

# High Power Mini PCIe Radio

## WLE250N5-25

WIRELESS-AN 25DBM 2X2 NETWORK MINI PCIE ADAPTER

### Features

- Maximum 25dBm output power(per chain)/ 28dBm(aggregate)
- IEEE 802.11n compliant and backward compatible with 802.11a
- Dual-band 2 x 2 MIMO spatial multiplexing technique
- Supports up to 450Mbps physical data rates
- Atheros XSPAN family chipset with SST3™, which increase the link rate by ~100% at short range, ~50% at mid range and ~25% at long range
- Supports Spatial Multiplexing, cyclic-delay diversity (CDD), low-density parity check (LDPC), maximum ratio combining (MRC), space time block code (STBC) and Tx beamforming (TxBF)
- 
- Multi-Country Roaming Supported (IEEE802.11d Global Harmonization Standard)
- 5V supply needed to miniPCI slot or on-board jumper
- Heatsink for reliability
- 2 x MMCX Antenna Connector
- Supports 802.11x authentication, 64/128/ 152Bit WEP, IEEE802.11i encryption
- Supports Windows 7, Windows Vista, Windows XP operating system

Technical Specifications										
Chipset	AR9582/AR9592									
Host Interface	PCI-Express 1.1 Standard									
Operating Voltage	5 VDC									
Power Consumption	5W									
Antenna Connector	2 x MMCX Antenna Connector									
Data Rate	IEEE 802.11a :	54Mbps	48Mbps	36Mbps	24Mbps	18Mbps	12Mbps	9Mbps	6Mbps	
	IEEE 802.11n :	20MHZ	1Nss: 65Mbps @ 800GI, 72.2Mbps @ 400GI (Max.)							
			2Nss: 130Mbps @ 800GI, 144.4Mbps @ 400GI (Max.)							
		40MHZ	3Nss: 195Mbps @ 800GI, 216.6Mbps @ 400GI (Max.)							
	1Nss: 135Mbps @ 800GI, 150Mbps @ 400GI (Max.)									
	2Nss: 270Mbps @ 800GI, 300Mbps @ 400GI (Max.)									
	3Nss: 405.5Mbps @ 800GI, 450Mbps @ 400GI (Max.)									
IEEE 802.11a/n:	5.725 ~ 5.850 GHz (US & Canada)									
Modulation Techniques	OFDM: BPSK, QPSK, 16-QAM, 64-QAM									
RoHS Compliance	Yes									
Temperature Range	Operating: -20°C to 70°C Storage: -40°C to 90°C									
Humidity	Operating:5% to 95% (non-condensing) Storage: Max.90% (non-condensing)									
Dimensions	50.95mm x 58.7 mm x 8.4 mm (H x W x D)									

WLE250N5-25 PCI e Mini CARD RADIO										
TX SPECIFICATIONS										
	DataRate	TX Power (per chain)	TX Power (2 chains)	Tolerance			DataRate	TX Power (per chain)	TX Power (2 chains)	Tolerance
802.11a	6Mbps	25dBm	28dBm	±2dB		802.11a	54Mbps	25dBm	28dBm	±2dB
	DataRate	TX Power (per chain)	TX Power (2 chains)	Tolerance			DataRate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 11n HT20	MCS 0	25dBm	28dBm	±2dB	5 GHz 11n HT40	MCS 0	25dBm	28dBm	±2dB	
	MCS 7	24dBm	27dBm	±2dB		MCS 7	24dBm	27dBm	±2dB	
	MCS 8	25dBm	28dBm	±2dB		MCS 8	25dBm	28dBm	±2dB	
	MCS 15	24dBm	27dBm	±2dB		MCS 15	24dBm	27dBm	±2dB	
	MCS 16	25dBm	28dBm	±2dB		MCS 16	25dBm	28dBm	±2dB	
	MCS 23	24dBm	27dBm	±2dB		MCS 23	24dBm	27dBm	±2dB	
RX SPECIFICATIONS										
	DataRate	Sensitivity	Tolerance			DataRate	Sensitivity	Tolerance		
802.11a	6M	-94dBm	±2dB		802.11a	54M	-81dBm	±2dB		
5 GHz 11n HT20	MCS 0	-94dBm	±2dB	5 GHz 11n HT40	MCS 0	-91dBm	±2dB			
	MCS 7	-76dBm	±2dB		MCS 7	-71dBm	±2dB			
	MCS 8	-93dBm	±2dB		MCS 8	-89dBm	±2dB			
	MCS 15	-73dBm	±2dB		MCS 15	-69dBm	±2dB			
	MCS 16	-91dBm	±2dB		MCS 16	-87dBm	±2dB			
	MCS 23	-71dBm	±2dB		MCS 23	-67dBm	±2dB			

### Ordering Informaion®

Model Code	Chipset	Power	CARD I N F O R M A T I O N S
WLE250N5-25 8A0000	AR9582	25dBm(per chain)	802.11 a/n PCIe mini card
WLE250N5-25 8B0000	AR9592	25dBm(per chain)	802.11 a/n PCIe mini card

- ① Depends on Order Configuration  
 ② Configurations are subject to change without notice,  
 Please contact Compex sales representatives for other available configurations

## List of Antennas

The following antennas are certified with this MiniPCIE Radio module:

Antenna type 1: Omni Antenna

Antenna Gain: 10 dBi

Manufacturer : Foshan Lanbowan Communications, Ltd.

