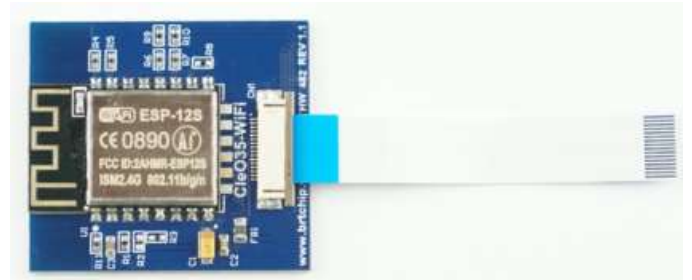


# Bridgetek Pte Ltd

## Datasheet

### CleO35-WIFI Module



## 1 Introduction

The CleO35-WIFI module is a Wi-Fi accessory for the CleO series – the smart TFT display for Arduino. Designed with an ESP-12S Wi-Fi module from Ai-thinker using core processor ESP8266, the ESP8266 is among the most integrated Wi-Fi chips in the industry. Measuring just 5mm X 5mm, it requires minimal external circuitry and integrates a 32-bit Tensilica MCU, digital peripheral interface, antenna switch, RF balun, power amplifier, low noise receive amplifier, filters and power management modules all in one small package.

The CleO35-WIFI module comes with a standard 16 pin 0.5mm pitch FFC cable, suitable for connecting directly to CleO35 modules or via the CleO\_IO Shield to CleO50 modules enabling wireless communications to the system.

As a plug in accessory to CleO it extends the CleO modules capabilities to include wireless monitor and control for smart devices around the home.

### 1.1 Features

The CleO35-WIFI consists of ESP-12S WIFI module developed by Ai-thinker using an ESP8266. For the full list of ESP8266's features, refer to the [ESP8266 Datasheet](#). In addition, CleO35-WIFI has the following features:

- Supports standard IEEE802.11 b/g/n
- Integrated low power 32-bit MCU
- Wi-Fi 2.4GHz, Support WPA/WPA2
- Support STA/AP/STA+AP operation mode
- +20dBm output power in 802.11b mode
- On board PCB antenna
- Compatible with Bridgetek CleO35
- 16 Pin 0.5mm Pitch FFC Flex interface

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## 2 Ordering Information

<b>Part No.</b>	<b>Description</b>
CleO35-WiFi1	Wi-Fi accessory, built-in ESP-12S Wi-Fi module with 16pin 0.5mm pitch FFC flex interface

## 3 Program Support

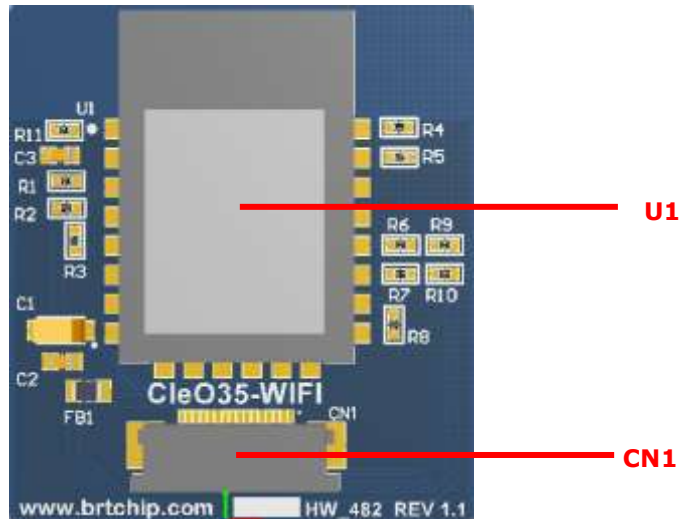
Demo applications are provided for CleO Wi-Fi modules by Bridgetek. Visit Bridgetek's website <http://brtchip.com/m-cleo/> for more information.

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## 4 Pin Out and Signal Description

### 4.1 Module Description



**Figure 1 – CleO35-WIFI Top View**

No	Feature	Reference Designator
1	ESP-12S WIFI Module	U1
2	16 pin 0.5mm pitch FFC Connector	CN1

**Table 1 - Module Feature Description**

### 4.2 Module Interface Signal Description

The pin description of **CN1** is given in **Table 2**.

