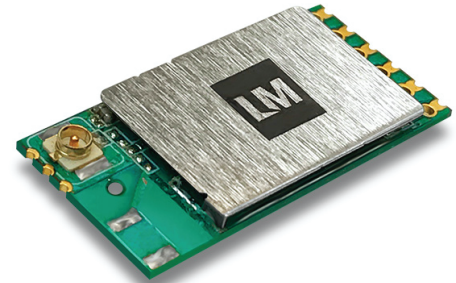
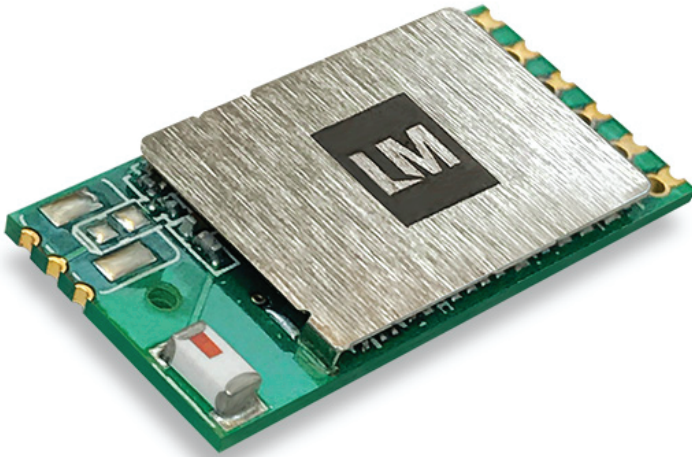




LM822 WiFi 802.11 b/g/n Module with IC Antenna

Host Controller Interface (HCI) via USB Interface

Product LM822
Part No See Last Page
Revised 13/MAR/2018
Datasheet Version 1.1



Also available with IPEX Receptical (LM823)

Features

- WiFi 802.11 b/g/n
- Operates in 2.4 GHz Frequency bands
- Onboard Chip Antenna
- Plug and Play (Linux, macOS X, Windows XP – 10, Windows 10 IoT Core and Windows Compact Embedded 6/7 compatible)
- Up to 150Mbps Data Transfer Rate
- 802.11e-compatible bursting and I standards
- BPSK, QPSK, 16 QAM and 64 QAM modulation schemes
- WEP, TKIP, and AES, WPA and WPA2 encryption schemes
- Fully-featured software utility for easy configuration and management

- RoHS, REACH and WEEE compliant
- See our website for this products certifications.

Optional Features

- DC power input 3.3V or 5V
- WPS or PDN control function on half-hole pin 6
- Support LED function when choose WPS option

Overview

The LM822 WiFi USB module fully supports the IEEE 802.11 b, g and n standards.

It supports up to 150Mbps high-speed wireless network connections and is designed to provide excellent performance with low power consumption.

It is designed to be a highly cost-effective module that offers superior performance, better power management applications above its competitors.

Antenna Option - IPEX

This module is also offered with an IPEX receptical for increased range and for placing the module in a different location to the selected antenna. Please speak with our team for guidance when looking at this option.

LM822 WiFi 802.11 b/g/n Module with IC Antenna

Host Controller Interface (HCI) via USB Interface

Product
Part No

LM822
See Last Page

General Specification

Wireless

Wireless Standard	802.11 b/g/n, 802.3, and 802.3u
Module Type	Host Controller Interface (HCI)
OS Compatibility	Linux, macOS X, Windows XP – 10, Windows 10 IoT Core and Windows Embedded Compact 6/7
Security	WEP, TKIP, AES, WPA and WPA2
Network Architecture	Ad hoc mode (Peer-to-Peer) and Infrastructure mode (supported on Linux and Windows 8.1 or earlier)

Hardware

Chipset	Realtek
Antenna	Onboard Chip Antenna
Interfaces	USB 2.0 (Full Speed)

