Information Brief

Brief: artem ComPoint Embedded

Publishing Date: March 08, 2005

Funkwerk
Enterprise Comms. GmbH
Südwestpark. 94
D-90449 Nürnberg, Germany
Phone: +49-180-300 91 91-0
Fax: +49-180-300 91 93-0
info@funkwerk-ec.com
www.funkwerk-ec.com

ar_ib_CPEmb_06_e

funkwerk
enterprise communications

Wireless LAN and your health

The Artem Wireless LAN products, like other radio devices, emit radio frequency electromagnetic energy. The level of energy emitted by Wireless LAN devices however is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones. Because Wireless LAN products operate within the guidelines found in radio frequency safety standards and recommendations, Artem believes Wireless LAN is safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

*Reorient or relocate the receiving antenna

*Increase the separation between the equipment and receiver

*Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

*Consult the dealer or an experienced radio/TV technician for help

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end- product for any additional compliance requirements required with this module installed (for example, Wireless AP , Wireless Router).

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC 10 can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example, wireless AP , Wireless Router). The final end product must be labeled in a visible area with the following: .. Contains TX FCC ID: SPT-CM11B-01" .

Manual Information That Must be Included

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the users manual of the end product which integrate this module.

The users manual for OEM integrators must include the following information in a prominent location" IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

General Description

The Core Module combines all needed components to build an IEEE 802.11b wireless device.

It contains:

- Network processor (Ubicom IP2022 @ 120MHz)
- IEEE 802.11b radio (Agere Hermes 2 and Penguin)
- Clock (4.8MHz crystal, CPU internal PLL to generate 120MHz and 240MHz)
- Optional: 32kHz crystal for RTC and sleep mode
- Voltage supervisor including debounced reset input
- 1 MBit SRAM and 4 MBit Serial Flash for packet buffering and firmware storage
- 2.5V LDO
- 2 U.FL antenna connectors (Rx/Tx and Rx diversity)

The module is designed in the form factor of a MiniPCI Type IIIA card (50.95 x 59.75 x 8 mm (L x W x H)) , however with a proprietary pinout. Please see the MiniPCI standard for mechanical details (MiniPCI Spec Rev. 1.0, Figure 5-7 on page 45).

Power consumption: max. 500mA @ 3.3V (avg.: tbd ; sleep: tbd)

