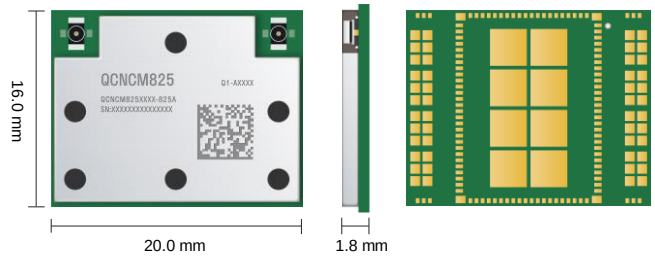


NCM825A

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



NCM825A is a highly integrated module supporting Wi-Fi 7 and Bluetooth 5.4. NCM825A supports simultaneous operation on 2.4 GHz + 5 GHz and 2.4 GHz + 6 GHz. With 4K-QAM and 320 MHz bandwidth, NCM825A 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. NCM825A supports MLO and brings faster data rate, much lower latency and higher network reliability to users.

NCM825A 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 NCM825A 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



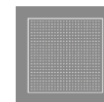
Multi-Link
Operation



Ultra-low Latency



MU-MIMO



4K-QAM



320 MHz
Bandwidth

Wi-Fi 7 & Bluetooth 5.4		NCM825A	
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/SLIMBus		× 1 (for Bluetooth audio)	
UART		× 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		Europe: CE America: FCC Canada: IC China: SRRC South Korea: KC Japan: TELEC Australia/New Zealand: RCM	

Model	Ordering Code	Antenna	DBS	Host Platform
NCM825A	QCNCM825AAMD-825A	Two antennas	Supported	Qualcomm WoS Platform