RF Characteristics

Tx Output Power	(+/- 2dBm): 13dBm@11n, 17dBm@11b, 15dBm@11g
Rx Sensitivity	11Mbps -80dBm@8%, 54Mbps -70dBm@10%,130Mbps -64dBm@10%
Range (in open space)	Up to 180m
Current Consumption (DC 5V Module)	Transmit: 125 mA (Maximum) Receive: max 105 mA DC (Maximum)
Current Consumption (DC 3V3 Module)	Transmit: max. 172 mA (Maximum) Receive: max 139 mA (Maximum)
Data Transfer Rate	1,2,5,5.6,11,12,18,22,24,30,36,48,54,60,90,120 Mbps to a maximum of 150Mbps
Frequency	2.4GHz ISM Band
Modulation Scheme	BPSK/ QPSK/ 16-QAM/ 64-QAM
Spread Spectrum	IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE 802.11g/n: OFDM (Orthogonal Frequency Division Multiplexing)

Physical Characteristics

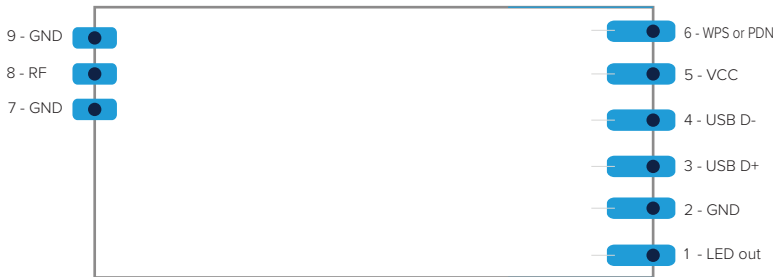
Operating Temperature	-20°C to +85°C ambient temperature
Humidity	5% to 90% maximum (non-condensing)
Dimensions (L x W x H)	25mm x 12mm x 2mm
Weight	1.03g +/- 0.25g tolerance
Certifications	See our website for this products certifications.
Compliance	RoHS, REACH and WEEE

LM822 WiFi 802.11 b/g/n Module with IC Antenna

Host Controller Interface (HCI) via USB Interface

Product LM822
Part No See Last Page

Pin Outs



DC Power Input:

Module	Min	Typical	Max	Unit
DC 5V	4.75	5	5.25	V
DC 3.3V	3.135	3.3	3.465	V

Pin Assignments

Pin	Pin Name	Type	Description
1	LED out	Output	LED output
2	GND	Ground	Common Ground
3	USB D+	I/O	USB D+
4	USB D-	I/O	USB D-
5	VCC	Power	DC Power Supply (Refer to DC Power Input table)
6	WPS or PDN	I/O	WiFi Protected Setup switch or Power Down switch (factory option)
7	GND	Ground	Common Ground
8	RF	-	Do not connect
9	GND	Ground	Common Ground



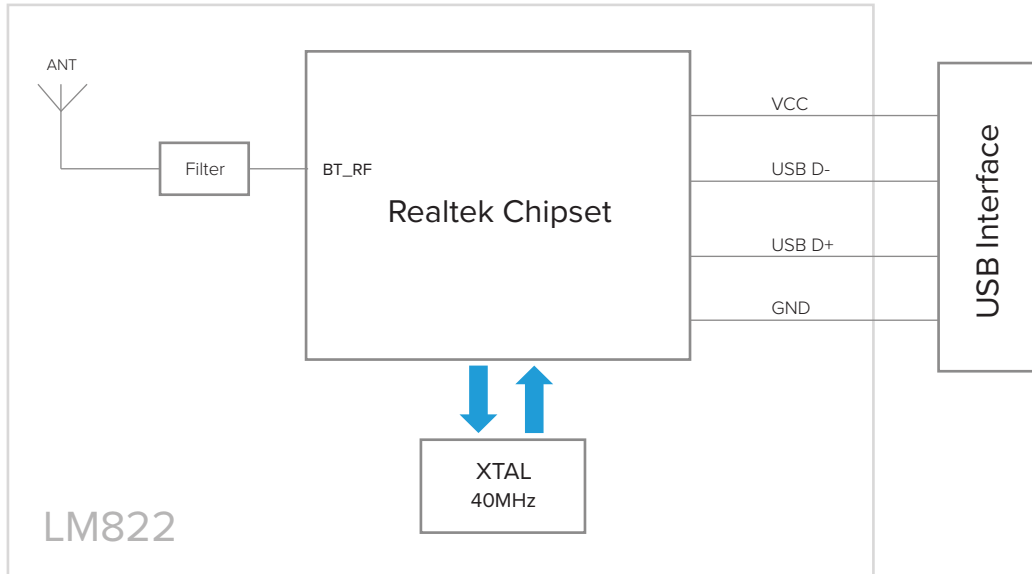
LM822 WiFi 802.11 b/g/n Module with IC Antenna

