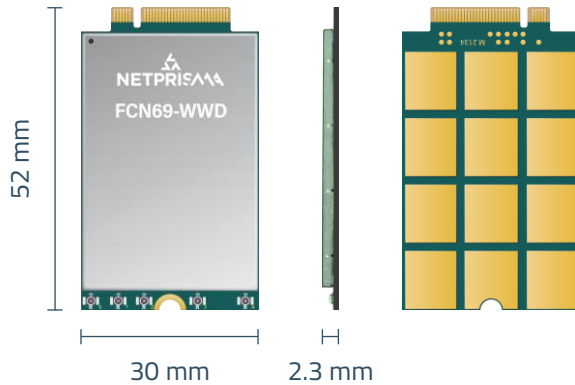


FCN69-WWD

IoT/eMBB-optimized
5G sub-6 GHz M.2 module



Product features

- > 5G/4G/3G multi-mode module in M.2 form factor, optimized for IoT and eMBB applications
- > Worldwide 5G and LTE-A coverage
- > Both NSA and SA modes supported
- > Multi-constellation GNSS receiver (optional) available for applications requiring fast and accurate fixes in any environment
- > Feature refinements: DFOTA and VoLTE (optional)

FCN69-WWD is a 5G module especially optimized for IoT/eMBB applications. Adopting 3GPP Release 16 technology, it supports both 5G NSA and SA modes.

FCN69-WWD is industrial-grade for industrial and commercial applications only.

The global version of FCN69-WWD covers nearly all the mainstream carriers worldwide, and supports Qualcomm® IZat™ location technology Gen9C Lite (GPS, GLONASS, BDS, Galileo, and QZSS). The integrated GNSS receiver greatly simplifies product design and provides quicker, more accurate and more dependable positioning capability.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB and PCIe drivers for Windows 7/8/8.1/10, Linux, Android) extend the suitability of the module to a wide range of eMBB and IoT applications such as industrial routers, home gateways, STBs, industrial and consumer laptops, industrial PDAs, rugged tablet PCs, video transmission and digital signage.

5G 5G NR sub-6 bands supported

4G DL: LTE Cat 19
UL: LTE Cat 18

3G DL: max. 4.2 Mbps
UL: max. 5.76 Mbps

Abundant protocols embedded

M.2 form factor

Multi-constellation GNSS (optional)

USB 3.1/PCIe 3.0 Super-speed interface

Voice over LTE (Optional)

Enhanced AT commands

Version: 1.0.0
Status: Preliminary

FCN69-WWD

Mechanical data

| | |
|-----------------|-------------------|
| Region/operator | Global |
| Dimensions (mm) | 52.0 × 30.0 × 2.3 |

Temperature range

| | |
|-----------------------|------------------|
| Operating temperature | -30 °C to +75 °C |
| Extended temperature | -40 °C to +85 °C |

Frequency bands

| | |
|-----------------|---|
| 5G | NSA: n1/ 2/ 3/ 5/ 7/ 8/ 12/ 13/ 14/ 18/ 20/ 25/ 26/ 28/ 29/ 30/ 38/ 40/ 41/ 48/ 66/ 70/ 71/ 75/ 76/ 77/ 78/ 79 SA: n1/ 2/ 3/ 5/ 7/ 8/ 12/ 13/ 14/ 18/ 20/ 25/ 26/ 28/ 29/ 30/ 38/ 40/ 41/ 48/ 66/ 70/ 71/ 75/ 76/ 77/ 78/ 79 |
| LTE | LTE-FDD: B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17/ 18/ 19/ 20/ 25/ 26/ 28/ 29/ 30/ 32/ 66/ 71 LTE-TDD: B34/ 38/ 39/ 40/ 41/ 42/ 43/ 48 LAA: B46 |
| UTMS | WCDMA: B1/ 2/ 4/ 5/ 8/ 19 |
| GNSS (Optional) | GPS/ GLONASS/ BDS/ Galileo/ QZSS |

Data transmission¹

| | |
|--------------|---|
| 5G SA Sub-6 | Max. 2.4 Gbps (DL) / Max. 900 Mbps (UL) |
| 5G NSA Sub-6 | Max. 3.4 Gbps (DL) / Max. 550 Mbps (UL) |
| LTE | Max. 1.6 Gbps (DL) / Max. 200 Mbps (UL) |
| WCDMA | Max. 42 Mbps (DL) / Max. 5.76 Mbps (UL) |

Interfaces

| | |
|----------------------|-----|
| (U)SIM | × 2 |
| USB 2.0 | × 1 |
| USB 3.0/3.1 | × 1 |
| PCIe 3.0 | × 1 |
| Antenna (Sub-6/GNSS) | × 4 |

Voice

| | |
|-------|----------------------------------|
| Voice | VoLTE (Voice over LTE, optional) |
|-------|----------------------------------|

Enhanced features

| | |
|-----------------------|---|
| eSIM* | ○ |
| DTMF* | ● |
| DFOTA* | ● |
| (U)SIM card detection | ● |

Certifications

| | |
|------------|--|
| Carrier | Europe: Vodafone/ Deutsche Telekom/ British Telecom/ Telefonica/ Swisscom America: Verizon/ AT&T/ T-Mobile Canada: Telus South Korea: LGU+ Japan: NTT DOCOMO/ KDDI/ SoftBank* Australia: Telstra |
| Regulatory | China: SRRC/NAL/CCC Global: GCF Europe: CE North America: PTCRB America: FCC The UK: UKCA Canada: IC Brazil: Anatel South Korea: KC Taiwan, China: NCC Japan: JATE/TELEC Australia/New Zealand: RCM Morocco: ANRT Azerbaijan: CoC Egypt: NTRA |
| Others | RoHS |

Electrical features

| | |
|-----------------------------------|---------------------|
| Supply voltage ² (V) | 3.315–4.4, typ. 3.7 |
| Power consumption @ power down | 195 µA |
| Power consumption @ sleep | 4.7 mA |
| Power consumption @ USB 2.0, idle | 40 mA |
| Power consumption @ 3.0, idle | 60 mA |

¹: The presented data rates are theoretical only, and the actual value depends on network conditions.

²: Please refer to the hardware design manual to see more specific requirements for the power supply voltage.

* : Under development/planning.

●: Supported; ○: Optional.