Supply voltage: 3.3V +/- 3%

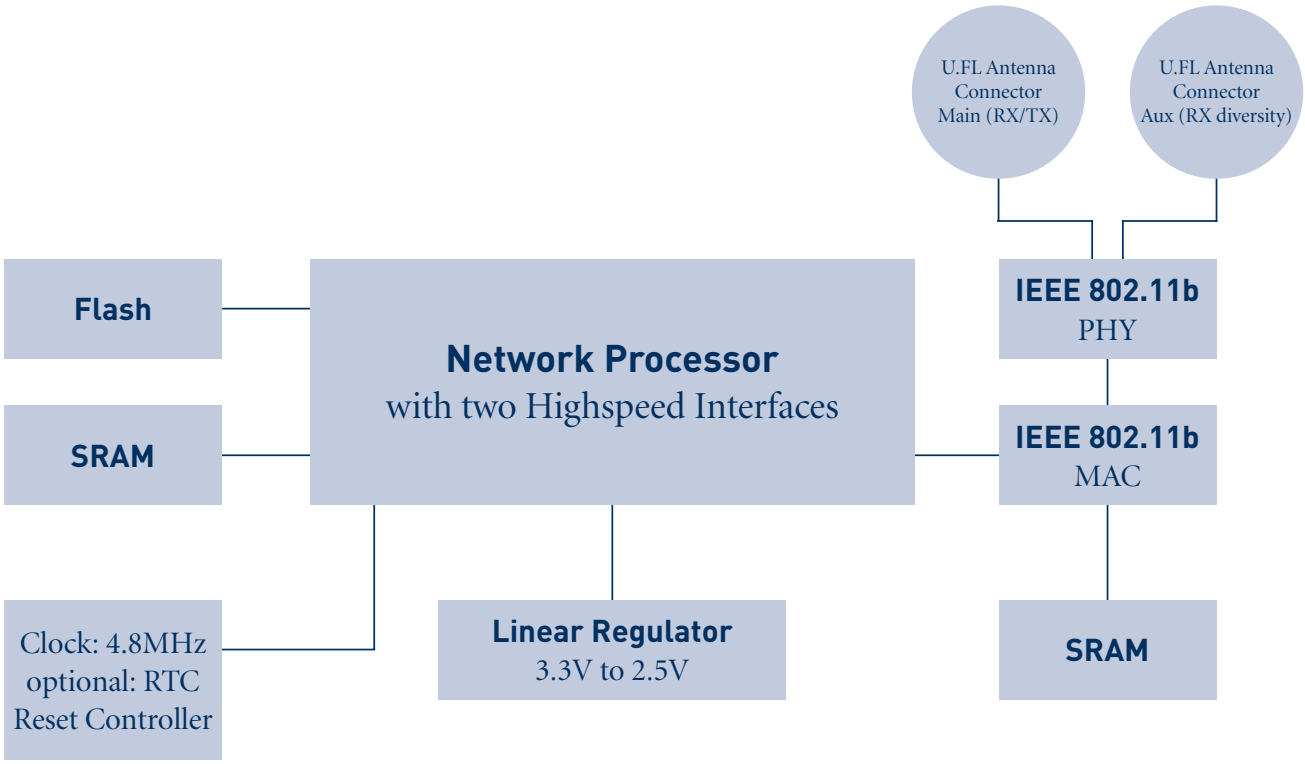
Operating temperature: -20 °C .. +70°C

Usable CPU Ports

Port	Vmax	Imax		Assignment	Preferred usage
RA1	3.3V	24mA	DI / DO	SPI SCK (fixed)	SPI SCK
RA2	3.3V	24mA	DI / DO	SPI SI (fixed)	SPI SI
RA3	3.3V	24mA	DI / DO	SPI SO (fixed)	SPI SO
RB0	3.3V	8mA	DI / DO / Ext. Interrupt		SPI CS
RB1	3.3V	8mA	DI / DO / Ext. Interrupt		
RE4	3.3V	8mA	DI / DO	SERDES 1	Ethernet 1
RE5	3.3V	24mA	DI / DO	SERDES 1	Ethernet 1
RE6	3.3V	24mA	DI / DO	SERDES 1	Ethernet 1
RE7	3.3V	8mA	DI / DO	SERDES 1	Ethernet 1
RG4	2.5V	4mA	AI / DO	SERDES 1	Ethernet 1
RG5	2.5V	4mA	AI / DO	SERDES 1	Ethernet 1
RF0	3.3V	8mA	DI / DO	SERDES 2	Ethernet 2 / RS232 RTS
RF1	3.3V	24mA	DI / DO	SERDES 2	Ethernet 2 / RS232 TxD
RF2	3.3V	24mA	DI / DO	SERDES 2	Ethernet 2 / RS232 CTS
RF3	3.3V	8mA	DI / DO	SERDES 2	Ethernet 2
RG6	2.5V	4mA	AI / DO	SERDES 2	Ethernet 2
RG7	2.5V	4mA	AI / DO	SERDES 2	Ethernet 2
RG0	2.5V	4mA	AI / DO / ACOMP Out		Act. LED 2
RG1	2.5V	4mA	AI / DO / ACOMP In -		Link LED 2
RG2	2.5V	4mA	AI / DO / ACOMP In +		Act. LED 1 & Monitor button
RG3	2.5V	4mA	AI / DO / ADC Ref In		Link LED 1
RF7	3.3V	8mA	DI / DO	SERDES 2	RS232 RxD

