# FN990A40/A28

5G/LTE Data Card M.2




## LTE Advanced/5G Data Card

The Telit FN990A40 and FN990A28 data cards enable a new generation of 5G state-of-the-art data cards featuring sub-6 only technology with LTE, WCDMA and GNSS support. These data cards lay the foundation for businesses worldwide to future-proof IoT, enterprise applications and video while leveraging all 5G's and Gigabit LTE's benefits immediately.

The industrial-grade M.2 form factor is suitable for many high-performance and bandwidth-intensive enterprise and industrial applications. Use cases include fixed wireless access, enterprise routers and gateways, indoor and outdoor CPE, professional broadcasting and surveillance.

Designed for global usage, the FN990A40 and FN990A28 incorporate support for all scenarios prescribed by the 3GPP Rel.16 deployments of 5G, including non-standalone (NSA) LTE-5G NR dual connectivity (EN-DC), dynamic spectrum sharing between LTE and 5G and full 5G NR standalone (SA) mode.

Leveraging the full feature set of the groundbreaking fourth-generation Qualcomm® Snapdragon™ X65 and Snapdragon™ X62 5G Modem-RF System, the Telit data cards support the latest 5G deployments.

The FN990A40 and FN990A28 supports all major sub-6 GHz frequency bands, giving users maximum deployment flexibility.
The FN990A40 data card is based on Qualcomm® Snapdragon™ X65 targeting high-tier market needs.
The FN990A28 data card is based on Qualcomm® Snapdragon™ X62 targeting mid-tier market needs.

## Key Benefits

- Support of 5G sub-6 FDD and TDD for global deployment
- Support of SA and NSA operations, 5G core network Opt. 3a/3x and Opt. 2 for full network compatibility
- Latest generation 4G/5G Rel.16
- 4G Cat 20 up to 7 CA for FN990A40
  4G Cat 19 up to 5 CA for FN990A28
- Intraband and interband UL CA supported on 4G networks for better throughput performance for uplink-centric applications, like surveillance cameras and 4K/8K video streaming
- 3G HSPA+ Rel. 8 for fallback to legacy networks
- Standard M.2 (NGFF) data card form factor
- Support for both PCIe Gen 3 and USB 3.1 Gen 2 for maximum application design flexibility
- Dedicated/shared (switchable) RF path/connector for GNSS L1 to allow total flexibility in the design phase and low losses whenever high sensitivity is required
- Internal GNSS L1 LNA allowing the use of less expensive passive antennas, lowering the total cost of ownership

AVAILABLE FOR

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APAC

**Complete, Ready-to-Use Access** to the Internet of Things

IoT Modules | Connectivity Plans | Software & Platforms



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# FN990A40/A28

## Variants

| | FN990A40 | FN990A28 |
|---|---|---|
| **Market** | North America, EMEA, APAC | North America, EMEA, APAC |
| **5G FR1 bands** | n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48, n66, n71, n75, n76, n77, n78, n79 | n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n29, n30, n38, n40, n41, n48, n66, n71, n75, n76, n77, n78, n79 |
| **5G FR1 bandwidth** | 200 MHz, 3CC CA DL | 120 MHz, 2CC CA DL |
| **5G FR2** | N/A | N/A |
| **LTE** | 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 20, 25, 26, 28, 29DL, 30, 32 38, 40, 41, 42, 43, 46(LAA), 48(CBRS), 66, 71 | 1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 20, 25, 26, 28, 29DL, 30, 32 38, 40, 41, 42, 43, 46(LAA), 48(CBRS), 66, 71 |
| **WCDMA** | 1, 2, 3, 4, 5, 6, 8, 19 | 1, 2, 3, 4, 5, 6, 8, 19 |
| **Approvals** | FCC, IC, RED, NCC, JATE/TELEC, KCC, RCM, PTCRB, GCF, Various MNOs | |

** Some bands are turned off by default - Refer to FN990 Family HW Design Guide for additional details*

## Product Features

- 5G sub-6 FDD and TDD, SA and NSA operations
- 5G core network Opt. 3a/3x and Opt. 2
- 4G: 7 CA up to 20 layers DL/2 CA UL, 256-QAM DL/UL for FN990A40
  4G: 5 CA up to 19 layers DL/2 CA UL, 256-QAM DL/UL for FN990A28
- 3G: HSPA+ Rel. 8 (DL/UL 42/11 Mbps)
- GNSS: gpsOne Gen 9 Band L1 on dedicated RF connector
- 4x4 MIMO DL support on bands:
  5G FR1: n1/n2/n3/n7/n25/n38/n40/n41/n48/ n66/n77/n78/n79
  4G: B1/B2/B3/B4/B7/B25/B30/B66/B38/B39/ B40/B41/B42/B43/B48
- 2x2 MIMO UL support on bands:
  5G FR1: n41, n77, n78, n79
- Antenna types: four LTE/sub-6 + one GNSS
- FOTA support
- Dimensions: 30 × 52 × 2.25 mm

## Data Throughput

- 5G NSA up to:
  4.9 Gbps DL / 0.55 Gbps UL for FN990A40
  3.4 Gbps DL / 0.46 Gbps UL for FN990A28

  5G SA up to:
  4.1 Gbps DL / 0.90 Gbps UL for FN990A40
  2.5 Gbps DL / 0.90 Gbps UL for FN990A28
- 4G up to:
  2.0 Gbps DL / 211 Mbps UL for FN990A40
  1.6 Gbps DL / 211 Mbps UL for FN990A28
- 3G up to 42 DL/11 UL Mbps

## Environmental

- Operating temperature range:

  -40 °C to +85 °C

## Interfaces

- 1.8/3 V SIM Interface
- USB 3.1 Gen 2
- PCIe Gen3 - one lane
- Drivers support: Windows 10, Linux

## Electrical & Sensitivity

- LTE/5G sub-6 output power
  - 23 dBm (Power Class 3)
  - 26 dBm (Power Class 2 in B41/n41)
- Supply voltage
  - Nominal: 3.3 V dc

**QUESTIONS?** VISIT WWW.TELIT.COM/CONTACT-US

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