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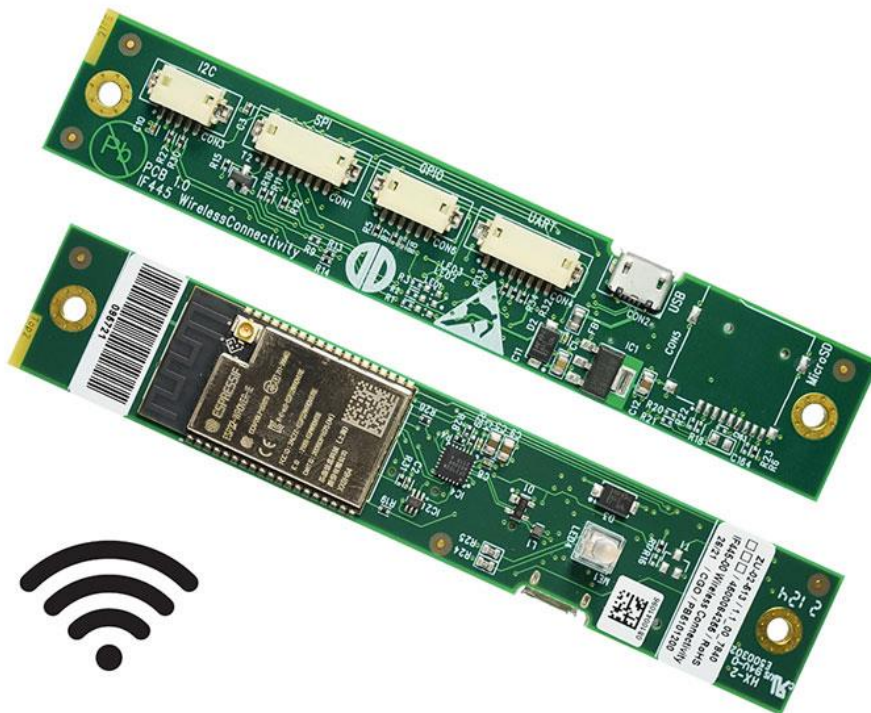
Datasheet

Distec

IF445-00 Wireless Connectivity

Communication device

ZU-02-513



Version 1.1

14.03.2022

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1 Revision History

Date	Rev.No.	Description	Page
13.07.2021	1.0	Initial version	All
14.03.2022	1.1	Updated all Chapters	All

2 Overview

The Wireless Connectivity Board is a signal converter between the Wi-Fi and TTL-compatible UART interface. It is based on the ESP32-WROVER-IE SoC module with an external antenna. This device can be used to control e.g. the Mstar OSD adjustments or for I²C communication.

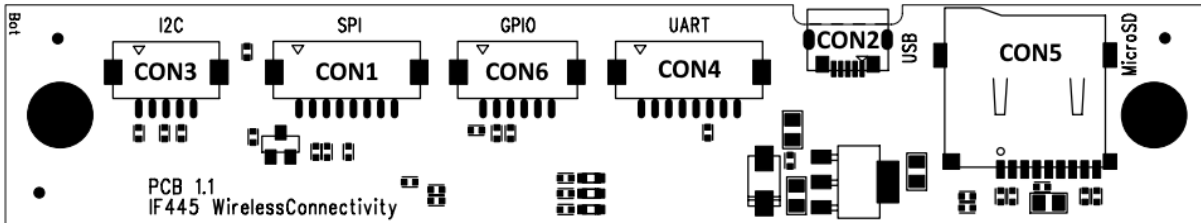
3 IC Hardware Overview

- SPI Interface
- UART Interface
- 4x GPIO's, 1x GPI
- I2C (Master and Slave mode possible)
- USB to TTL-compatible UART
- SD-Card interface (On request)
- Wi-Fi (2.4 GHz band)

The ESP32 SoC module have more functions, please see also

https://www.espressif.com/sites/default/files/documentation/esp32-wrover-e_esp32-wrover-ie_datasheet_en.pdf

4 Connector Overview



Connectors	Description	Type (Ref only)	Manufacturer (Ref only)
CON1	SPI Programming	DF13- 8P-1.25H	Hirose
CON2	USB Micro	USB3075-30-A	GCT
CON3	I2C	DF13-5P-1.25H	Hirose
CON4	UART	DF13-8P-1.25H	Hirose
CON5	SD Card (On request)	0201D	Nexus Components
CON6	GPIO Connector	DF13-6P-1.25H	Hirose

CON1: SPI PROGRAMMING HEADER			
Pin	ESP32 Pin	Signal	Description
1		SPI_PROG_EN#	Enable Signal
2	IO18	SPI_CLK_FLASH	SPI Clock
3	IO19	SPI_SI_FLASH	SPI_SI
4	IO23	SPI_SO_FLASH	SPI_SO
5	IO5 (1)	SPI_CS (1)	SPI_CS
6	IO32 (1)	MSTAR_RESET_N (1)	MSTAR_RESET_N
7		GND	GND
8		+3.3V	+3.3V Power Input

Notes:

- 1) Output Driver Strength max. 20mA

CON2: USB MICRO CONNECTOR		
Pin	Signal	Description
1	VBUS	+5V USB Bus
2	D-	USB Data -
3	D+	USB Data +
4	NC	NC
5	GND	Ground

CON3: I2C CONNECTOR			
Pin	ESP32 Pin	Signal	Description
1		+3.3V_Output	+3.3V Power Output
2		GND	Ground
3	IO22 ⁽¹⁾	SCL	I2C Clock
4	IO21 ⁽¹⁾	SDA	I2C Data
5	SENSOR_VN ⁽²⁾	INT	Interrupt, General Purpose Input

