; -80dBc/Hz @ 1kHz; -90dBc/Hz @ 10kHz; -95dBc/Hz @ 100kHz; -115dBc/Hz @ 1MHz |                |                |                    |                                  |
| Spurious:   | Signal Related*   | -55dBc         |                |                    |                                  |
|   | Non-Signal Related  | -60dBc         |                |                    |                                  |
| *For Up Extended C-Band signal related Spurious is -50dBc |   |                |                |                    |                                  |
| Monitor & Control Features                                |   |                |                |                    |                                  |
| <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   |                |                |                    |                                  |
| LO Select – Standard/Extended C-Band Toggle               | via Serial, Ethernet, Front Panel   |                |                |                    |                                  |
| Mute Control  | via Serial, Ethernet, Front Panel, Redundancy Interface                                       |                |                |                    |                                  |
| Local / Remote Toggle                                     | via Serial, Ethernet, Front Panel   |                |                |                    |                                  |
| Clear Alarm   | Via Serial, Ethernet, Front Panel   |                |                |                    |                                  |
| <b>Indicators:</b>  |   |                |                |                    |                                  |
| Lock Status   | 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  |   | Mechanical     |                | IF/RF Connectors   |                                  |
| Input Voltage   | 90-265VAC 50/60Hz PFC   | Width          | 19" Rack       | IF                 | N-type (other options available) |
|   | 48VDC Isolated Optional   | Height         | 1RU            | RF                 | N-type                           |
| <b>Environmental</b>                                      |   | Depth          | 19"            | 10MHz Ref In / Out | BNC (other options available)    |
| Operating Temperature                                     | 0 to 60 deg. C  | Cooling        | Forced air     |                    |                                  |
| Storage Temperature                                       | -40 to +85 deg. C   |                |                |                    |                                  |