Pin No	Pin Name	Type	Description
1	WIFI_RST	Input	Reset Wi-Fi module (Active low signal)
2	WIFI_EN	Input	Enable Wi-Fi module ('1' to enable module)
3	WIFI_CFG0	I/O	GPIO0
4	-	NC	No connection
5	VDD_3V3	Power	3V3 Supply
6	GND	Ground	Power ground
7	-	NC	No connection
8	-	NC	No connection
9	WIFI_TXD	Output	UART TXD
10	WIFI_RXD	Input	UART RXD

---

11	VDD_3V3	Power	3V3 Supply
12	GND	Ground	Power ground
13	-	NC	No connection
14	-	NC	No connection
15	-	NC	No connection
16	-	NC	No connection

**Table 2 - CN1 Pin Description**

Note: GPIO 0 is configurable which can determines the booting mode

'0' : boot from UART

'1' : boot from flash boot

## 5 Device Major Parameters

### 5.1 Parameters

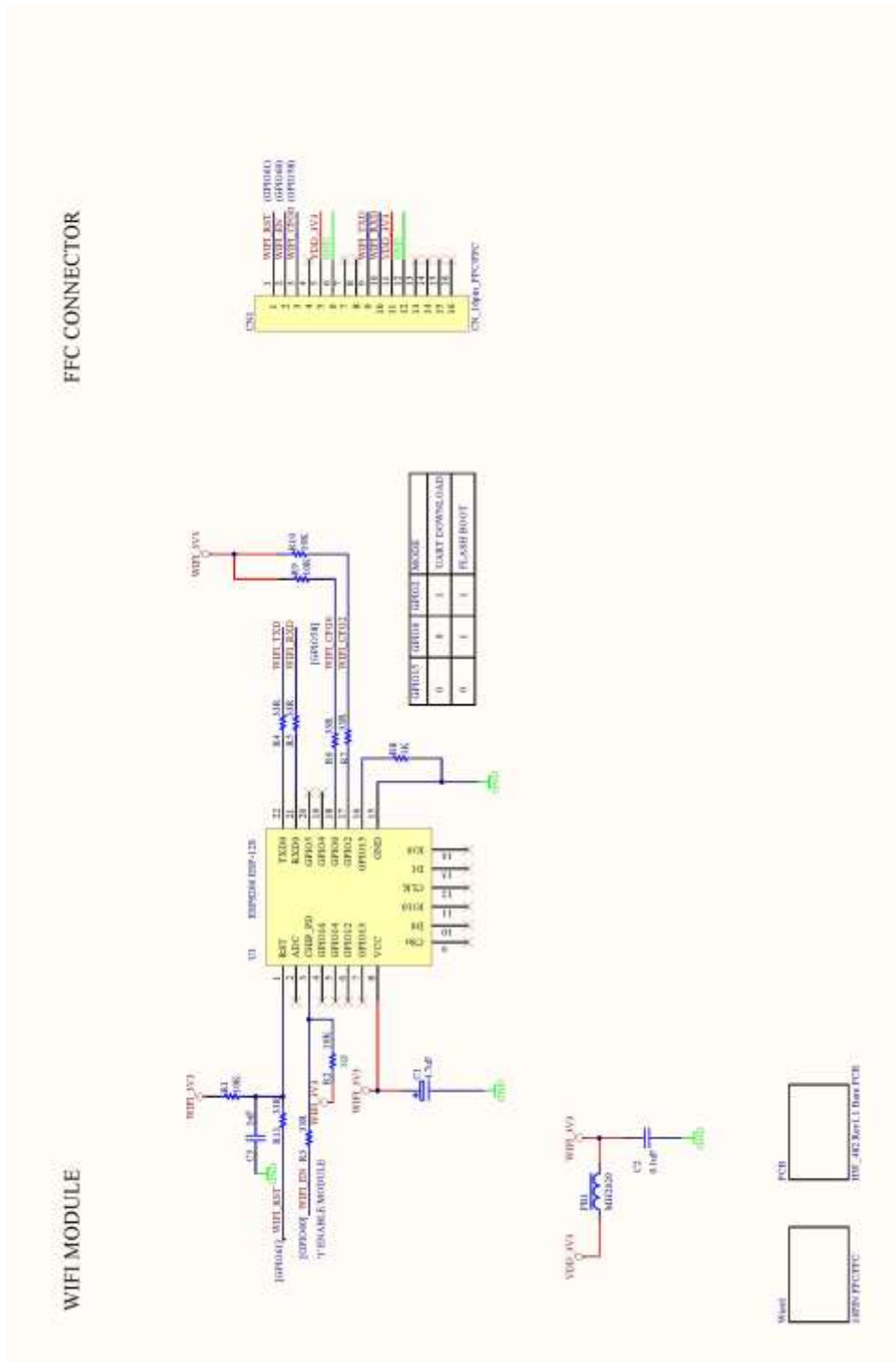
Categories	Items	Values
WiFi parameters	Wi-Fi Protocols	802.11 b/g/n
	Frequency Range	2.4GHz -2.5GHz (2400M-2483.5M)
Hardware Parameters	Operating Voltage	3.3V
	Operating Current	80mA (Average)
	Operating Temperature Range	-40 °C ~ 125 °C
	Ambient Temperature Range	Normal Temperature
	External Interface	N/A
Software Parameters	Wi-Fi Mode	Station/SoftAP/SoftAP+Station
	Security	WPA/WPA2
	Network Protocols	IPv4,TCP/UDP/HTTP/FTP
	User Configuration	AT Instruction Set, Cloud Server, Android/iOS App
	Firmware Upgrade	UART Download/OTA(via network)/download and write firmware via host

