



802.11a/b/g wifi CF and Bluetooth USB combo module, BCM4318E+BCM2060+BCM2045

Model: DDIB-M1



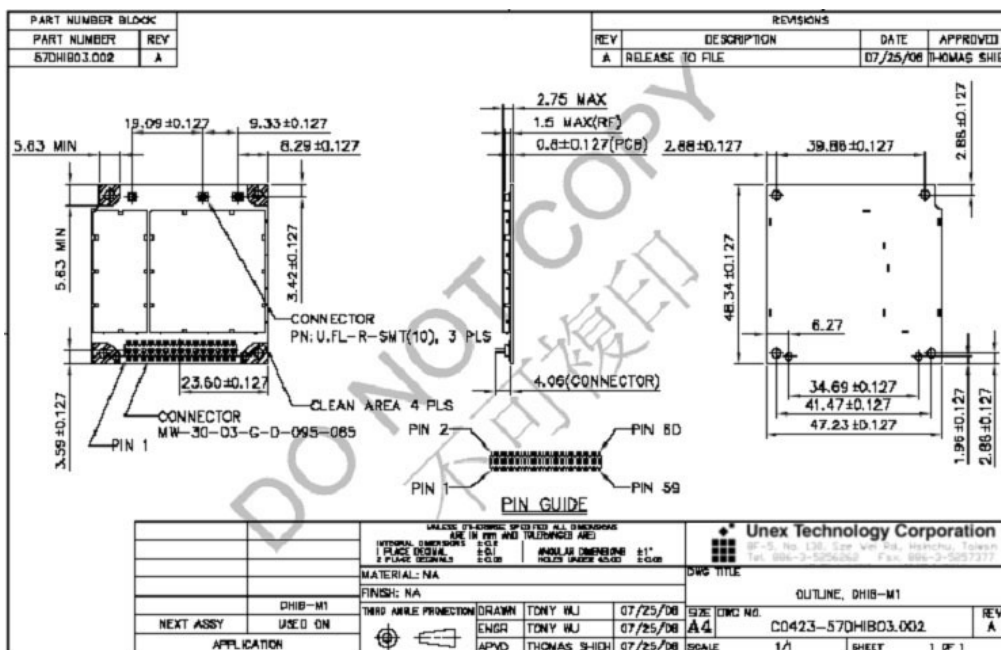
DDIB-M1 is an IEEE802.11a/b/g with Bluetooth Class 2 combo module designed specifically for embedded WiFi and Bluetooth coexistence in portable digital devices, laptops, consumer electronics and application-specific devices (ASDs) used in vertical market. Providing the performance, reliability, security, and low power consumption required for business-critical applications, DDIB-M1 CF interface on 802.11a/b/g and proprietary USB interface on Bluetooth enable new ergonomic application-specific devices to integrate WiFi and Bluetooth coexistence features via a single 60-pin board-to-board connector.

Optional Windows CE 4.2/5.0 driver enables ASD manufacturers to provide products that enjoy improved innovation and time to market through trouble-free WiFi and Bluetooth co-existence integration.

Key Features:

- 802.11a/b/g CF interface and Bluetooth 2.0 proprietary USB interface is ideal for embedding into new portable digital devices and ergonomic application-specific devices via a single 60-pin board-to-board connector.
- Windows 2000/XP/Vista and Windows Mobile 5.0 drivers assure trouble-free WiFi and Bluetooth co-existence integration.
- Optional WinCE4.2/5.0 drivers support by project provides highest design flexibility for integrators.
- Supports IEEE 802.11a/802.11b/802.11g auto fallback data rate allowing inter-operability among multiple wifi networks.
- Bluetooth 2.0 compliance and Enhanced Data Rate (EDR) capabilities provide superior wireless stereo to improve end-user experience.
- Supports 802.11 power saving mode minimizing overall system power requirements.
- Site survey function provides an easy-to-use visual approach to 802.11 design and verification.
- Supports 64/128-bit WEP, WPA encryption and IEEE 802.11x (EAP-TLS, PEAP), CCX, LEAP authentication providing advanced level of LAN security.
- 3-wire coexistence between 802.11a/b/g and Bluetooth 2.0 improves coexistence performance.
- RoHS compliance meets environment-friendly requirement.

