



REV.1.0 2002/03/2211

**COMPANY CONFIDENTIAL**

# T60H424.00 MINIPCI IIIB Wireless LAN Card

## Marketing Requirements Specification



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**0. Revision History**

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### 1. Introduction

Project Name : MINIPCI IIIB Wireless LAN Card  
Project Code : T60H424.00

This documentation describes the marketing requirements specification of the Ambit MINIPCI IIIB Wireless LAN card using a RF Module based on Intersil's Prism 2.5 chipsets. It is a confidential document of AMBIT.

#### 1.1 Scope

AMBIT MINIPCI IIIB WLAN Card complied with IEEE 802.11b 11Mbps Standard. The WLAN application is implemented via a RF module. This RF module is developed for Wireless LAN application complied with IEEE 802.11b 11Mbps standard in ISM band. It can be used to provide a variety of low-cost wireless network interfaces to build your wireless connection via simply SMT procedure to speed the time to market. Three Intersil's chips are implemented in the RF module including ISL3984, ISL3685, HFA3783.

#### 1.2 Wireless LAN Function

- Compatible with IEEE 802.11b high rate standard to provide wireless Ethernet speeds of 11Mbps data rate
- Dynamic data rate switching with 11, 5.5, 2 and 1Mbps
- Allows auto fallback data rate for optimized reliability, throughput and transmission range
- Supports wireless data encryption with 64/128-bit WEP standard for security
- Dual diversity antenna connectors supported for the multi-path environment
- Drivers supports Windows 95, 98, 98SE, NT, ME, 2000, XP .

