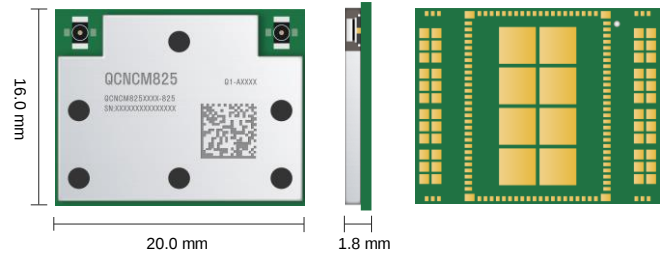


NCM825

2.4/ 5/ 6 GHz Wi-Fi Bands
2 × 2 MIMO DBS
Wi-Fi 7 & Bluetooth 5.4 Module



NCM825 is a highly integrated module supporting Wi-Fi 7 and Bluetooth 5.4. NCM825 supports simultaneous operation on 2.4 GHz + 5 GHz and 2.4 GHz + 6 GHz. With 4K-QAM and 320 MHz bandwidth, NCM825 achieves a maximum data rate of 5.8 Gbps. Meanwhile, it supports ultra-low latency for real-time response.

Multi-Link Operation (MLO) is one unique feature that allows routers to use multiple wireless bands and channels simultaneously to connect to a Wi-Fi 7 client. NCM825 supports MLO and brings faster data rate, much lower latency and higher network reliability to users.

NCM825 also integrates dual-mode Bluetooth and supports LE audio, as well as 2 Mbps Bluetooth Low Energy (BLE) and BLE Long Range.

Higher data rate, lower latency and enhanced network reliability makes NCM825 suitable for the laptop application.



Key Features

- ✓ 2.4 GHz/ 5 GHz/ 6 GHz Wi-Fi bands and Bluetooth 5.4
- ✓ Dual Band Simultaneous
- ✓ 4096 QAM
- ✓ 320 MHz bandwidth
- ✓ Multi-Link Operation
- ✓ Ultra-low latency
- ✓ Multi-User Multiple Input Multiple Output
- ✓ Wide operating temperature range: -10 °C to +65 °C



Dual Band
Simultaneous



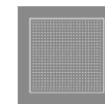
Multi-Link
Operation



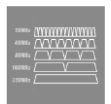
Ultra-low Latency



MU-MIMO



4K-QAM



320 MHz
Bandwidth

Wi-Fi 7 & Bluetooth 5.4		NCM825	
WLAN Protocol	IEEE 802.11a/b/g/n/ac/ax/be		
Wi-Fi Frequency Band	2.4 GHz/ 5 GHz/ 6 GHz		
Wi-Fi Antenna	2 × 2 + 2 × 2		
Wi-Fi Modulation Mode	DBPSK/ DQPSK/ CCK/ BPSK/ QPSK/ QAM		
2.4 GHz Channel Bandwidth	20 MHz/ 40 MHz		
5 GHz Channel Bandwidth	20 MHz/ 40 MHz/ 80 MHz/ 160 MHz		
6 GHz Channel Bandwidth	20 MHz/ 40 MHz/ 80 MHz/ 160 MHz/ 320 MHz		
DBS	Supported		
Encryption Mode	WPA3		
Wi-Fi Operating Mode	AP/ STA		
Bluetooth Protocol	Bluetooth 5.4		
Dimensions	16.0 mm × 20.0 mm × 1.8 mm		
Weight	Approx. 1.24 g		
Temperature Range			
Operating Temperature	-10 °C to +65 °C		
Physical Rate (Max.)			
802.11a	54 Mbps		
802.11b	11 Mbps		
802.11g	54 Mbps		
802.11n	600 Mbps		
802.11ac	1732 Mbps		
802.11ax	3000 Mbps		
802.11be	5800 Mbps		
Interfaces			
PCIe 3.0	× 1 (for Wi-Fi)		
PCM/I2S	× 1 (for Bluetooth audio)		
USB	× 1 (for Bluetooth)		
Wi-Fi/Bluetooth Antenna Interfaces	× 2		
Electrical Features			
Power Supply Voltage	VBAT: 3.0–3.6 V, Typ. 3.3 V		
I/O Power Supply Voltage	VDD_IO: 1.71–1.89 V, Typ. 1.8 V		
Power Consumption	Max. current at Tx mode: 1250 mA @ VBAT		
Certifications			
Regulatory	China: SRRC Europe: CE America: FCC Canada: IC South Korea: KC Japan: TELEC Australia/New Zealand: RCM		

Model	Ordering Code	Antenna	DBS	Windows Platform
NCM825	QCNCM825AAMD-825	Two antennas	Supported	x86 platform