Host Controller Interface (HCI) via USB Interface

Product
Part No

LM822
See Last Page

Module Block Diagram



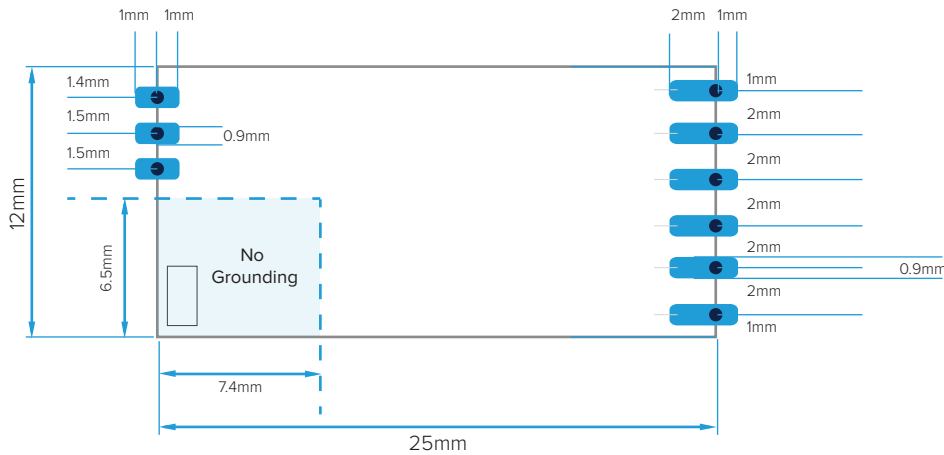
LM822 WiFi 802.11 b/g/n Module with IC Antenna

Host Controller Interface (HCI) via USB Interface

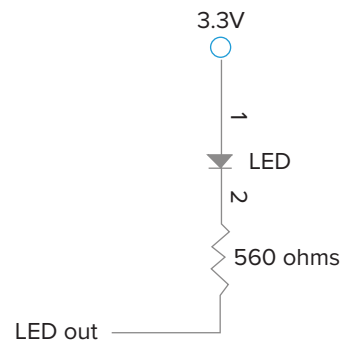
Product
Part No

LM822
See Last Page

PCB Footprint

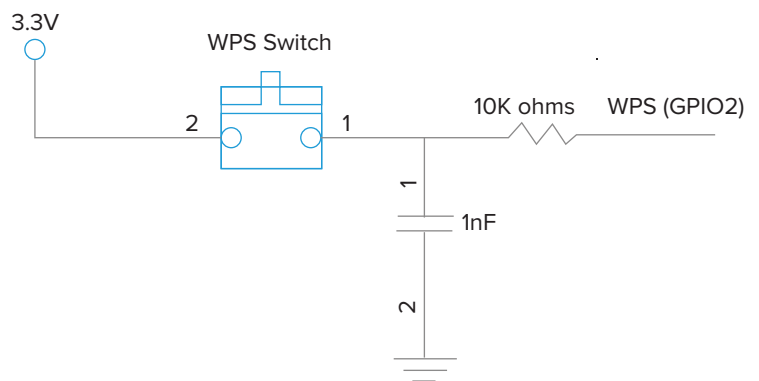


- The external circuit for WiFi activity LED (factory option)

