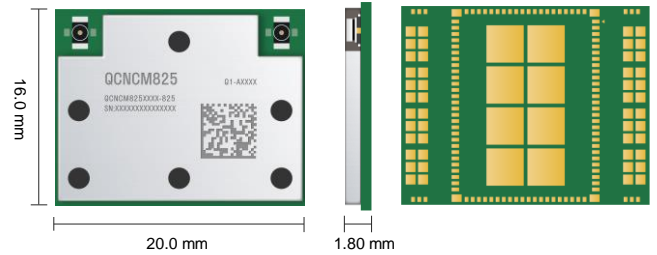


NCM825

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 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



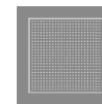
Multi-Link Operation



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 × 1.80 mm	
Weight	TBD	
Temperature Range		
Operating Temperature	-10 °C to +65 °C	
Data 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 VDD_IO: 1.7–1.9 V, Typ. 1.8 V	
Power Consumption	Max. current at Tx mode: TBD @ VBAT	
Certifications		
Regulatory	Europe: CE America: FCC Canada: IC China: SRRC South Korea: KC Japan: TELEC Australia/New Zealand: RCM	

Model	Ordering Code	Antenna	DBS	Host Platform
NCM825	QCNM825AAMD-825	Two Antennas	Supported	x86 platform