Application Note

Pin Mapping for USI WM-BN-BM-22A Wi-Fi Module

Version: 1.0

Date Released: March 8, 2018

Document Number: AY006AUB6-1

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Referenced Documents

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Revision History

Revision	Date	Author	Change Description
1	2018-03-10	J. Eykholt	Initial document

1 Introduction

This document describes the pin mapping for the Ayla features of the USI WM-BN-BM-22A.

1.1 Intended Audience

This document is intended for programmers and hardware engineers that need to connect the USI WM-BN-BM-22A module to other hardware components. This document contains descriptions of the Ayla signals present on each of the USI WM-BN-BM-22A pins.

1.2 Related Documentation

Setup for USI WM-BN-BM-22A Module *(<document to come>)*

2 Signal Pin-outs

Ayla Signal Name	Ayla GPIO Pin Name	BM-22 Signal Name	BM-22 Pin	I/O	Description
SPI_SSN	PA4	I2S_WS	2	I	SPI Slave Select
SPI_SCK	PA5	MICRO_GPIO_0	8	I	SPI Clock
SPI_MOSI	PA7	qSPI_IO1	31	I	SPI Master Out Slave In
SPI_MISO	PA6	qSPI_IO0	36	O	SPI Master In Slave Out
MCU_UART_TX	PB10	I2S_MCLK	3	O	MCU UART Transmit
MCU_UART_RX	PC5	qSPI_IO3	34	I	MCU UART Receive
MCU_UART_CTSn	PB13	MICRO_SPI_CK	24	I	MCU UART CTS
MCU_UART_RTSn	PB14	MICRO_GPIO_7	53	O	MCU UART RTS
READY_N	PC3	MICRO_SPI_MOSI	23	O	Module Initialized
INTR_N	PC4	qSPI_IO2	32	O	Interrupt Output
RESET_N	nRESET	MICRO_RST_N	26	I/O	Module Reset
LINK_N			-		Can be assigned to GPIO
WKUP	PC0	MICRO_WKUP	27	I/O	Wakeup from standby
GPIO	PA11	MICRO_USB_HS_DP	51	I/O	See note
GPIO	PA12	MICRO_USB_HS_DN	52	I/O	See note
GPIO	PB0	MICRO_GPIO_1	7	I/O	See note
GPIO	PB1	MICRO_GPIO_2	6	I/O	See note
GPIO	PB2	qSPIO_CLK	35	I/O	See note
GPIO	PB6	AUTH_SCL	10	I/O	See note
GPIO	PB7	AUTH_SDA	11	I/O	See note
GPIO	PB9	MICRO_SPI_SSN	22	I/O	See note
GPIO	PC2	MICRO_SPI_MISO	25	I/O	See note
GPIO	PC11	qSPI_NCS	33	I/O	See note
GPIO	PC13	AUTH_RST	9	I/O	See note
GPIO	PC15	MICRO_GPIO_3	5	I/O	See note

Important: RESET_N is internally pulled high and will be driven low for at least 20 microseconds when the module resets for any reason.

In the table, pins with Ayla Signal Name “GPIO” (general purpose I/O) are available as properties in GPIO mode – or as status pins in any mode that uses the “gpio” CLI command during OEM configuration. These can be used for various conditions, including: ready, interrupt, link status LED, Wi-Fi status LED, I2C, etc. If unused, these pins can be left unconnected.

3 Additional Pins

Module Pin Name	Module Pins	Description
VDD_WIFI	19, 20	3.3 V DC Supply for Module
VDD_3V3	46, 47	3.3 V DC Supply for Module
VDDIO_WIFI	49	3.3 V DC Supply for Module I/Os
VBAT	28	Battery back-up for RTC and NVRAM (optional)
GND	12, 14, 16-18, 21, 29, 30, 37, 45, 48, 50, 55-68, 70, 74, 83	
BOOT0	54	Must be grounded

4 Programming Pins

The pins required to program, configure and update the firmware are listed below.

BM-22 Signal Name	BM-22 Pin	I/O	Description
MICRO_UART_TX	39	O	Console Transmit
MICRO_UART_RX	38	I	Console Receive
MICRO_JTAG_TMS	44	I/O	JTAG SWD Data
MICRO_JTAG_TCK	40	I	JTAG SWD Clock
MICRO_JTAG_TDO	41	O	JTAG data out (not needed in SWD mode)
MICRO_JTAG_TRSTN	42	I	JTAG reset (not needed in SWD mode)
MICRO_JTAG_TDI	43	I	JTAG data in (not needed for SWD mode)

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