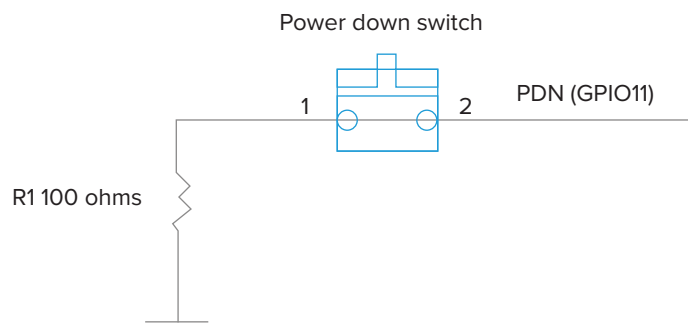


- The function of pin 6 is optional to WPS (GPIO2) or power-down (GPIO11), a factory option.

The external circuit for WPS function input (factory option), uses a tact switch.



- The external circuit power-down function input (factory option) uses a push or toggle switch.



LM822 WiFi 802.11 b/g/n Module with IC Antenna

Host Controller Interface (HCI) via USB Interface

Product LM822
Part No See Last Page

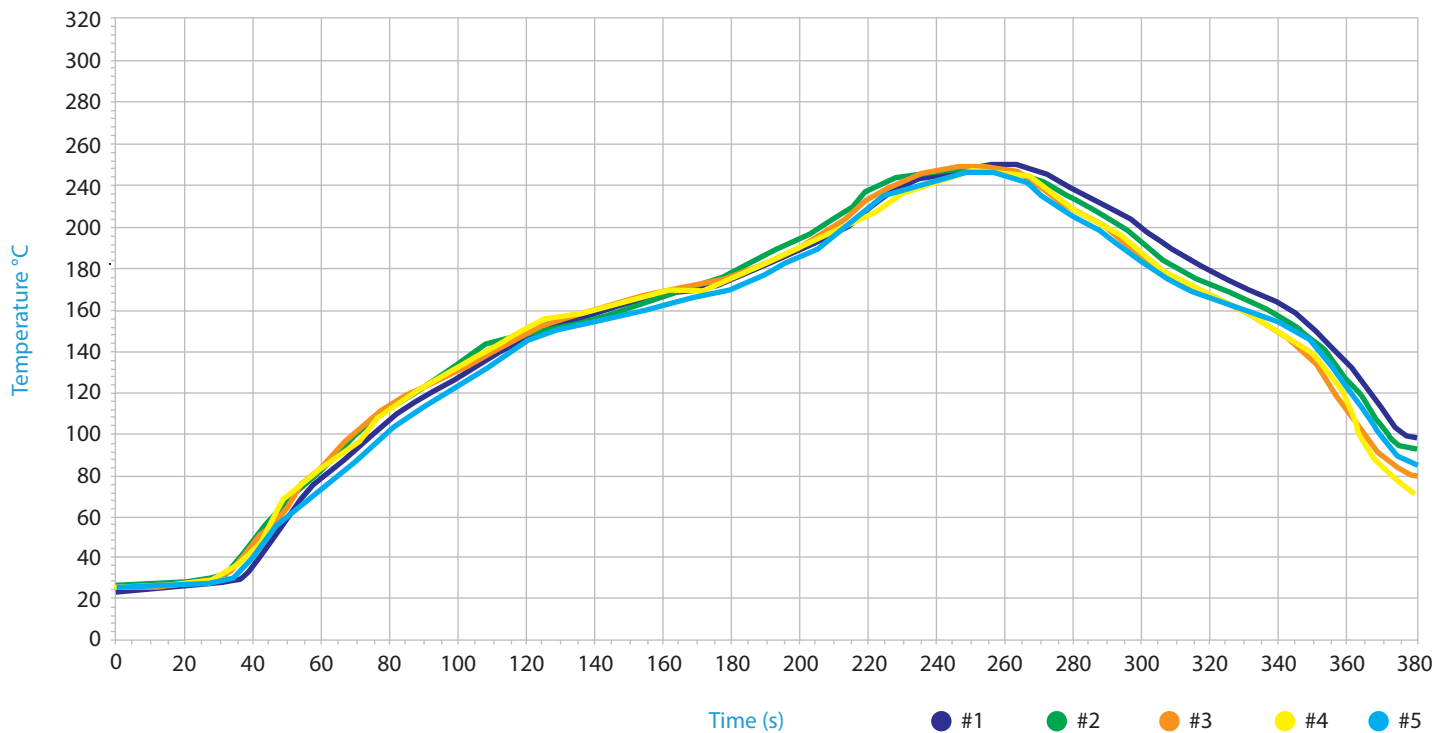
PCB Drying Conditions

This module is a Moisture Sensitivity Level 3 (MSL-3) surface mount device.

Please refer below for drying conditions prior to the solder reflow processes.

If your PCB was baked at the below temperatures, you should follow the below guidelines.