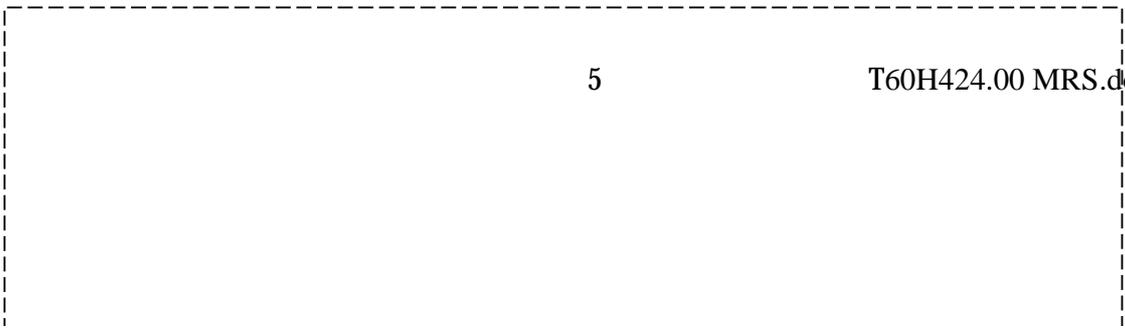


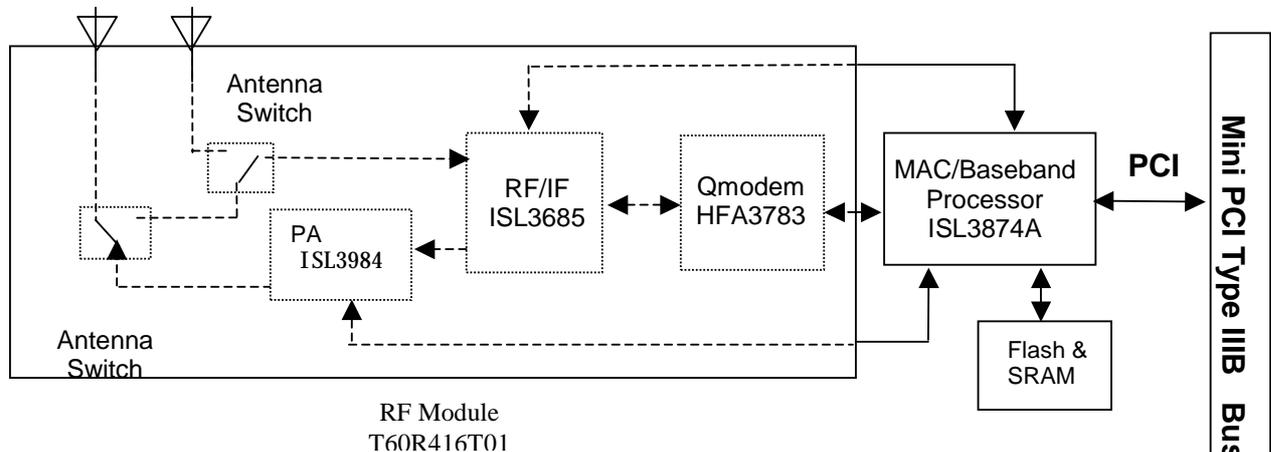
## 2. Product Requirements

### 2.1 General Electrical Specifications

Radio Technology	IEEE 802.11b Direct Sequence Spread Spectrum
Operating Frequency	2400 ~ 2474MHz ISM band
Modulation Schemes	DQPSK, DBPSK and CCK
Channel Numbers	IEEE 802.11b compliant 11 channels for United States
Data Rate	11Mbps with fall back rates of 5.5, 2, and 1Mbps
Spreading	11-chip Barker Sequence
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power	15dBm typically
Receiver Sensitivity	Typical -85dBm for 11Mbps @ 8% PER Typical -90dBm for 2Mbps @ 8% PER
Antenna Type	Integrated diversity switch with HRS connectors for connecting dual diversity antennas
Operating Voltage	3.3VDC
Current Consumption	380mA at transmit mode (typically) 215mA at receive mode (typically) 90mA at sleep mode (typically)
Bus Interface	Mini-PCI Type IIIB

### 2.2 Hardware Architecture





ISL3984:2.4GHz Power Amplifier and Detector  
ISL3685:2.4GHz RF/IF Converter and Synthesizer  
HFA3783:I/Q Modulator/Demodulator Synthesizer  
ISL3874:Integrated MAC and Baseband Processor

### 2.3 Mechanical Requirements

The Ambit Mini-PCI WLAN Card shall be 4-layer FR4 PCB design, which meets the requirements of Mini-PCI Type IIIB.

PCB Dimension (W x L x H) : 59.75mm x 4.6mm x (1.00mm+/-0.1mm)

Module Height (front/PCB/back) with shielding case : 4.8 mm (2.4mm/1.0mm/1.4mm)

The wireless LAN RF module shall be 6-layer FR4 PCB ( $T_g=180^\circ$ ,  $\epsilon_r=3.75$ ) design with 0.6 mm thickness, in order to meet the requirements of versatile interfaces, the physical dimension (W x L x H) : 3.5mm x 3.5mm x 2.3 mm..

### 2.4 Weight

40 g TYP.

### 2.5 Antenna Connection

Dual antenna connectors (HRS-UFL-R-SMT) supported on the RF module to improve the performance due to multi-path environment.



### **3. Reliability, Maintainability and quality**

#### **3.1 Reliability**

Mean Time Between Failure (MTBF)                      30,000 hours

#### **3.2 Maintainability**

There should be no scheduled preventive maintenance required.

#### **3.3 Quality**

The product quality must be followed-up by Ambit factory quality control system.

### **4. Environmental Requirements**

#### **4.1 Temperature**

##### **4.1.1 Operating Temperature Conditions**

The product shall be capable of continuous reliable operation when operating in ambient temperature of 0 degree C to +60 degree C.

##### **4.1.2 Non-Operating Temperature Conditions**

Neither subassemblies shall be damaged nor shall the operational performance be degraded when restored to the operating temperature when exposed to storage temperature in the range of -10 degree C to +70 degree C.

#### **4.2 Humidity**

##### **4.2.1 Operating Humidity Conditions**

The product shall be capable of continuous reliable operation when subjected to relative humidity in the range of 10% and 90%, non-condensing.

##### **4.2.2 Non-Operating Humidity conditions**

The product shall not be damaged nor shall the performance be degraded after exposure to relative humidity ranging from 5% to 95%, non-condensing.