Mechanical Outline



Pin definition


Pin No.	Pin Name	Type	Descriptions
1	BT_VCC	Power	DC Power Supply 3.3V±5%
2	BT_USBN	In/Out	Host USB Differential Data
3	PCM_OUT	Out	PCM Data Output — serial PCM data output to the PCM Codec. This data is synchronous with PCM_BCLK, and the first serial bit is qualified by PCM_SYNC.
4	BT_USBP	In/Out	Host USB Differential Data
5	PCM_IN	In	PCM Data Input — serial PCM data from the PCM Codec. This data is clocked in with PCM_BCLK, and the first serial bit is qualified by PCM_SYNC.
6	BT_GND	Ground	Digital Ground
7	BT_GND	Ground	Digital Ground
8	-IORD	NC	NC PIN
9	PCM_CLK	In/Out	In master mode, this is the clock output used by the PCM Codec to clock PCM_OUT into the Codec. In clock slave mode, this is an input.
10	-IOWE	NC	NC PIN
11	PCM_SYNC	In/Out	PCM Sync Signal (Slot 0) - In master mode, this is an 8 kHz sync signal for channel 0 that synchronizes the input and output serial data streams of the Codec. In slave mode, this is an input.
12	BT_WAKE	Output	Bluetooth device wake-up: Signal from the host to the Bluetooth device that the host requires attention. Asserted = Bluetooth device must wake-up or remain awake. Deasserted = Bluetooth device may sleep when sleep criteria are met.
13	GND	Ground	Digital Ground
14	D01	In/Out, 16mA	Host CF Card Data Bus, Bits 1
15	D00	In/Out, 16mA	Host CF Card Data Bus, Bits 0
16	WLAN_VCC	Power	DC Power Supply 3.3V±5%
17	D02	In/Out, 16mA	Host CF Card Data Bus, Bits 2
18	-CSTSCHG		
19	GND	Ground	Digital Ground
20	-REG	Input	When this signal is asserted, access is limited to attribute memory.
21	D10	In/Out, 16mA	Host CF Card Data Bus, Bits 10
22	-WAIT	Output, 16mA	The signal is driven low by the card to signal the host to delay completion of a memory or I/O cycle that is in progress.
23	GND	Ground	Digital Ground
24	D08	In/Out, 16mA	Host CF Card Data Bus, Bits 8
25	D09	In/Out, 16mA	Host CF Card Data Bus, Bits 9
26	-WE	Input, Pull high	Used to strobe Memory Write data into memory.
27	WLAN_VCC	Power	DC Power Supply 3.3V±5%
28	D12	In/Out, 16mA	Host CF Card Data Bus, Bits 12
29	GND	Ground	Digital Ground
30	RESET	Input, Pull high	Hardware Reset. Active high
31	-OE	Input, Pull high	Used to gate Memory Read data from memory. Hosts must negate the OE signal during write operations.
32	GND	Ground	Digital Ground
33	A10	Input	Host CF Card Address Input, Bits 10

Pin No.	Pin Name	Type	Descriptions
34	A09	Input	Host CF Card Address Input, Bits 9
35	A08	Input	Host CF Card Address Input, Bits 8
36	A07	Input	Host CF Card Address Input, Bits 7
37	A06	Input	Host CF Card Address Input, Bits 6
38	A05	Input	Host CF Card Address Input, Bits 5
39	A04	Input	Host CF Card Address Input, Bits 4
40	A03	Input	Host CF Card Address Input, Bits 3
41	A02	Input	Host CF Card Address Input, Bits 2
42	A01	Input	Host CF Card Address Input, Bits 1
43	A00	Input	Host CF Card Address Input, Bits 0
44	WLAN_VCC	Power	DC Power Supply 3.3V±5%
45	-IOIS16		
46	-CSEL	NC	NC PIN
47	-CE1	Input, Pull high	Host CF Card Select, Low Byte
48	-CE2	Input, Pull high	Host CF Card Select, High Byte
49	GND	Ground	Digital Ground
50	D15	In/Out, 16mA	Host CF Card Data Bus, Bits 15
51	D14	In/Out, 16mA	Host CF Card Data Bus, Bits 14
52	D13	In/Out, 16mA	Host CF Card Data Bus, Bits 13
53	D11	In/Out, 16mA	Host CF Card Data Bus, Bits 11
54	-IRQ	Output, 16mA	Interrupt Request. Asserted by the card to indicate to the host system that the device requires host software service.
55	GND	Ground	Digital Ground
56	D07	In/Out, 16mA	Host CF Card Data Bus, Bits 7
57	D06	In/Out, 16mA	Host CF Card Data Bus, Bits 8
58	D05	In/Out, 16mA	Host CF Card Data Bus, Bits 5
59	D04	In/Out, 16mA	Host CF Card Data Bus, Bits 4
60	D03	In/Out, 16mA	Host CF Card Data Bus, Bits 3