Notes:

- 1) Pullup with an 4.75kΩ resistor
- 2) Pin is floating

CON4: UART (TTL output)			
Pin	ESP32 Pin	Signal	Description
1		GND	Ground
2		-	Not connected
3	IO13	RX	Receive Data
4	IO15 ⁽²⁾	TX ⁽²⁾	Transmit Data
5	IO2 ^(1,3)	GPIO2 ⁽¹⁾	General Purpose IO
6	IO34 ⁽²⁾	IO34 (GPI) ⁽²⁾	General Purpose Input
7		+3.3V	+3.3V Power Input
8		GND	Ground

Notes:

- 1) IO2 must be 0V in programming Mode.
- 2) Pullup with an 10kΩ resistor
- 3) Output Driver Strength max. 20mA

CON5: SD CARD (1) (Not Assembled)		
Pin	Signal	Description
1	DAT2	Data Line 2
2	DAT3	Data Line 3
3	CMD	Command
4	+3.3V	Power
5	CLK ³⁾	Data Clock
6	GND	Ground
7	DAT0	Data Line 0
8	DAT1	Data Line 1
9	SW	Card detect switch
10	GND	Ground

Notes:

- 1) The SD-CARD interface is operated in SPI mode.

CON6: GPIO CONNECTOR			
Pin	ESP32 Pin	Signal	Description
1	GPI35 (2)	GPI35 (2)	General Purpose Input
2	GPIO25 (1)	GPIO25 (1)	General Purpose IO
3	GPIO26 (1)	GPIO26 (1)	General Purpose IO
4	GPIO12 (1)	GPIO12 (1)	General Purpose IO
5	GPIO14 (1)	GPIO14 (1)	General Purpose IO
6		GND	Ground

Notes:

- 1) Output Driver Strength max. 20mA
- 2) Pullup with an 10kΩ resistor

5 Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit	Note
VBUS (CON2)	VBUS _(5V)	0	5.5	VDC	
+3.3V Power Input	+3.3V	0	3.6	VDC	
Storage Temperature	T _{St}	-20	+85	°C	
Operating Temperature	T _{Op}	-20	+80	°C	

Note (1) Within operating temperature range.

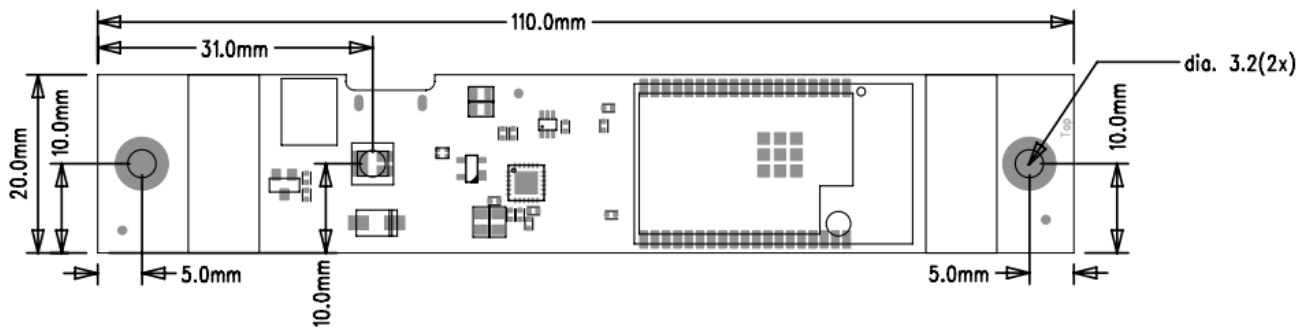
6 Electrical Characteristics

All measurements done at 25°C ambient temperature.

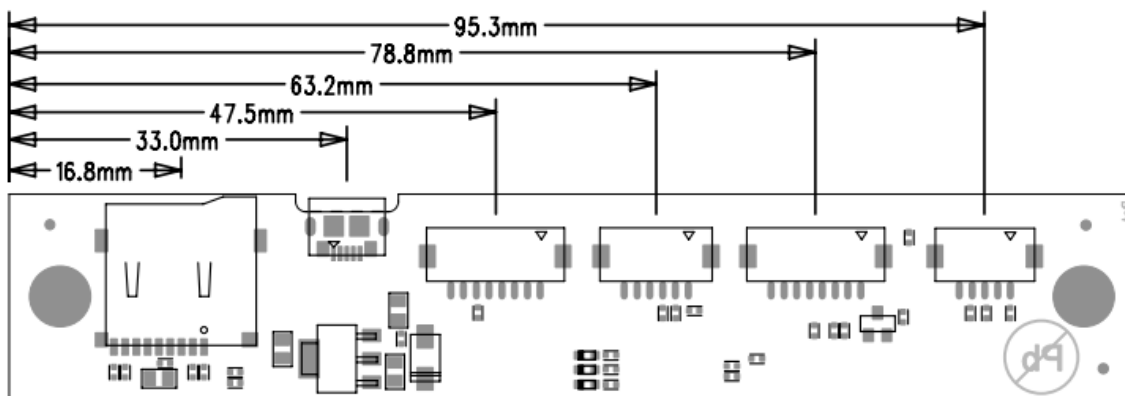
Item	Condition	MIN.	TYP.	MAX.	Unit	Note
VBUS (CON2)			5		VDC	
+3.3V Power Input		3.0V	+3.3V		VDC	
GPIO25, GPIO26, GPIO12, GPIO14, SPI_CS, MSTAR_RESET_N, GPIO2				20	mA	

7 Mechanical Dimension

Top-Side:



Bottom-Side:



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