*i*SPAN® 36701 Wireless Base Station AMC

High Performance for Next Generation Wireless Access Networks

APPLICATIONS

LTE / WiMAX   **Pico / Microcells**   **Enterprise Femtocells**

FEATURES

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

Mindspeed Transcede 4020 SoC

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

Front panel I/O options:
▪SFP Modules for CPRI
▪GE RJ45 Interface
▪SMB microcoaxial for GPS 1pps signal input/output

IEEE 1588 v2 / Synchronous Ethernet

Integrated L2 and L1 on a single SoC provides lowest possible latency

Scalable solutions by integrating multiple 36701s

Rich Ecosystem of software tools and applications available through Interphase Partners

Wireless Base Station on a Card

The iSPAN 36701 Wireless Based 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 two Optical Interfaces on the front panel for CPRI Baseband interfaces and AMC connector support for a combination of Gigabit Ethernet, Serial RapidIO™ and PCI-Express™ links.

High Performance Platform - Multicore Processor and DSP

The iSPAN 36701 utilizes the Mindspeed Transcede™ 4000/4020 System on a Chip (SoC) with integrated support for the Radio Interface, DSPs for Baseband PHY processing and ARM A9 cores for L2 / L3 Protocol Processing as well as eNodeB application software aligned with the latest 3GPP requirements:

- Supports the complete LTE or WiMax Layers 1 and 2 processing needs for 3 10MHz sectors 2x2 in one device (T4000) or 3 20 MHz sectors with 2x2 Tx/Rx in one device (T4020)
- Backhaul and air interface security: support for AES, 3DES, HMAC, SNOW-3G, Kasumi
- High data throughput of FEC (greater than 400 Mbps)
- Large L1 DSP memory minimizes off-chip memory access
- Flexible Mindspeed Application Processor (MAP) supporting PAPR, G-RAKE and FFT algorithms
- Higher level precision on FFT (16,24)
- Lower power than competing solutions
- Optimized for pico cell applications

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.
- Mix of programmable DSP and H/W acceleration allows over 40% DSP headroom for additional customer feature development

Road to 4G

The iSPAN 36701 is designed as an entry point for the development of next generation wireless micro, pico, and enterprise femto cell base stations. Interphase can adapt or extend this solution to meet your needs in AMC or in any other form factor required.

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External Interfaces

- 2 SFP receptacles for CPRI 4.1
- 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
    - Port 1 is shared with the front panel RJ45
- PCI-Express 2
  - AMC.1 Type 4 PCI-e on port 4-7
- Serial Rapid IO
  - AMC.4 Type 4 sRIO on ports 4-7

Processor

Mindspeed Transcede 4020 SoC

- 6 ARM Cortex A9 (RISC) Processor Cores @ 750 MHz (9000 DMIPS)
  o Option to use T4000 @ 600 MHz
- 10 CEVA DSP Cores (24 GMAC/s)
- FEC Processor
- 10 Application Processors for FFT (6000 MIPS / 24 GMAC/s)
- 2 Security Coprocessors

Memory

- DDR3 – 512MB @ 1200 MHz with ECC support expandable to 1GB

Radio Clock

- Multiple potential sources including
  o Onboard OCXO, Synchronous Ethernet (SyncE), IEEE 1588v2, TCLK1 from AMC connector (input & output)
- Multiple PLL options provide for numerous frequency options and jitter Cleaning

Software

Fully programmable software source code licenses are available:

- Complete Reference 3G and 4G PHY Application including verification test bench
  o Executables, source code, object code, header files
  o Documentation on architecture, APIs and performance
  o Tools for software development, verification, and performance profiling
  o Demo application for complete base station
- Integrated Layer 2/3 eNodeB solution available from Aricent
  o Supports FDD mode as per Release 8 specifications
  o Bandwidth configuration up to 20MHz
  o Basic static configuration based reference RRM implementation (Admission Control)
  o 2x2 MIMO
- 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
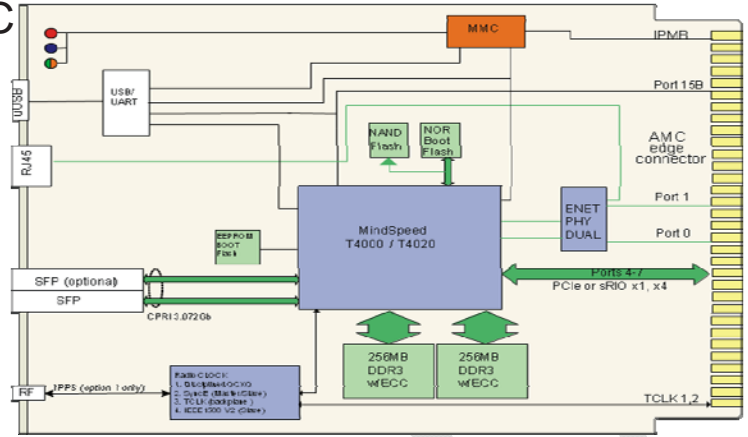
Technical Specifications

Architecture

Processor	Transcede 4020 SoC

Memory

RAM	2x 256MB 32-bit DDR3 SDRAM Expandable to 2x 512MB 1200 MHz
Flash	64MB downloadable Boot Flash EPROM
	1 GB downloadable Storage Flash EPROM
	64KB 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	26W Typical / 36W Max (estimated)
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)

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.