**Table 3 - Parameters**

Parameters	Min	Typical	Max	Unit
Frequency Range	2.4		2.4825	GHz
Impedance		50		Ohm

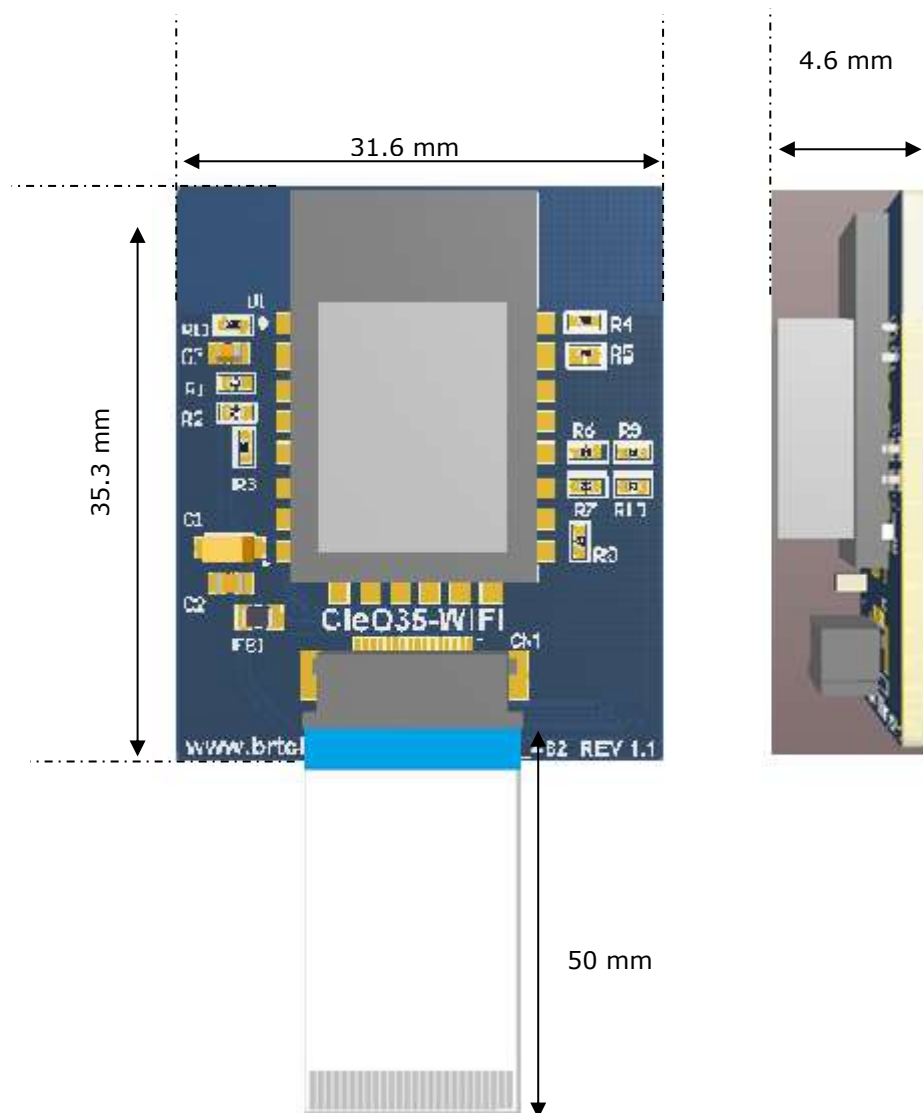
**Table 4 – Antenna Parameters**

## 6 Board Schematics



**Figure 2 - Sheet 1 – CleO35-WIFI Board**

## 7 Mechanical Dimensions



**Figure 3 – CleO35-WIFI Module Dimensions**



## 8 Contact Information

### Head Quarters – Singapore

Bridgetek Pte Ltd  
178 Paya Lebar Road, #07-03  
Singapore 409030  
Tel: +65 6547 4827  
Fax: +65 6841 6071

E-mail (Sales) [sales.apac@brtchip.com](mailto:sales.apac@brtchip.com)  
E-mail (Support) [support.apac@brtchip.com](mailto:support.apac@brtchip.com)

### Branch Office – Taipei, Taiwan

Bridgetek Pte Ltd, Taiwan Branch  
2 Floor, No. 516, Sec. 1, Nei Hu Road, Nei Hu  
District  
Taipei 114  
Taiwan, R.O.C.  
Tel: +886 (2) 8797 5691  
Fax: +886 (2) 8751 9737

E-mail (Sales) [sales.apac@brtchip.com](mailto:sales.apac@brtchip.com)  
E-mail (Support) [support.apac@brtchip.com](mailto:support.apac@brtchip.com)

### Branch Office - Glasgow, United Kingdom

Bridgetek Pte. Ltd.  
Unit 1, 2 Seaward Place, Centurion Business Park  
Glasgow G41 1HH  
United Kingdom  
Tel: +44 (0) 141 429 2777  
Fax: +44 (0) 141 429 2758

E-mail (Sales) [sales.emea@brtchip.com](mailto:sales.emea@brtchip.com)  
E-mail (Support) [support.emea@brtchip.com](mailto:support.emea@brtchip.com)