Soldering Reflow Chart



Speed (cm/min): 70.0

Name	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10
Max	158.0	160.0	170.0	170.0	180.0	180.0	190.0	220.0	235.0	250.0
Min	158.0	160.0	170.0	170.0	180.0	180.0	190.0	220.0	235.0	250.0
Length	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

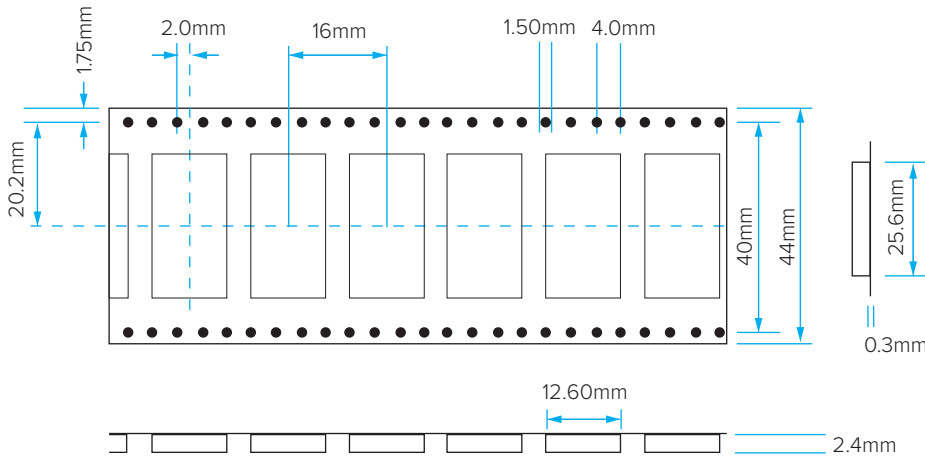
Probe	Liquidus Line		Maximum / Minimum		Slope	
	Rising 110.00-190.00	Above 230.0	Max	Min	Positive	Negative
#1	112.00	50.50	243.00	24.30	2.29	-2.97
#2	113.00	42.50	244.10	24.10	2.11	-3.08
#3	111.50	51.00	244.20	24.00	2.17	-2.69
#4	112.00	47.00	241.60	25.00	1.87	-2.13
#5	112.50	51.50	243.50	25.00	2.37	-1.95

LM822 WiFi 802.11 b/g/n Module with IC Antenna
Host Controller Interface (HCI) via USB Interface

