

# VT6655 802.11a/b/g WLAN BB+MAC Single Chip Solution



## PRODUCT FEATURES

- Compliant with IEEE 802.11a/b/g standard
- Host interfaces: PCI 2.2, miniPCI and 32-bit Cardbus
- Compliant with PCI bus power management specification v1.1
- I<sup>2</sup>C EEPROM interface
- 1 programmable GPIO
- 3.3V operating with 1.8V core voltage, 3.3V / 5V compliant IOs for PCI interface
- Integrated 3.3V to 1.8 V regulator control circuit
- Integrated oscillation circuit for external 20 MHz crystal
- Supports advanced power saving solution
- Package: 14mm x 14 mm LQFP-128

## BASEBAND FEATURES

- On-chip IQ ADC and DAC
- On-chip AGC (Automatic Gain Control)
- Programmable data rates: 6, 9, 12, 18, 24, 36, 48, 54 Mbps for OFDM; 5.5, 11Mbps for CCK; and 1, 2Mbps for barker modulation
- Antenna diversity for better transmitting and receiving performance
- RSSI status report by per receiving packet

## MAC FEATURES

- Supports Infrastructure / AdHoc mode
- Supports Multi-cast packet filtering function
- Two 32-bit timers Unit: 1 us
- Transmit loop-back mode support (Internal / External) to VIA solution
- Supports BSS PCF
- Supports IBSS ATIM window
- SIMPLE TEST Mode Support by hardware. (Continuing Receiving / Continuing Transmitting)
- Supports 4 MIB counters: RTSSuccessCount, RTSFailureCount, ACKFailureCount, FCSErrorCount

## SECURITY FEATURES

- Supports WPA 1.0 / 2.0 specification; Built-in hardware security engine for 802.11i 4.0. WEP(128-bit, 64-bit), TKIP, AES CCMP

*Single-chip 802.11a/b/g WLAN controller enables high-speed 54Mbps wireless connections to satisfy the bandwidth needs of the most demanding enterprise, public access and home WLAN users.*

**VIA Networking VT6655 WLAN Controller, a single chip solution featuring an IEEE 802.11a/g media access controller (MAC) and integrated baseband processor.** Enabling data rates between wireless devices of up to 54Mbps, WLAN modules based on the VIA Networking VT6655 can deliver the bandwidth necessary for real-time streaming of high-definition digital multimedia content in home networks, and provide high-speed email, web and LAN access to multiple mobile users in corporate environments or public hotspots.

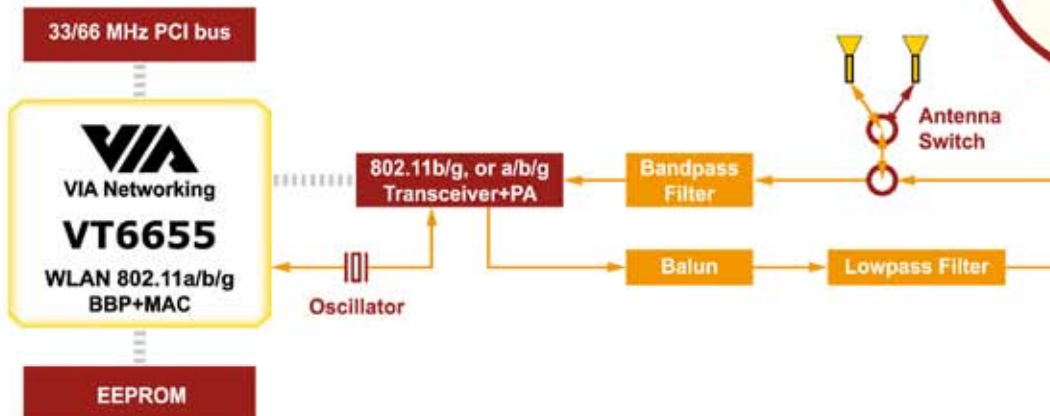
Designed with flexibility in mind, the VIA Networking VT6655 is compatible with a choice of PCI 2.2, miniPCI or Cardbus interfaces, and offers seamless compatibility with the leading RF chips currently available, ensuring WLAN module makers benefit from a wider choice of RF vendors and potentially lower development costs. Backwards compatible with the 802.11b standard, VIA Networking VT6655 based devices enable smooth migration for all 802.11b-based networks, without the need to sacrifice existing WLAN infrastructure.

In addition to providing high-speed wireless communication between devices, the VIA Networking VT6655 ensures optimum data security through the Wi-Fi Protected Access (WPA) specification. The forthcoming WPA 2.0 specification is also supported, which will be enabled through a downloadable software update. The VIA Networking VT6655 is Wi-Fi certified by the Wi-Fi Alliance (formerly WECA), the global organization that oversees the Wi-Fi interoperability certification program. In order to receive official Wi-Fi certification, all IEEE 802.11 products must undergo rigorous independent testing.

"IEEE 802.11g provides the bandwidth needed for today's more demanding Wi-Fi users, while maintaining compatibility with existing 802.11b infrastructure, commented Dr. Steven S Lee, president of VIA Networking Technologies, Inc. "The perfect combination of high-speed data rates, power efficiency and robust security makes the VIA Networking VT6655 WLAN controller an ideal solution to enable the next generation of cutting edge IEEE 802.11g compatible notebooks and peripheral devices."

Additional cutting-edge features of the VIA Networking VT6655 include a Customizable Hot Key function, which enables users to instantly turn off the WLAN connection via a designated key, and a Power Amplifier (PA) Power Detector. The PA Power Detector monitors and optimizes power usage to ensure stable transmission power, which is particularly beneficial to thin and light notebooks with challenging thermal environments. VIA Networking also offers WLAN software programming support to WLAN module vendors, helping enable fast time to market for customers.

**VT6655 802.11b/g, a/b/g  
miniPCI / PCI / Cardbus  
Demo Modules**



802.11b/g WLAN module	Tx Power	Rx Sensitivity	Throughput
VIA Networking (VT6655) (Cardbus, miniPCI, PCI)	CCK: 18dBm OFDM: 15.88dBm	CCK: -85dBm OFDM: -73dBm	11b: 5Mbps 11g: 23Mbps
Typical performance from other vendors	CCK: 17dBm OFDM: 14dBm	CCK: -80dBm OFDM: -65dBm	11b: 5Mbps 11g: 18Mbps