Model name: ANT5158Q10V

Antenna type 2: Omni Antenna

Antenna Gain: 7 dBi

Manufacturer : SmartANT Telecom Co., Ltd.

Model name: SAA04-22008A

Antenna type 3: Invented Antenna

Antenna Gain: 5 dBi

Manufacturer : A\*STAR

Model name: IP-TDF V2.0

Antenna type 4: Omni Antenna (swivel)

Antenna Gain: 2 dBi

Manufacturer: Kunshan Wavelink Electronic Co., Ltd.

Model name: WD12020258G

For the Antennas specified above, the following coaxial RF adapter cables ( "Megalon" ) shall be used:

Antenna Description							
Omni Antenna				Invented Antenna			
Gain	Antenna connector	Cable of connector		Gain	Antenna connector	Cable of connector	
		External	Internal			External	Internal
10dBi	N- Female PIN reverse	N-male PIN reverse	IPEX male pin normal	5dBi	Fixed	Fixed	IPEX male pin normal
7dBi	N- Female PIN reverse	N-male PIN reverse	IPEX male pin normal				
2dBi	Fixed	Fixed	IPEX male pin normal				

Both separate RF adapter cables supplied with this product provide 1dBi loss.

The Invented antenna does not need to use any RF adapter cable, it directly fits to the RF module.

## COMPLIANCE INFORMATION

### FCC Notice:

This device 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 device 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 device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the computer to an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the computer and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

### FCC Compliance Statement:

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.

**Caution:** Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

WARNING: This Wireless Mini PCI Adapter does not support ad-hoc mode Function.

### Integration Notices:

The host device must be equipped with a MiniPCIe slot for inserting this MiniPCIe Radio module. The device can be accessed by the host device by programming the MiniPCIe Radio module address over the MiniPCIe interface by means. Depending on the CPU platform, an Atheros AR9582/AR9592 driver for this may may be available from [www.compex.com.sg](http://www.compex.com.sg) or on request by contacting Compex. It is not possible to program/change the power or channels as certified in this filing.

This module is approved for professional installation, and shall only use the antennas certified and listed in this Manual. This device is only suitable for integration in end-user devices classified by the FCC as "Mobile Device". Integrating this module does not mean that the host device is compliant: The integrator is fully responsible for any additional compliance testing of the complete host device, and shall be tested for line conducted emissions and radiated spurious emissions, whereas additional equipment authorization procedures may be necessary. In case other antennas construction types or antennas with higher gains than listed are used, FCC class 2 change testing/certification on this module will be necessary.

The end device integrating this module must be labeled:  
Contains transmitter module FCC ID: TK4WLE250N5-25

### Exposure to Radio Frequency Radiation:

This module must be installed and operated in accordance with the instructions in this manual and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. It is the responsibility of the end-user and installer to comply with the separation distance for satisfying RF exposure compliance. End-users and installers must be provided with these antenna installation instructions and transmitter operating conditions in order to satisfy RF exposure compliance.

**IMPORTANT NOTE:** In the event that these conditions specified above can not be met, then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

## Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

## Safety of Information Technology Equipment

- EN 62311: 2008 / Article 3(1)(a) and Article 2 2006/95/EC)  
Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz-300 GHz) (IEC 62311:2007 (Modified))
  - EN 301 893 V1.7.1: 2012  
Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
  - EN 301 489-1 V1.9.1: 2012  
Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
- EN 301 489-17 V2.2.1: 2012
- Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

