CC3000-Pmod™ Compatible Wi-Fi® Adapter for Xilinx FPGAs

/\VNET®

Reach Further™

Onboard chip antenna

TiWi-SL Module from LS Research

12-pin Pmod connector

DESIGNED BY AVNET

Wi-Fi Pmod shown connected to the Spartan-6 FPGA LX9 MicroBoard (sold separately).
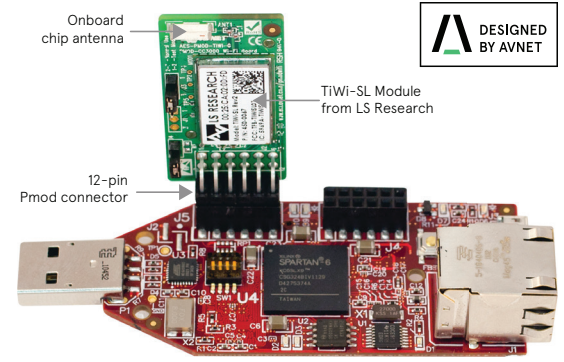
Wi-Fi So Simple Even an FPGA Can Do It

The CC3000-Pmod™ Compatible Wi-Fi® Adapter, designed by Avnet, is a self-contained, certified 802.11b/g Wi-Fi adapter based on the Texas Instruments SimpleLink™ CC3000. Conforming to the Digilent Pmod Interface Specification and 2 x 6 pinout, it is designed to attach to Avnet FPGA development boards that comply with the Pmod Interface Specification. The built-in IP networking stack provides ubiquitous Wi-Fi and Internet access without needing a complex CPU and OS. The module's small API command set is easily incorporated into the FPGA using a MicroBlaze microcontroller core. Example VHDL code and application software are included.

FEATURES

- 802.11b/g TiWi-SL Module from LS Research, utilizing the SimpleLink Wi-Fi CC3000 solution
- Onboard chip antenna
- RF link budget:
  - TX power: +20 dBm
  - RX sensitivity: –89 dBm
- Data throughput: up to 7 Mbps (UDP)
- Wi-Fi security modes: WEP, WPA/WPA2 (AES and TKIP – Personal)
- Networking support: TCP/IP stack (IPv4 - DHCP client, DNS, ARP), Wi-Fi driver, security supplicant, auto-transmit calibration
- Host Interface: SPI @ 15 MHz
- Host code size: as low as 6 KB Flash, 3 KB RAM
- Connections: four sockets (UDP or TCP)
- Headless connection: CC3000 first-time configuration
- Power: includes a shutdown mode <5 uA
- Conforms to the Digilent Pmod Interface Specification and 2 x 6 pinout

KIT INCLUDES

- CC3000-Pmod™ Compatible Wi-Fi board
- FPGA-based Web server application example
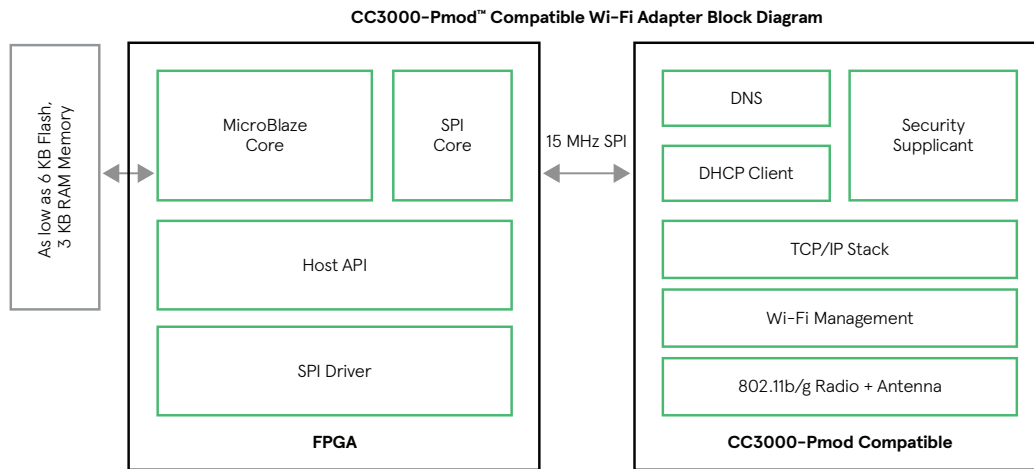- Getting Started Guide

TARGET APPLICATIONS

- Wireless sensors
- Machine-to-machine (M2M)
- Embedded Web server
- Over-the-Air FPGA configuration

PINOUTS

Pin	Signal	Description	Pin	Signal	Description
1	~SS	Slave Select	7	~INT	Interrupt Output
2	MOSI	Master out/Slave in Data	8	PWR_EN	Hibernate
3	MISO	Master in/Slave out Data	9		
4	SCK	Serial Clock	10		
5	GND	Power Supply Ground	11	GND	Power Supply Ground
6	VCC	Power Supply (3.3 V)	12	VCC	Power Supply (3.3 V)

To purchase this kit, visit avnet.com/us/pmodwifi

BLOCK DIAGRAM

CC3000-Pmod™ Compatible Wi-Fi Adapter Block Diagram

FPGA	
As low as 6 KB Flash, 3 KB RAM Memory	MicroBlaze Core / SPI Core
	Host API
	SPI Driver

15 MHz SPI

CC3000-Pmod Compatible
DNS / DHCP Client / Security Supplicant
TCP/IP Stack
Wi-Fi Management
802.11b/g Radio + Antenna

FEATURED MANUFACTURERS

LSR

TEXAS INSTRUMENTS

XILINX ALL PROGRAMMABLE™

PARTS

Part Number	Description	Resale
AES-PMOD-TIWI-G	CC3000-Pmod™ Compatible Wi-Fi Adapter	$59 USD

CONTACT INFORMATION

North America
2211 S 47th Street
Phoenix, Arizona 85034
United States of America
eval.kits@avnet.com
1-800-585-1602

Europe
Gruber Str. 60c
85586 Poing
Germany
marketing@silica.com
+49-8121-77702

Japan
Yebisu Garden Place Tower, 23F
4-20-3 Ebisu, Shibuya-ku
Tokyo 150-6023 Japan
eval-kits-jp@avnet.com
+81-(0)3-5792-8210

Asia
151 Lorong Chuan
#06-03 New Tech Park
Singapore 556741
XilinxAPAC@avnet.com
+65-6580-6000