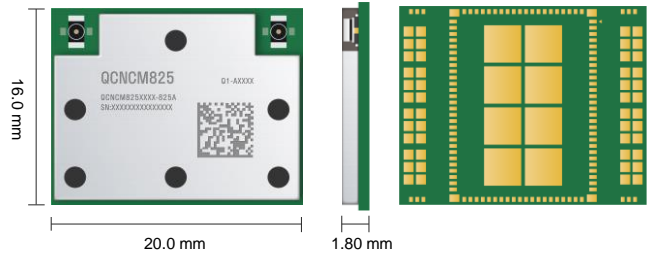


NCM825A

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 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



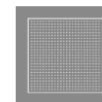
Multi-Link Operation



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 × 1.80 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/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 VDD_IO: 3.0–3.6 V, Typ. 3.3 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
NCM825A	QCNCM825AAMD-825A	Two Antennas	Supported	Qualcomm WoS Platform