

FCS500T Series



Features

- Two hot swappable frequency converters in 1U
- 70 MHz or 140 MHz IF
- 125 kHz step size
- Cost effective solution
- 1:1 Redundancy (option)
- 950 – 1750 MHz or 950 – 2150 MHz L-Band
- Meets or exceeds IESS 308/309 requirements
- Internal/External 10 MHz Reference with Autosensing
- High linearity
- Front panel control (local) via buttons, display and LEDs
- Full remote control via RS232, RS485 or optional Ethernet interface port
- Down-converters with inverted or non-inverted output spectrum available

Overview

The Advantech Wireless HP range of dual channel converters uses the latest technology in conversion, giving two independent conversion chains in 1 RU package, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

The 1RU chassis contains two hot swappable drawers (trays) designed for easy removal and replacement. Each drawer includes independent frequency converter, power supply and 10 MHz reference source modules.

The spectral purity, low phase noise and stability exceed the requirements of all major international satellite network operators.

The flexible and comprehensive monitor and control features on the HP converter ensure that it will fit into any network management system architecture. The user-friendly front panel or the RS485 remote interface will provide full set-up and fault monitoring facilities. The RS232 will provide the Monitor and Control functions via a PC and will also allow for software downloading.

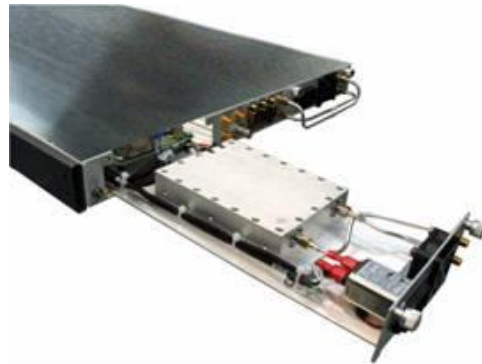
The converter is fully synthesized with the PLL oscillator either locked to a highly stable internal 10 MHz reference or if the external 10 MHz reference signal with proper power level is present, the PLL will automatically lock to the external reference.

Options

- Ethernet port and SNMP Interface
- Low Group Delay
- 10 MHz Reference for LNB via L-Band, on down converters.

| Up-Converters (non-inverting) | | | |
|--------------------------------------|-----------------|--------------|----------------|
| Model | Type | IF Input | RF Output |
| ARUD-70L-T | dual with trays | 70 ± 18 MHz | 950 – 1750 MHz |
| ARUD-140L-T | | 140 ± 36 MHz | |
| ARUD-70LX-T | dual with trays | 70 ± 20 MHz | 950 – 2150 MHz |
| ARUD-140LX-T | | 140 ± 40 MHz | |

| Down-Converters (non-inverting/inverting) | | | |
|--|-----------------|----------------|--------------|
| Model | Type | RF Input | IF Output |
| ARDD-L70-T | dual with trays | 950 – 1750 MHz | 70 ± 18 MHz |
| ARDD-L140-T | | | 140 ± 36 MHz |
| ARDD-LX70-T | dual with trays | 950 – 2150 MHz | 70 ± 20 MHz |
| ARDD-LX140-T | | | 140 ± 40 MHz |



Application

The HP range of converters is particularly suited for use in VSAT, SCPC Networks, SNG, DVB-RCS and Hub systems where compact appliance is required. This makes them an ideal choice for large earth stations requiring cost effective solutions for frequency conversion. The lightweight, rugged and compact design also ensures that the HP converter provides the ideal solution for mobile truck or flyaway DSNG systems. With fully welded aluminum chassis and robust modular internal construction the converter can even meet the demands of military installations. The HP range of converters provides an industry leading MTBF of over 120,000 hours.

70/140 MHz to L-Band or L-Band to 70/140 MHz Dual Channel with Trays Converter

Technical Specifications

| Up-Converter | | Down-Converter | |
|---|---|---|---|
| IF Input | | RF Input | |
| Frequency range | (See table on front page) | Frequency range | (See table on front page) |
| Impedance | 50 Ω standard (optional 75 Ω) | Impedance | 50 Ω |
| Input Connector | SMA (f) | Input Connector | SMA (f) |
| Return loss | 18 dB | Return loss | 16 dB |
| RF Output | | IF Output | |
| Frequency range | (See table on front page) | Frequency range | (See table on front page) |
| Output power (P1dB) | +5 dBm | Output power (P1dB) | +5 dBm |
| IMD3 (two tone) | -40 dBc max @ -5 dBm output | Output Connector | SMA (f) <i>other options available</i> |
| Output connector | SMA (f) <i>other options available</i> | Connector Impedance | 50 Ω standard (optional 75 Ω) |
| Connector Impedance | 50 Ω | Return Loss | 18 dB |
| Return loss | 16 dB | | |
| Transfer Characteristics | | Transfer Characteristics | |
| Conversion Gain | 20 dB @ max gain setting | Conversion Gain | 30 dB min @ max gain setting |
| Gain adjustment | 20 dB (0.1 dB step size) | Gain adjustment | 20 dB (0.1 dB step size) |
| Gain flatness | 1.0 dB p-p max. 40 MHz 1.5 dB p-p max. 80 MHz | Gain flatness | 1.0 dB p-p max. 40 MHz 1.5 dB p-p max. 80 MHz |
| Gain stability | ± 0.25 dB max. /24 hours ± 1 dB over temp. range | Gain stability | ± 0.25 dB max. / 24 hours ± 1 dB over temp. range |
| Spurious | -55 dBc carrier related @ -5 dBm < -60 dBm non-carrier related | Spurious | -55 dBc @ -5 dBm output |
| Group delay (over 40 MHz) | 10 -15 ns p-p | Group delay (over 40 MHz) | 10 -15 ns p-p |
| Group delay (with optional group delay equalizer) | Linear 0.03 ns/MHz Parabolic 0.01 ns/MHz ² Ripple 1 ns p-p | Group delay (with optional group delay equalizer) | Linear 0.03 ns/MHz Parabolic 0.01 ns/MHz ² Ripple 1 ns p-p |
| | | Image rejection | 50 dB |
| | | Noise Figure | 20 dB |
| Phase noise | Meets or Exceeds IESS 308/309 | Phase noise | Meets or Exceeds IESS 308/309 |
| Synthesizer step size | 125k kHz | Synthesizer step size | 125 kHz |
| Reference | | Mechanical | |
| External Reference Freq. | 10 MHz \pm 2 Hz, 0 \pm 3 dBm | Dimensions | Width 19" (482.6 mm) |
| External Reference Input | BNC (f) <i>other options available</i> | | Height 1U 1.75" (44.5 mm) |
| Internal reference stability | $\pm 2 \times 10^{-10}$ / day | | Depth 24" (609.6 mm) |
| Aging | $\pm 5 \times 10^{-8}$ / year | Cooling | Forced-Air |
| Environmental | | Power Supply | |
| Operational | 0°C to +50°C standard | Voltage | 90 – 265 VAC (47 – 63 Hz) |
| Storage | -55°C to +85°C | Power | 50W |
| Humidity | Non-condensing | Connector | IEC 603320 10A |
| Altitude | 3,000m AMSL | | |
| | | Monitor and Control | |
| | | RS 485 | DB9 |
| | | RS 232 | DB9 |
| | | Discrete | DB9 |
| | | Ethernet (option) | RJ45 F (option) |
| | | Buttons, display & LEDs | via Front Panel |

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