### Branch Office – Vietnam

Bridgetek VietNam Company Limited  
Lutaco Tower Building, 5th Floor, 173A Nguyen  
Van Troi,  
Ward 11, Phu Nhuan District,  
Ho Chi Minh City, Vietnam  
Tel : 08 38453222  
Fax : 08 38455222

E-mail (Sales) [sales.apac@brtchip.com](mailto:sales.apac@brtchip.com)  
E-mail (Support) [support.apac@brtchip.com](mailto:support.apac@brtchip.com)

### Web Site

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### Distributor and Sales Representatives

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## Appendix A – References

### Document References

For module documentations, please refer to URL below:

ESP8266 Datasheet : [\\_ESP8266 Datasheet](#)

ESP-12S Datasheet : [\\_ESP-12S Datasheet](#)

Arduino: <https://www.arduino.cc/>

CleOStuff tools: [CleOstuff](#)

### Acronyms and Abbreviations

Terms	Description
CCK	Complementary Code Keying
DSSS	Direct-Sequence Spread Spectrum
OFDM	Orthogonal Frequency-Division Multiplexing
MCU	MicroController Unit
UART	Universal Asynchronous Receiver/Transmitter
WPA	Wi-Fi Protected Access

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## Appendix C – Revision History

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Product Page: <http://brtchip.com/m-cleo/>  
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Revision	Changes	Date
Version 1.0	Initial Release	2017-06-09

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