

## iSPAN® 36702 Wireless Base Station AMC

*High Performance for Next Generation Wireless Access Networks*

### FEATURES

AMC.0 R2.0 Mid-size or Full-Size AdvancedMC

Wintegra WinPath3 Network Processor integrated with Xilinx Virtex-6 FPGA

GE (AMC.2) plus PCI-E x1 (AMC.1) and/or sRIO to carrier

Front panel I/O options:

- SFP Modules configurable for CPRI / OBSAI or GE
- Synchronous Ethernet Support
- SMB microcoaxial for GPS 1pps signal input/output

Deterministic processing provides low latency processing of intensive operations like the 1ms TTI processing for the LTE scheduler

Scalable solutions by integrating multiple iSPAN 36702s and adding external processing capacity such as the iSPAN 36CA / 36MC2

Rich Ecosystem of software tools and applications available through Interphase Partners



### APPLICATIONS

**LTE / WiMAX**

**Pico / Microcells**

**Enterprise Femtocells**

#### Wireless Base Station on a Card

The iSPAN 36702 Wireless Base Station AdvancedMC™ (AMC) supports the complete functions of a wireless base station (with the exception of the radio) in a very small footprint. It is designed for use in 4G Networks including the LTE eNodeB as well as next generation WiMAX base stations. It features three Optical Interfaces on the front panel for CPRI/OBSAI Baseband interfaces or Gigabit Ethernet (GE) interfaces and AMC connector support for a combination of Gigabit Ethernet, Serial RapidIO™, and PCI-Express™ links.

#### High Performance Platform - Multicore Processor and FPGA

The iSPAN 36702 utilizes the Wintegra™ WinPath3™ Network Processor with multiple Protocol Processing engines and MIPS processor cores for base station control. The WinPath3 supports L2/L3 wireless protocols aligned with the latest 3GPP requirements and provides traffic policing and shaping, protocol conversion, and switching capability at 1/3 the power of general purpose multi-core solutions. The iSPAN 36702 also utilizes the Virtex®-6 FPGA scalable programmable PHY hardware from Xilinx® with footprint compatibility across device family. This combination of the WinPath 3 and the Virtex-6 offers:

- Scalable RLC/MAC software from Wintegra:
  - From 1.25 -> 20MHz per sector
  - From 1 -> 3 sectors per device
  - Layer 2 PDCP/RoHC implementation
- Backhaul and air interface security: support for AES, 3DES, HMAC-SHA1, HMAC-MD3, SNOW-3G
- Flexible, 'software-defined' PHY silicon from Xilinx with LTE Downlink and Uplink
  - Low latency, lower power & high compute bandwidth processing
- MAC/PHY API interface for tightly coupled L1/L2 solution

#### Accelerated Development / Lower cost of ownership

- PHY, L1/L2 Software and Hardware Reference Designs ► "fast-start" development
- Common Platform for complete portfolio ► Develop Pico to Multi sector Micro cell solutions which can be reutilized in Macro cells as well.

#### Road to 4G

The iSPAN 36702 is designed as an entry point for the development of next generation wireless micro, pico, and enterprise femto cell base stations. Interphase can adapt extend this solution to meet your needs in AMC or in any other form factor required.



## iSPAN 36702 Wireless Base Station AMC

### External Interfaces

- 3 SFP receptacles on the front panel configurable as CPRI / OBSAI Remote Radio Head interfaces or GE
- Synchronous Ethernet Support
- SMB micro-coaxial for GPS 1pps signal input/output
- Micro-B USB receptacle for UART interface

### AdvancedMC Connectivity

- Gigabit Ethernet
  - AMC.2 Type E2, ports 0,1 GE
  - AMC.2 Type 4 GE or AMC.2 Type 5 XAU10 GE ports 8-11
  - Two additional GE interfaces on port 19, 20
- PCI-Express
  - AMC.1 Type 1 PCI-e on port 4
  - PCI Express 100 MHz clock on AdvancedMC FCLKA
- Serial Rapid IO
  - AMC.4 Type 10 sRIO on ports 8-11
  - Choice of GE or sRIO on these ports