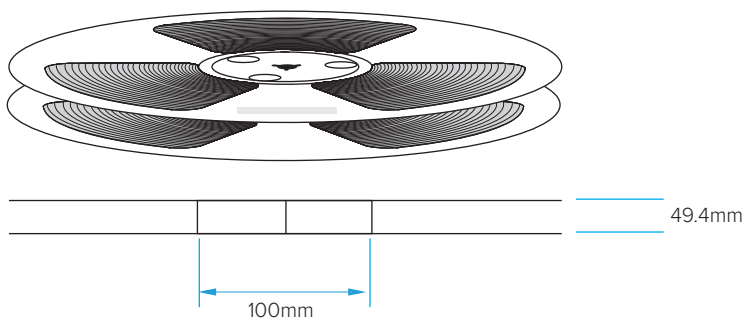
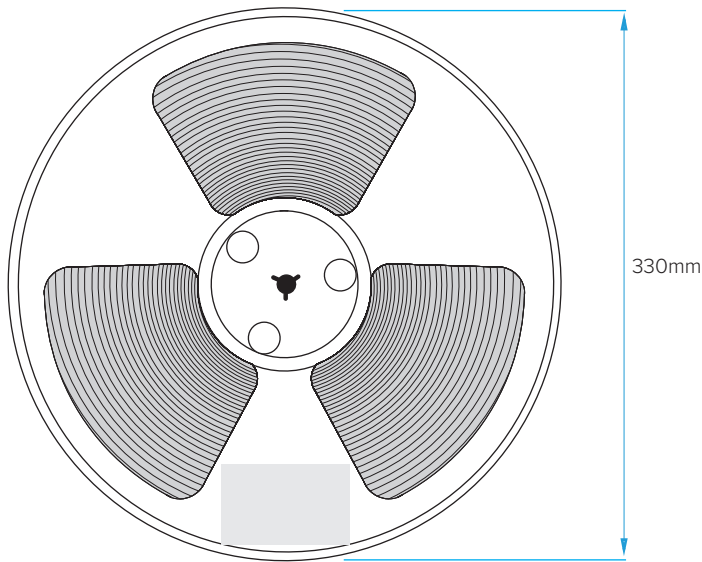
Product LM822
Part No See Last Page

Tape and Reel Packaging

Tape Dimensions



Reel Dimensions



Notes

- Carton Dimensions (L x W x H): 395mm x 360mm x 305mm

Quantities

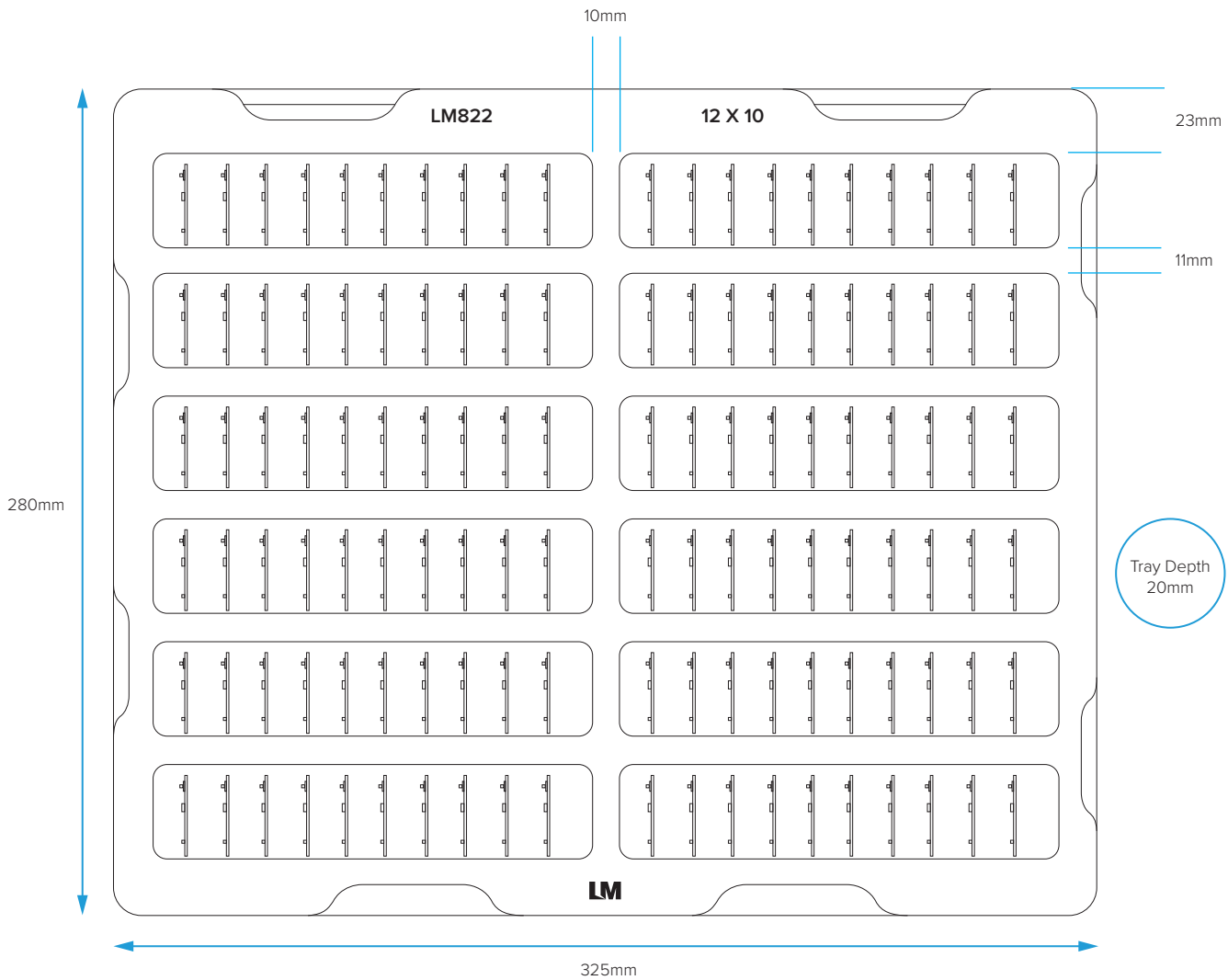
- 1500 modules per Tape
- 5 Boxes per Carton
- 7500 modules per carton