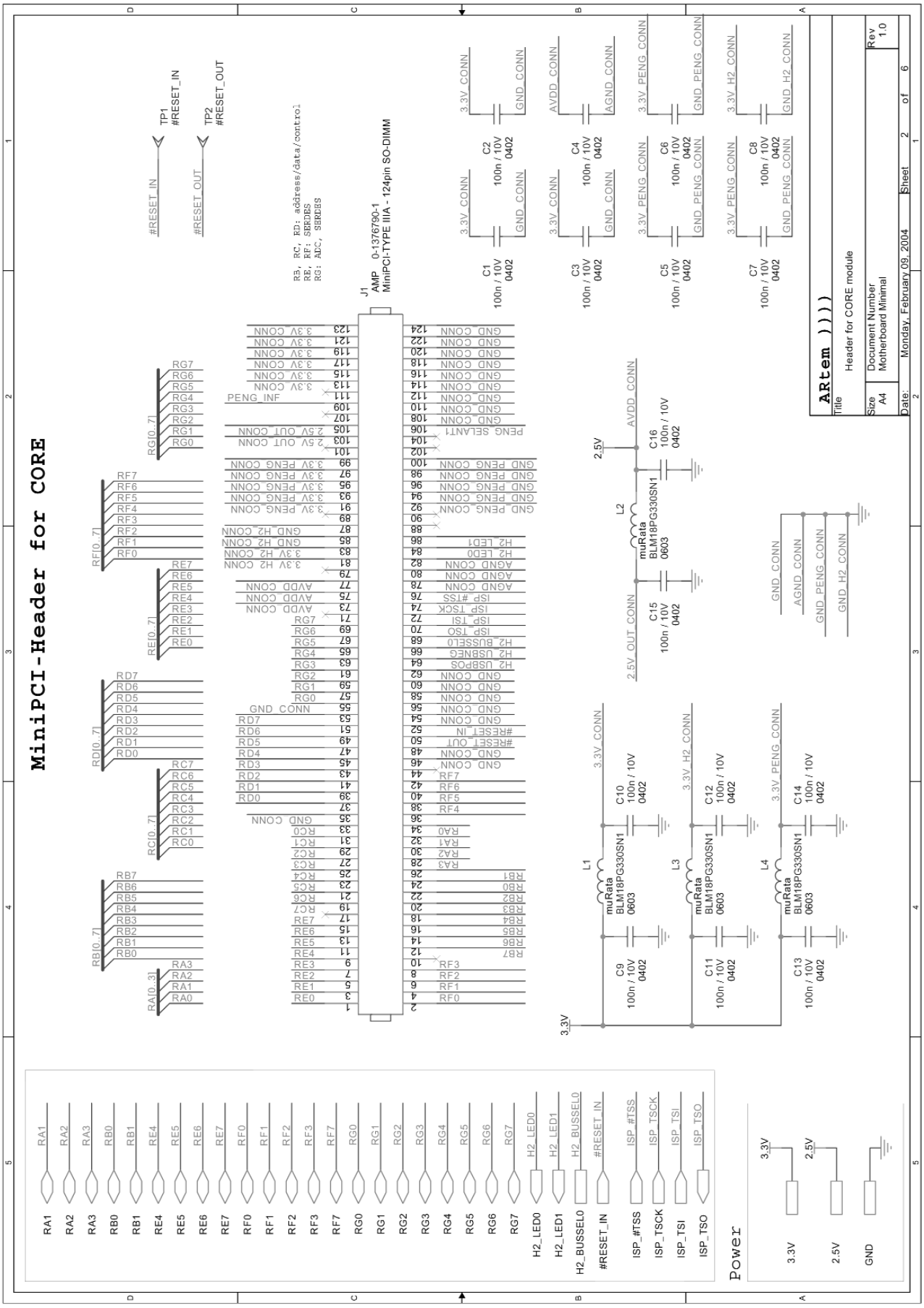
AI = Analog Input (ADC, 48kHz, 10bit)
DI = Digital Input
DO = Digital Output
Ext. Interput = Interupt Input
ACOMP = Analog Comparator