Specifications:	
Standard Conformance	802.11a, 802.11b, 802.11g, and Bluetooth 2.0
Frequency Range	<ul style="list-style-type: none"> ▪ 802.11a: 4.900 to 5.825GHz (channel 36~184) ▪ 802.11b: 2.400 to 2.497 GHz (channel 1~14) ▪ 802.11g: 2.400 to 2.4836 GHz (channel 1~13) ▪ Bluetooth: 2.400 to 2.4835 GHz (79 channels for USA)
Interface	<ul style="list-style-type: none"> ▪ single 60-pin board-to-board connector ▪ proprietary CF interface for 802.11a/b/g section ▪ proprietary USB 1.2 interface with PCM for Bluetooth section
Operation Voltage	3.3V ± 10%
Power Consumption	<ul style="list-style-type: none"> ▪ Bluetooth: <ul style="list-style-type: none"> ◦ FTP Tx: 58mA (avg.) ~ 65mA (max.) ◦ FTP Rx: 55mA (avg.) ~ 65mA (max.) ◦ Standby: 35mA (avg.) ~ 40mA (max.) ▪ 802.11a/b/g: <ul style="list-style-type: none"> ◦ FTP Tx: TBD ◦ FTP Rx: TBD ◦ Standby: TBD ◦ Power saving: TBD
Antenna Connectors	<ul style="list-style-type: none"> ▪ two Hirose U.FL ultra-miniature coaxial antenna connectors for WiFi ▪ one Hirose U.FL ultra-miniature coaxial antenna connector for Bluetooth

Specifications:	
Transmit Power Settings	<ul style="list-style-type: none"> ▪ 802.11a: +12.5 +/- 1.5dBm @ 6, 9, 12,18,24, 36, 48, 54Mbps ▪ 802.11b: +17.5 +/- 1.5dBm @ 1,2,5.5, 11Mbps ▪ 802.11g: +13.5 +/- 1.5dBm @ 6, 9, 12,18,24, 36, 48, 54Mbps ▪ Bluetooth: 0dBm (typical), +4dBm (max. for Class 2 device)
Receiver Sensitivity	<ul style="list-style-type: none"> ▪ 802.11a: <ul style="list-style-type: none"> ▫ -84dBm @ 6Mbps ▫ -83dBm @ 9Mbps ▫ -81dBm @ 12Mbps ▫ -79dBm @ 18Mbps ▫ -76dBm @ 24Mbps ▫ -72dBm @ 36Mbps ▫ -68dBm @ 48Mbps ▫ -67dBm @ 54Mbps ▪ 802.11b: <ul style="list-style-type: none"> ▫ -91dBm @ 1Mbps ▫ -89dBm @ 2Mbps ▫ -87dBm @ 5.5Mbps ▫ -84dBm @ 11Mbps ▪ 802.11g: <ul style="list-style-type: none"> ▫ -85dBm @ 6Mbps ▫ -84dBm @ 9Mbps ▫ -82dBm @ 12Mbps ▫ -80dBm @ 18Mbps ▫ -77dBm @ 24Mbps ▫ -73dBm @ 36Mbps ▫ -69dBm @ 48Mbps ▫ -68dBm @ 54Mbps ▪ Bluetooth: <ul style="list-style-type: none"> ▫ -82dBm typical for GFSK, 0.1% BER@ 1Mbps ▫ -82dBm typical for pi/4-DQPSK, 0.01% BER@ 2Mbps ▫ -79dBm max. for 8-DPSK, 0.1% BER@ 3Mbps
Security	<ul style="list-style-type: none"> ▪ 64-bit /128-bit WEP and WPA encryption ▪ 802.1x (EAP-TLS, PEAP), CCX, and LEAP authentication
Operation Systems Supported	Windows 2000/XP/Vista and Windows Mobile 5.0
Dimension	48.34 x 47.23 x 2.75mm
Operation Temperature Range	0°C ~ +60°C
Storage Temperature Range	-20°C ~ +80°C
Operating Humidity	5% ~ 95%, non-condensing
Storage Humidity	max. 95%, non-condensing
Environment-Friendly Compliance	RoHS

Ordering Information:	
DDIB-M1	802.11a/b/g wifi CF and Bluetooth USB combo module, BCM4318E+BCM2060+BCM2045

	<h2>Unex Technology Corp.</h2> <p>- Durable Bridge to Wireless</p>	<p>Sales-a@unex.com.tw http://www.unex.com.tw</p>
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