LM822 WiFi 802.11 b/g/n Module with IC Antenna
Host Controller Interface (HCI) via USB Interface

Product LM822
Part No See Last Page

Tray Packaging

Tray Dimensions



Notes

- Anti-Static PS Tray, Black .
- Material Thickness: 1mm
- Height of Tray: 20mm
- Carton Dimensions (L x W x H):
340mm x 290mm x 385mm

Quantities

- 120 modules per Tray
- 20 Boxes per Carton
- 2400 modules per Carton

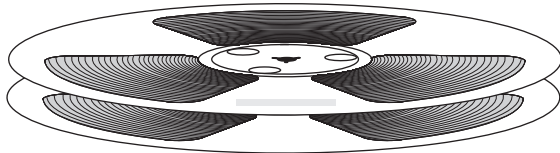
LM822 WiFi 802.11 b/g/n Module with IC Antenna
 Host Controller Interface (HCI) via USB Interface

Product
 Part No

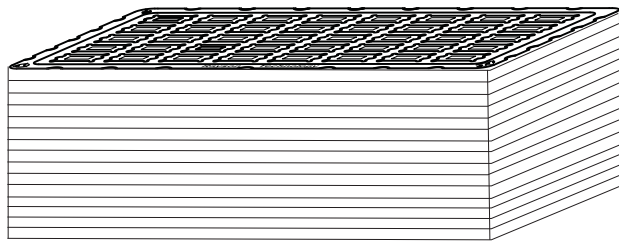
LM822
 See Last Page

Packaging for Tape & Reel / Tray

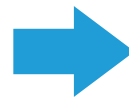
The trays/reels are stacked and inserted into an anti-static vacuum bag, with the anti-static, model name and moisture sensitive labels affixed.



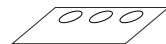
Reels are place within a vacuum bag.



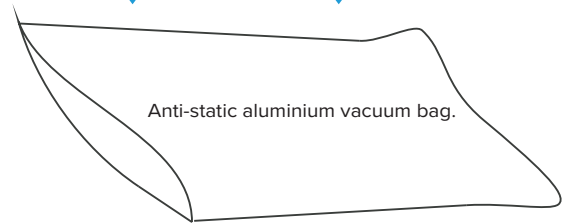
Trays are stacked up with an empty tray on the top.



