Shenzhen Ktc Commercial Display Technology WF-M68B-UWK1 WiFi Module Instructions

Contents

SHENZHEN

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Product Description

The Moudule is highly integrated single chip which features a low power 2×2 11a/b/g/n/ac dual- band WIFI subsystem and a Bluetooth subsystem .The WIFI subsystem contains the 802.11a/b/g/n/ac radio,baseband ,and MAC that are designed to meet both the low power and high throughput application.The Moudule has a 32-bit RISC MCU that handles WIFI and Bluetooth tasks,and an ARM Cortex-R4 MCU the could offload data frame processing in WIFI host driver. The Bluetooth subsystem contains the Bluetooth radio,baseband,link controller.it alse uses the 32-bit RISC MCU for the Bluetooth protocols.The 32-bit RISC MCU is used to do clock control,power management,and host interface configuration.ARM cortex R4 is used to do host CPU management for WIFI,PDMA engines are integrated to support on-the-fly data buffer management.The host interface USB3.0/USB2.0 are integrated to provid stable bandwidth between the host platform and Moudule.Thte clock rate of the intimal bus fabric can also support the throughput the requirement .The clock rate of MCU is also configurable for different kinds of scenarios.

Product Specification

For BT_LE	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	Bluetooth LE

Type of Modulation:	GFSK
Number of Channels:	40
Channel Separation:	2 MHz
Antenna Type:	Integral Antenna
Antenna Gain:	1.7 dBi
For BT_EDR	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2402 MHz to 2480 MHz
Bluetooth Version:	Bluetooth EDR
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Type of Modulation:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79

Channel Separation:	1 MHz
Antenna Type:	Integral Antenna
Antenna Gain:	1.7dBi

For 2.4 GHz ISM Band of Wi-Fi	
Frequency Band:	2400 MHz to 2483.5 MHz
Frequency Range:	2412 MHz to 2462 MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM(64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11 n-HT40: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7 IEEE 802.11n-HT40: Up to MCS7

Number of Channels:	IEEE 802.11b: 11 IEEE 802.11g: 11 IEEE 802.11n-HT20: 11 IEEE 802.11n-HT40: 9
Channel Separation:	5 MHz
Antenna Type:	Integral Antenna
Antenna Gain:	2.7 dBi

For 5 GHz U-NII Bands of Wi-Fi	
Frequency Bands:	5150 MHz to 5250 MHz (U-NII-1)
	5250 MHz to 5350 MHz (U-NII-2A)
	5470 MHz to 5725 MHz (U-NII-2C)
	5 725 MHz to 5 850 MHz (U-NII-3)
	5180 MHz to 5240 MHz
	5260 MHz to 5320 MHz

Frequency Ranges:	5500 MHz to 5700 MHz
	5 745 MHz to 5 825 MHz
Support Standards:	IEEE 802.11a/n/ac
TPC Function:	Not Support
DFS Operational mode:	Slave without radar Interference detection function
Type of Modulation:	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK)
	IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK)
	IEEE 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	IEEE 802.11a/n-HT20/ac-VHT20: 20 MHz
	IEEE 802.11n-HT40/ac-VHT40: 40 MHz
	IEEE 802.11ac-VHT80: 80 MHz
Data Rate:	IEEE 802.11a: Up to 54 Mbps
	IEEE 802.11n-HT20: Up to MCS15

	IEEE 802.11n-HT40: Up to MCS15
	IEEE 802.11ac-VHT20: Up to MCS8

	IEEE 802.11ac-VHT40: Up to MCS9
	IEEE 802.11ac-VHT80: Up to MCS9
Number of Channels:	5150 MHz to 5250 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40)/ac-VHT40 1 for IEEE 802.11acVHT80
	5250 MHz to 5350 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40)/ac-VHT40 1 for IEEE 802.11acVHT80
	5470 MHz to 5725 MHz: 11 for IEEE 802.11a/n-HT20/ac-VHT20 5 for IEEE 802.11n-HT40/ac-VHT40 2 for IEEE 802.11ac-VHT80

	5725 MHz to 5850 MHz: 5 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40/ac-VHT40 1 for IEEE 802.11ac-VHT80
Antenna Type:	Integral Antenna
Antenna Gain:	5150 MHz to 5250 MHz: 2.7 dBi
	5250 MHz to 5350 MHz: 2.7dBi
	5470 MHz to 5725 MHz: 2.7 dBi
	5725 MHz to 5850 MHz: 2.7 dBi

NOTICE:

- please keep this product and accessories attached to the places which children can’t touch;
- do not splash water or other liquid onto this product, otherwise it may cause damage;
- do not put this product near the heat source or direct sunlight, otherwise it may cause deformation or malfunction;
- please keep this product away from flammable or naked flame;
- please do not repair this product by yourself. Only qualified personnel can be repaired.

FCC Statement

- List of applicable FCC rules
  This device complies with FCC part 15C : 15.247&15.407
- Summarize the specific operational use conditions
  This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. And the module should be installed at a minimum distance of 20 cm away from person nearby. The host product manufacturer should state this information to the host instruction manual.

- Trace antenna designs
  Not applicable.
- RF exposure considerations
  This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This modular must be installed and operated with a minimum distance of 20 cm between the radiator and user body.
- Antennas
  Antenna Type: Integral Antenna
  BT Antenna Gain: 1.7 dBi
  WIFI Antenna Gain: 2.7 dBi

The antenna is permanently attached and not considered of replacement.

- Label and compliance information
  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: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment 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 equipment 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help. If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed

module. This exterior label can use wording such as the following:
"Contains Transmitter Module FCC ID: 2AQ5RWF-M68B-UWK1 Or Contains FCC ID: 2AQ5RWF-M68B-UWK1

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

- Information on test modes and additional testing requirements Any final host product with the modular transmitter installed should be under test according to the guidance given in KDB 996369 D04. To enter test mode for module, WCN_Combo_Tool_Setup_customer and QATool_Dbg software and command is necessary. When something wrong happens in configuring test modes for a host products with module, host product manufacturer should coordinate with the module manufacturer for technical support. It is recommended that

some investigative measurements should be taken to confirm that host product with module installed does not exceed the spurious emissions limits or band edge limits.

- Additional testing, Part 15 Subpart B disclaimer The modular transmitter is only FCC authorized for the specific rule parts (FCC Part 15.247&15.407) list on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed when contains digital circuity.

Documents / Resources

	Shenzhen Ktc Commercial Display Technology WF-M68B-UWK1 WiFi Module [pdf] Instructions WF-M68B-UWK1, WFM68BUWK1, 2AQ5RWF-M68B-UWK1, 2AQ5RWFM68BUWK1, WF-M68B-UWK1 WiFi Module, WiFi Module