

# BALI/EVIA M.2 USB Card Product Brief

BALI: Wi-Fi 802.11ac (1x1) + Bluetooth 5 Dual mode Module

EVIA: Wi-Fi 802.11ac (1x1)

## Description

This BALI M.2 SDIO Card is a high performance multi-protocol certified wireless device supporting dual-band 1-stream (1T1R) Wi-Fi 802.11 a/b/g/n/ac and BT5.0. This is offered in 1630 and 2230 form factors. With advanced coexistence algorithms BALI delivers low-latency and high performance WiFi and Bluetooth for superior user experience.

BALI M.2 USB 1630 Card connects to host processor with USB 2.0 (WiFi) and USB 1.1 (BT) over M.2 PCIe host interface. It comes with drivers for different operating systems for complete design flexibility and ease of integration.

EVIA M.2 PCIe 1630 Card supports only WLAN. All the Bluetooth features are only relevant for BALI.

## BALI M.2 USB Card Features

- ❖ Host interfaces : USB 2.0 for WiFi and USB 1.1 for Bluetooth
- ❖ WLAN + Bluetooth coexistence
- ❖ WiFi technology - Low power dual-band (2.4 and 5 GHz), 1-stream MU-MIMO 802.11ac
- ❖ WLAN Security : WPA/WPA2 Personal, WPS 2.0, Enterprise security (STA only)
- ❖ WLAN Encryption : WEP, TKIP, AES
- ❖ Operating modes : STA, SoftAP, P2P Group Owner, P2P Client, STA + SoftAP, STA + P2P Group Owner, STA + P2P Client
- ❖ Module Power save : Deep sleep mode, protocol power save modes - Legacy, UAPSD and GreenTx
- ❖ Host Power save : WoW, Wake-on-BLE, FW Offloading
- ❖ WMM, DFS (Master, Client)
- ❖ Roaming : 11r/FT, Legacy fast roaming
- ❖ 802.11ai : FILS-SK in STA mode
- ❖ Bluetooth technology - Bluetooth 5.0 + HS and Bluetooth Low Energy
- ❖ Bluetooth class : Supports Bluetooth for Class-1 and Class-2 transmissions without requiring an external power amplifier
- ❖ Bluetooth stack : Fluoride, Bluez
- ❖ BT stack core profiles : SDP, L2CAP, GAP - Bluetooth 5.0
- ❖ BLE concurrent roles : BLE concurrent central and peripheral
- ❖ BT stack profiles : All BT SIG (BR/EDR and BLE) profiles including HFP 1.6, A2DP/BT Audio

## BALI/EVIA M.2 USB Cards



1630-S3 (Tmax 1.5mm)

2230-S3 (Tmax 1.5mm)

## BALI M.2 USB Card Evaluation and Development Features

The high performance BALI M.2 USB Card comes with procedure for Linux build and instructions set, scripts to test the following:

- ❖ Wi-Fi, Bluetooth Wireless Functionality
- ❖ Concurrent mode
- ❖ WiFi Security modes
- ❖ Throughputs

## Applications

- ❖ Applications where plug n play high-speed wireless connectivity is needed
- ❖ Security cameras
- ❖ Automotive in-vehicle Infotainment
- ❖ PoS terminals
- ❖ Printers
- ❖ Consumer electronics
- ❖ Smart appliances

**BALI M.2 USB Card Specifications**

WLAN Technology	802.11 abgn, 1-stream MU-MIMO 802.11ac
BT Technology	Bluetooth v5.0 + HS
Frequency band	2.4GHz, 5GHz
On air data rates	<b>2.4GHz</b> 11b - 1,2,5,11Mbps 11g - 6,9,12,18,24,36,48,54Mbps 11n - MCS0 to MCS7 or up-to 150Mbps <b>5GHz</b> 11a - 6,9,12,18,24,36,48, 54Mbps 11n/ac - MCS0 to MCS9 or up-to 433Mbps
Security features	WPA/WPA2 -PSK TKIP/AES, WPS 2.0, Enterprise Security (EAP) STA only.
Modulation schemes	<b>2.4GHz</b> 11b - BPSK,QPSK, CCK 11g - BPSK, QPSK, 16QAM, 64 QAM 11n - PSK, QPSK, 16QAM, 64 QAM <b>5GHz</b> 11a/n/ac - BPSK,QPSK, 16QAM, 64 QAM
Antenna options	Antenna Diversity
Supported Host OS	Linux Android Windows 10
Host interfaces	WiFi – USB 2.0 Bluetooth - USB 1.1 and PCM
Max throughput	290Mbps
Maximum Transmit Power	WiFi 20dBm BT 15dBm BLE 4dBm
Receive Sensitivity	WiFi -97.5dBm BT -96dBm BLE -99dBm
WLAN bandwidths	20/40/80MHz
Power supply	3.3v to 5.5v
Operating Temperature	-40°C to 85°C
Humidity	5-90%non-condensing
Package	1630: 16mm x 30mm x 1.5mm (Tmax) 2230: 22mm x 30mm x 1.5mm (Tmax)
Certifications and approvals	Module certifications - FCC, IC, CE BT 5.0 SIG certification

**BALI/EVIA M.2 USB Card Ordering**

I952HCRO-I62T	BALI M.2 USB 1630 Card with Antenna Diversity
I952HCRO-I63T	BALI M.2 USB 2230 Card with Antenna Diversity
I952HC00-I62T	EVIA M.2 USB 1630 Card with Antenna Diversity
I952HC00-I63T	EVIA M.2 USB 2230 Card with Antenna Diversity

**Additional information**

For the latest collaterals, please visit <http://www.ivativ.com>