



# Extended L-Band (950 – 2150 MHz) to Fixed L-Band (1100 MHz) Single Channel Converter



FCS500x Series

## Features

- 1RU chassis containing integrated conversion modules, L-Band interface module, power supply, 10 MHz reference oscillator and M&C board
- Converts super extended L-Band (950 – 2150 MHz) to fixed L-Band (1100 MHz)
- Remote controllable DC and 10MHz supply to LNB with undercurrent alarm
- Fully compliant with 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 Ethernet interface port

## Overview

The HP range of Advantech Wireless frequency converters uses the latest technology in conversion, local and remote control thus providing the ultimate in performance and user friendly operation at a very competitive price.

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.

## Operating Bands

L-band Converter		
Model	RF Input	IF Output
ARWF-LX	950 – 2150 MHz	1100 MHz

## Application

The Front End ARWF-LX unit can be used for SCPC, DAMA and TDMA as well as full transponder HDTV and traditional analog TV. 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.

## Options

- Redundant Ready for 1:N (N=1..12)
- Rack mount set of slides.

## Redundancy

For customers requiring redundancy Advantech Wireless can provide 1:1, 1:2 and 1:N (up to 12) solutions. The 1:N redundancy is provided by the additional external 1:N Controller and Switch Panel. Each Switch Panel can handle up to four (4) converter units. A 1:12 system requires one Controller panel plus three Switch Panels. A complete 1:12 complete system occupies a space of 17U. For more details please see information in a datasheet for the 1:N Switch Controller.



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Technical Specifications			
<b>L-band Converter</b>			
<b>RF Input</b>			
Frequency range	950 – 2150 MHz		
Impedance	50 $\Omega$		
Input Connector	Type N (f)		
Return loss	16 dB		
<b>IF Output</b>			
Frequency range	1100 MHz		
Output power (P1dB)	+5 dBm		
Output connector	Type N (f)		
Connector Impedance	50 $\Omega$ (optional 75 $\Omega$ )		
Return loss	16 dB		
<b>Transfer Characteristics</b>			
Conversion Gain	30 dB min @ max gain setting		
Gain adjustment range	40 dB (-10.0 dB...+30.0 dB); 0.1 dB step size		
Gain flatness	1.8 dB p-p, max, over 72 MHz;		1.2 dB p-p, max, over 34 MHz
Gain stability	$\pm 0.25$ dB max. / 24 hours;		$\pm 1$ dB over temp. range
In Band Spurious	-55 dBc @ Pin = -35 dBm, G = 30 dB <i>Signal Dependent</i> -60 dBm, max, @ G = 30 dB <i>Signal Independent</i>		
Phase noise	-60 dBc/Hz @ 100 Hz offset -70 dBc/Hz @ 1 kHz offset		-80 dBc/Hz @ 10 kHz offset -90 dBc/Hz @ 100 kHz offset
<b>Reference</b>		<b>Mechanical</b>	
External Reference Freq.	10 MHz $\pm$ 0.1 Hz, 0 $\pm$ 3 dBm	Dimensions	Width 19" (482.6 mm)
External Reference Input	BNC (f)		Height 1U 1.75" (44.5 mm)
Internal reference Stability	$\pm 2 \times 10^{-8}$ over 0°C to +50°C		Depth 22" (558.8 mm)
Internal reference Aging	$\pm 2 \times 10^{-10}$ / day; $\pm 5 \times 10^{-8}$ / year	Cooling	Forced-Air
<b>Environmental</b>		<b>Power Supply</b>	
Operational	0°C to +50°C standard	Voltage	90 – 265 VAC (47 – 63 Hz)
Storage	-55°C to +85°C	Power	75W (typical)
Humidity	Non-condensing	Connector	IEC 603320 10A
Altitude	3,000m AMSL		
<b>Monitor and Control</b>		<b>LNB Reference and DC Supply</b>	
RS 485	DB9 (F)	LNB 10 MHz reference supply over L Band input	0 dBm $\pm$ 3 dB
RS 232	DB9 (F)		
Relay	DB9 (F)	LNB DC supply over RF input	18 V $\pm$ 0.25 V 350 mA, nominal (500 mA, max)
Ethernet	RJ45 (F)		
Buttons, display & LEDs	via Front Panel		

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