drying agent

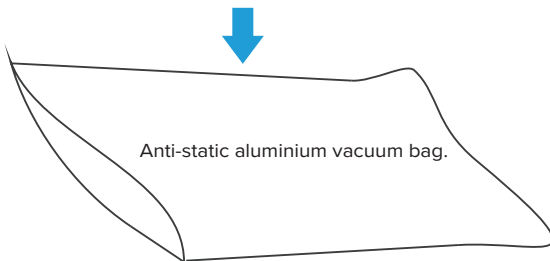


Humidity Indicator Card

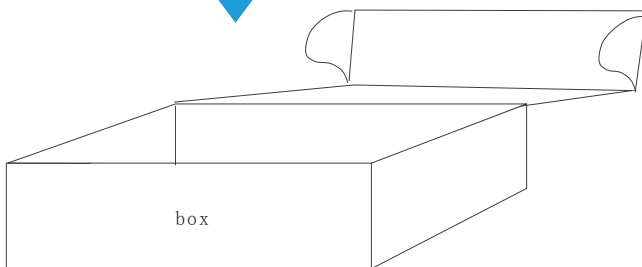


Anti-static aluminium vacuum bag.

The vacuum bag is placed inside the box and a model name label affixed on the front-side of each box.

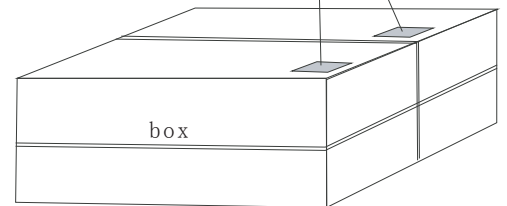


Anti-static aluminium vacuum bag.

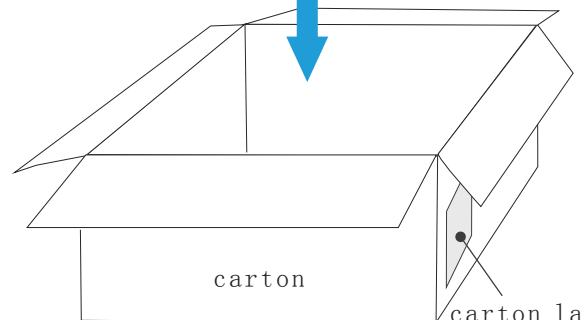


box

Model name label



box



carton

carton label

Each carton contains 4 boxes.



LM822 WiFi 802.11 b/g/n Module with IC Antenna

Host Controller Interface (HCI) via USB Interface

Product LM822
Part No See Last Page

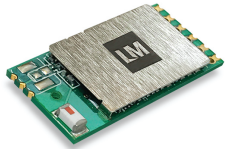
Datasheet Version Notes

v1.0	11 JAN 2018	Added version notes to datasheet.
v1.1	13 MAR 2018	MSL Description text improvement in the PCB Drying Conditions section.

LM822 WiFi 802.11 b/g/n Module with IC Antenna
 Host Controller Interface (HCI) via USB Interface

Product LM822
 Part No See Below

LM822 Packaging Options

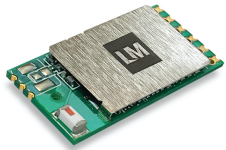


822-1458

3 VOLT

3V Module

MOD SMT HCI 802.11n EUS USB -20c 3V IC-ANT PCS



822-1459

3V Module

MOD SMT HCI 802.11n EUS USB -20c 3V IC-ANT TRAY



822-1457

3V Module

MOD SMT HCI 802.11n EUS USB -20c 3V IC-ANT T&R

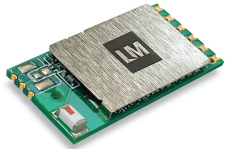


822-1451

5 VOLT

5V Module

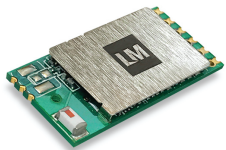
MOD SMT HCI 802.11n EUS USB -20c 5V IC-ANT PCS



822-1452

5V Module

MOD SMT HCI 802.11n EUS USB -20c 5V IC-ANT TRAY



822-1456

5V Module

MOD SMT HCI 802.11n EUS USB -20c 5V IC-ANT T&R

• See our website to download any applicable Product Software, Manuals and Notes - <http://www.lm-technologies.com/downloads>