Core Module Technical Graphics - Block Diagramm



MiniPCI Type III connector (124 pin), proprietary pinout

Core Module Technical Graphics - MiniPCI-Header For Core



Software Features

	Access Point	Ethernet Client	Ethernet Serial Client
Current firmware & version	sm_ap V1.40	sm_ac V1.40	sm_sc V1.40
Wireless			
Network Name	yes	yes	yes
Channel Setting	yes	yes (Ad-Hoc)	yes (Ad-Hoc)
802.11d Support	yes	yes	yes
Transmission Rate (auto + fixed)	yes	yes	yes
Ad-Hoc Mode	n/a	yes	yes
Load Balancing	yes	yes	yes
AP Distance	yes	n/a	n/a
RTS Threshold (1 - 2347)	yes	yes	yes
Microwave robustness	yes	yes	yes
Medium Distribution Support	yes	yes	yes
DTIM Interval (1 - 65535)	yes	n/a	n/a
Multicast rate	yes	yes	yes
PS Multicast Buffering	yes	n/a	n/a
IAPP (ARtem proprietary)	yes	n/a	n/a
WLAN Node Table	yes	n/a	n/a
AP Scan List	n/a	yes	yes
LAN Node Table	n/a	yes	yes
Security			
802.1x Authentication	MD5, TLS, TTLS, PEAP	MD5	MD5
802.1x Reauthentication Timer	yes	n/a	n/a
RADIUS Client	yes	n/a	n/a
ACL Local	yes	n/a	n/a
Data Encryption	WEP64/128/Plus	WEP64/128/Plus TKIP	WEP64/128/Plus TKIP
Deny Unencrypted Data	yes	n/a	n/a
WPA-Personal (PSK)	Planned	yes	yes
WPA-Enterprise (802.1x)	Planned	Planned	Planned
Radio On/Off	yes	yes	yes
AP Visibility (Hide SSID)	yes	n/a	n/a
Inter Traffic Blocking (Repeating)	yes	n/a	n/a
Admin Password	yes	yes	yes
Configuration over WLAN Option	yes	yes	yes
Configuration & Management			
User-Friendly Web Interface	yes	yes	yes
ComPoint Manager - Discovery- & Rollout-Tool	yes	yes	yes
Configuration Management API	yes	yes	yes
DHCP Client	yes	yes	yes
Reboot	yes	yes	yes
Reset Configuration	yes	yes	yes
Reset All to Factory Default	yes	yes	yes

Software Features

	Access Point	Ethernet Client	Ethernet Serial Client
Serial			
TCP Server	n/a	n/a	yes
TCP Client	n/a	n/a	yes
Transparent Serial Bridge	n/a	n/a	Planned
Virtual COM	n/a	n/a	Planned
Serial Statistics	n/a	n/a	yes
Baudrate	n/a	n/a	2400 - 230400
Data Bits (7/8)	n/a	n/a	yes
Parity (None, Even, Odd)	n/a	n/a	yes
Stop Bits (1, 2)	n/a	n/a	yes
Handshake HW (RTS/CTS, DTR/DSR)	n/a	n/a	yes (only for RS232)
Handshake SW (XON/XOFF)	n/a	n/a	Planned
Frame Send Trigger via Time-Out	n/a	n/a	yes
Frame Send Trigger via Byte Count	n/a	n/a	yes
Frame Send Trigger via Multi-Byte Delimiter	n/a	n/a	Planned

Legal Notices

Contact

Address

Funkwerk Enterprise Communications GmbH
Südwestpark 94
D-90449 Nürnberg, Germany

General

Phone: +49-180-300 91 91-0
Fax: +49-180-300 91 93-0
eMail: info@funkwerk-ec.com