### Processor

The iSPAN 36702 is designed around Wintegra's WinPath3 Network Processor family:

- 9 Protocol Processing Engines (expandable to 12)
- 2 34K MIPS 32-bit RISC cores running at 622/700 MHz
- Traffic manager (3 level shaping, Policer accelerator, Queue managers, Parser and Classifier)
- Control Stacks available from Third parties integrated with WDDI
- Two embedded MIPS processors which can support the Wireless Application – LTE or WiMAX

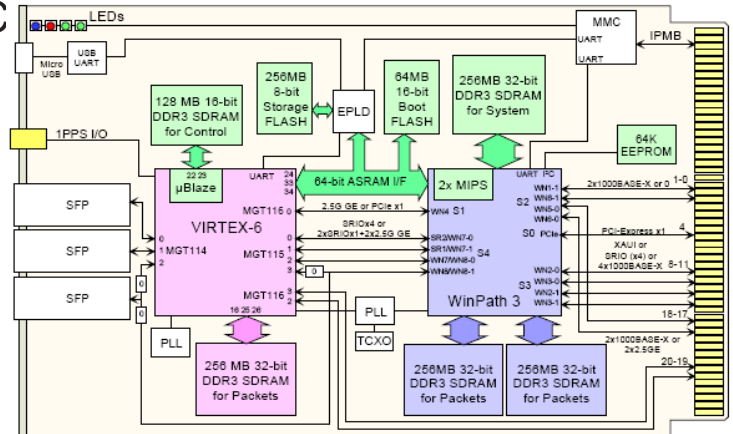
### Memory

- 256MB 32-bit DDR3 SDRAM on Application bus,
- 256MB 32-bit DDR3 SDRAM on Packet bus.
- 256MB 32-bit DDR3 SDRAM on Parameter bus.
- 128MB 16-bit + 256MB 32-bit DDR3 SDRAM on FPGA

### Software

Fully programmable software source code licenses are available:

- The Wintegra Control Processor solution including scalable RLC/MAC software is fully programmable in subset of C and uses multi-core, including dual MIPS cores
- The Xilinx solution is fully programmable and provides Downlink and Uplink LTE PHY processing: LTE Turbo Encoder / Decoder, Rate Matching, FFT/iFFT with Cyclic Prefix Insertion, QAM mapper / demapper
- Additional elements of the eNodeB or WiMAX full base stations reference design software is available directly from our software partners or can be provided through Interphase
  - S1/X2 network interface support including IPsec and GTP tunneling
  - eNodeB / WiMAX Application Software



## Technical Specifications

### Architecture

Processor	WinPath3 WP3292W2xFFI-400 Network Processor
FPGA	Virtex-6 XC6VLX 195 / 240 / 365T

### Memory

RAM	4x 256MB 32-bit DDR3 SDRAM
Flash	1x 128MB 16-bit DDR3 SDRAM
	64MB downloadable 16-bit Boot Flash EPROM
	256MB downloadable 8-bit Storage Flash EPROM
	512Kbit I <sup>2</sup> C Serial EEPROM

### Mechanical

Form Factor	AMC.0 R2.0 AdvancedMC Mid-size or Full Size
Length	180.6 mm (7.11 in.)
Width	73.5 mm (2.89 in.) (single-width)

### Operating Environment

Power Consumption	~30W (estimated) typical depending on WinPath 3 and Virtex-6 equipped
Temperature	0 to 55°C (32 to 144.5 °F)
Storage Range	-40 to 80 °C (-40 to 176 °F)
Relative Humidity	5% to 95% non-condensing
Altitude	0 to 2000 M (0 to 6500 ft)

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### About Interphase Corporation

Interphase Corporation (NASDAQ: INPH) delivers solutions for network connectivity, interworking, and packet processing for key applications for the communications, Mil/Aero, and enterprise markets. Founded in 1974, Interphase provides expert customization services and contract manufacturing, in addition to its COTS portfolio, and plays a leadership role in next generation AdvancedTCA® (ATCA), AdvancedMC™ (AMC), PCI-X, and PCIe standards and solutions. Interphase is headquartered in Plano, Texas, with sales offices across the globe.