# HYTRONIK®
Koolmesh®

KMB01 is ideally to be integrated into LED drivers, sensors, panels and different lighting control applications. It is designed based on Bluetooth low energy SoC nRF52832, which is the most widely-used chip for Bluetooth to send and receive signal. The signal covers up to 50m in the open air, the module can work as both a transmitter or a receiver.

KKMB01 controls smart device to organize wireless mesh network via Bluetooth, enabling a large number of lighting fixtures to be controlled and commissioned by a same App. External gateway device is not required.

By using its 19 general purpose I/O pins, user can interface the module with different external components, such as LED drivers, motion sensors, PWM circuits and DALI controls.
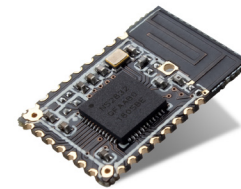
✦ Bluetooth®

■ Applications

- Different lighting control applications
- LED drivers
- Sensor detectors
- Touch panels
- Dimmers

■ Koolmesh Lighting Control System

- Wirelessly controllable with a Bluetooth smart device
- No need for external gateway device
- Mesh network can be easily set up
- Device firmware can be updated over-the-air
- Koolmesh cloud service available
- App development service available

■ Product Features

- Bluetooth 5.0 module with compact size
- Nordic nRF52832 Bluetooth low energy SoC
- 64 MHz ARM Cortex-M4F Processor
- 2.4GHz ultra low-power wireless communication
- 19 pins for general-purpose input/output
- Wide supply-voltage range(1.7V to 3.6V)
- Range up to 50m in the open air
- Easy-to-use with greater flexibility
- Programmable peripheral interface

■ Mechanical Specifications
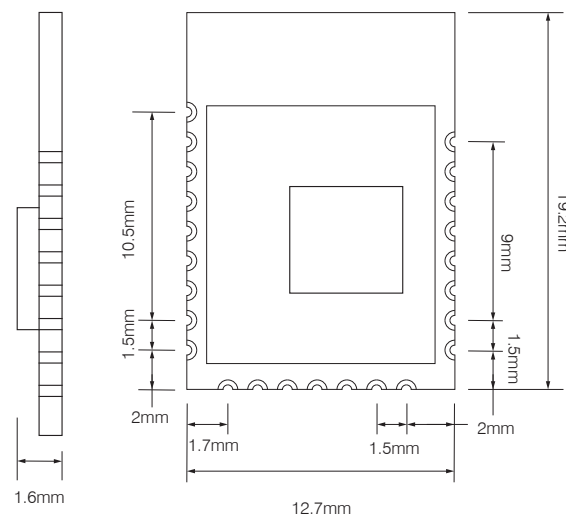
■ General information

Protocol:	Bluetooth 5.0
Chip model:	nRF52832
Processor:	64MHz ARM Cortex-M4F
RAM:	64KB
Flash:	512KB
GPIOs:	19 configurable
Frequency:	2404MHz ~ 2480MHz
Supply voltage:	1.7V ~ 3.6V;
	3.3V recommended
Power consumption:	<10mA (normal mode)
Operating temperature:	-20°C ~ 70°C
Storage temperature:	-40°C ~ 85°C
Compliance:	EN300328, EN62479, FCC Part 15C

* Be cautious of handling electrostatic sensitive device.

■ Pins Function

Pin	Name	Type	Description
H0	VSS	Power	Ground
H1	P0.28 AIN4	Digital I/O Analog input	General-purpose I/O2 SAADC/COMP/LPCOMP input
H2	P0.29 AIN5	Digital I/O Analog input	General-purpose I/O2 SAADC/COMP/LPCOMP input
H3	P0.30 AIN6	Digital I/O Analog input	General-purpose I/O2 SAADC/COMP/LPCOMP input
H4	P0.31 AIN7	Digital I/O Analog input	General-purpose I/O2 SAADC/COMP/LPCOMP input
H5	VDD	Power	Power supply
H6	SWDCLK	Digital input	Serial wire debug clock input for debug and programming
H7	SWDIO	Digital I/O	Serial wire debug I/O for debug and programming
H8	VSS	Power	
H9	NFC1 P0.09	NFC input Digital I/O	NFC antenna connection General-purpose I/O1
H10	NFC2 P0.10	NFC input Digital I/O	NFC antenna connection General-purpose I/O1
H11	P0.11	Digital I/O	General-purpose I/O
H12	P0.12	Digital I/O	General-purpose I/O
H13	P0.13	Digital I/O	General-purpose I/O
H14	P0.14 TRACEDATA[3]	Digital I/O	General-purpose I/O Trace port output
H15	P0.15 TRACEDATA[2]	Digital I/O	General-purpose I/O Trace port output
H16	P0.16 TRACEDATA[1]	Digital I/O	General-purpose I/O Trace port output
V1	P0.00 XL1	Digital I/O Analog input	General-purpose I/O Connection for 32.768 kHz crystal (LFXO)
V2	P0.01 XL2	Digital I/O Analog input	General-purpose I/O Connection for 32.768 kHz crystal (LFXO)
V3	P0.02 AIN0	Digital I/O Analog input	General-purpose I/O SAADC/COMP/LPCOMP input
V4	P0.03 AIN1	Digital I/O Analog input	General-purpose I/O SAADC/COMP/LPCOMP input
V5	P0.04 AIN2	Digital I/O Analog input	General-purpose I/O SAADC/COMP/LPCOMP input
V6	P0.05 AIN3	Digital I/O Analog input	General-purpose I/O SAADC/COMP/LPCOMP input
V7	P0.08	Digital I/O	General-purpose I/O

■ Pin Assignment