## Information about the Regulatory Compliance according to R&TTE

**CE 0700**

Regulati

European notice



WEEE



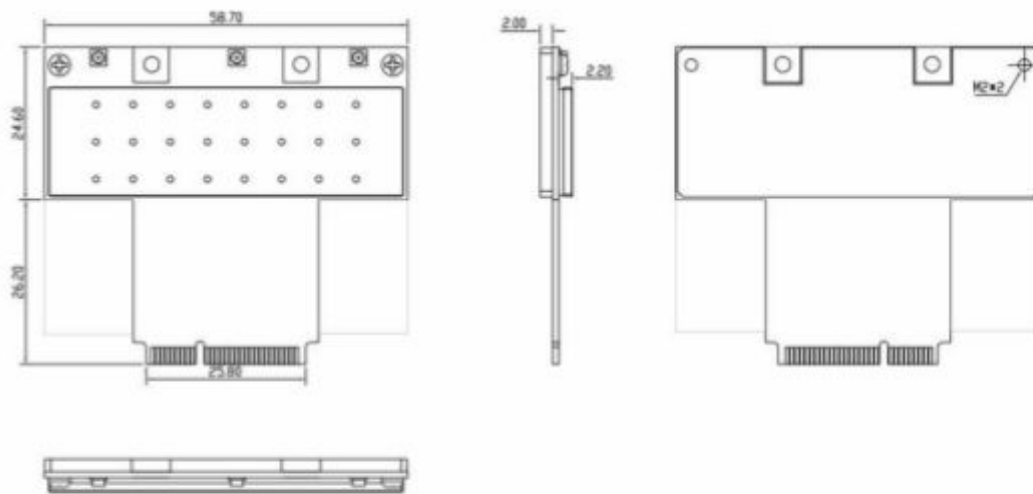
This product must not be disposed of as normal household waste, in accordance with the EU directive for waste electrical and electronic equipment (WEEE – 2002/96/EC). Instead, it should be disposed of by returning it to the point of sale, or to a municipal recycling collection point.

Český [Czech]	[Jméno výrobce] tímto prohlašuje, že tento [typ zařízení] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
Dansk [Danish]	Undertegnede [fabrikantens navn] erklærer herved, at følgende udstyr [udstyrets typebetegnelse] overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
Deutsch [German]	Hiermit erkläre [Name des Herstellers], dass sich das Gerät [Gerätetyp] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti	Käesolevaga kinnitab [tootja nimi = name of manufacturer] seadme [seadme tüüp = type of equipment] vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele



[Estonian]	asjakohastele sätetele.
[en]English	Hereby, <i>[name of manufacturer]</i> , declares that this <i>[type of equipment]</i> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
[es]Español [Spanish]	Por medio de la presente <i>[nombre del fabricante]</i> declara que el <i>[clase de equipo]</i> cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
[el]Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ <i>[name of manufacturer]</i> ΔΗΛΩΝΕΙ ΟΤΙ <i>[type of equipment]</i> ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
[fr]Français [French]	Par la présente <i>[nom du fabricant]</i> déclare que l'appareil <i>[type d'appareil]</i> est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
[it]Italiano [Italian]	Con la presente <i>[nome del costruttore]</i> dichiara che questo <i>[tipo di apparecchio]</i> è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo <i>[name of manufacturer / izgatavotāja nosaukums]</i> deklarē, ka <i>[type of equipment / iekārtas tips]</i> atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo <i>[manufacturer name]</i> deklaruojama, kad šis <i>[equipment type]</i> atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
[nl] Nederlands [Dutch]	Hierbij verklaart <i>[naam van de fabrikant]</i> dat het toestel <i>[type van toestel]</i> in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
[mt]Malti [Maltese]	Hawnhekk, <i>[isem tal-manifattur]</i> , jiddikjara li dan <i>[il-mudel tal-prodott]</i> jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.
[hu]Magyar [Hungarian]	Alulírott, <i>[gyártó neve]</i> nyilatkozom, hogy a <i>[... típus]</i> megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
[pl]Polski [Polish]	Niniejszym <i>[nazwa producenta]</i> oświadczam, że <i>[nazwa wyrobu]</i> jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
[pt]Português [Portuguese]	<i>[Nome do fabricante]</i> declara que este <i>[tipo de equipamento]</i> está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
[sl]Slovensko [Slovenian]	<i>[Ime proizvajalca]</i> izjavlja, da je ta <i>[tip opreme]</i> v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	<i>[Meno výrobcu]</i> týmto vyhlasuje, že <i>[typ zariadenia]</i> spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
[fi]Suomi [Finnish]	<i>[Valmistaja = manufacturer]</i> vakuuttaa täten että <i>[type of equipment = laitteen tyyppimerkintä]</i> tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
[sv]Svenska [Swedish]	Härmed intygar <i>[företag]</i> att denna <i>[utrustningstyp]</i> står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

## DI MENSIONS DRAWING



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For more information, visit [www.compex.com.sg](http://www.compex.com.sg)

### Warning

Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

### Note

Before any operation is performed, please read the operation instructions and precautions carefully to minimize the possibility of accidents.

The Note, Caution, Warning and Danger items in other manuals do not cover all safety precautions that should be followed.

They are only the supplements to the safety precautions for operations as a whole.

Therefore, the personnel in charge of the installation and maintenance of the products are required to understand these basics of safety operation.

In performing various operations, please follow the local safety regulations. The safety precautions introduced in the product manuals are supplementary and subject to the local safety regulations.

When various operations are executed on the products, the precautions and special safety instructions provided with the products must be followed to the full.

The personnel in charge of the installation and maintenance of the products must be trained as professionals to master the proper operating methods and all safety precautions. Only the trained and qualified personnel can perform operations such as equipment installation and maintenance.