Azure Sphere Guardian 100

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Reach Further™

Avnet Guardian 100 is a wireless edge module that uses Azure Sphere to deliver secure connectivity for devices, helping businesses get the most benefit from existing equipment investments. Based on an Avnet Azure Sphere MT3620 module, Guardian 100 provides an Ethernet or USB interface with existing equipment, plus secure dual-band Wi-Fi connection to the internet.

Guardian's Azure Sphere module provides secure connectivity with cloud services, without exposing the end equipment to potential internet attacks. Data transmissions are encrypted, all OS and application updates are delivered securely via the Microsoft Azure Sphere Security Service, and authentication ensures the module only communicates with trusted hosts. With Avnet Guardian, enterprise customers can more confidently connect existing devices to the cloud, helping them to operate more efficiently, drive innovation, and create a better customer experience.

Beyond retrofitting existing devices, Avnet Guardian can also be used in scenarios where current connectivity does not meet enterprise-level security requirements. Avnet Guardian is a good fit for any industry that operates using mission-critical, capital-intense equipment.

Businesses can start seeing value right away with plug and play modules that are easy for anyone, including non-technical onsite employees, to install. Avnet Guardian also integrates with Avnet's IoTConnect, a secure, cloud-based platform and a portfolio of pre-built, smart, industry-specific connectivity solutions that businesses can use to quickly implement innovative IoT solutions and gain real-time data insights.

Avnet Guardian includes Azure Sphere. Customers will need an Azure tenant, which is free, to enable the automated Azure Sphere security updates. Azure Sphere can be used with other, non-Azure cloud services or even pushed to a customer's existing, internal data center.

FEATURES

- Avnet Azure Sphere Module based on MT3620AN SoC that features:
  - 1x 500MHz ARM Cortex A7, 4MB SRAM
  - 2x 200MHz ARM Cortex M4F cores, 192KB TCM, 64KB SRAM (per core)
  - On-chip QSPI flash memory (16 MB)
  - Dual-band 2.4/5GHz Wi-Fi (802.11 b/g/n)
  - Dual-band 2.4/5GHz chip antenna (Pulse W3006)
- Ethernet 10BaseT interface, RJ45 connector and magnetics
- USB 2.0 Device interface and USB power (USB type-B connector)
- USB 2.0 Debug/Program interface (internal microUSB connector)
- 7x Status User LEDs: Power, User-1,-2,-3, Debug/Prog USB, Ethernet-A,-B
- 5V to 3.3V DC/DC Power Regulation (2A max, with over voltage protection)
- Operating Temperature: -30°C to 85°C (USB) / 0°C to 70°C (using Ethernet)
- Dimensions: 108mm x 85mm x 32mm (including mounting flanges)

To purchase this kit, visit www.avnet.me/mt3620-guardian

DESIGNED BY AVNET

KEY BENEFITS

- Securely connect existing devices: Retrofit existing equipment easily and cost-effectively with a comprehensive, highly secure cloud connectivity solution.
- Streamline operations: Remotely monitor and manage equipment to increase efficiency, reduce costs, and improve the customer experience.
- Gain critical insights: Enable real-time analytics and artificial intelligence to drive innovation and transform your business.
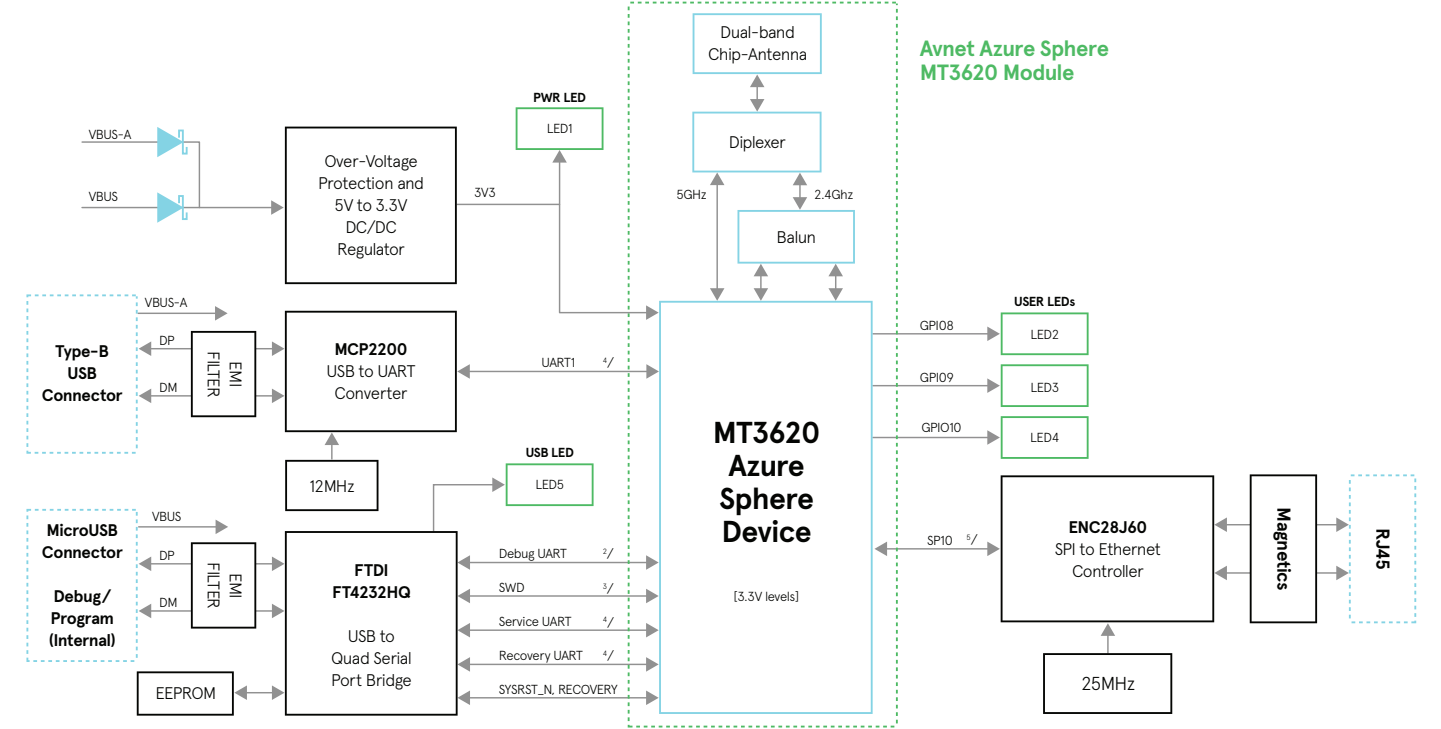
KIT INCLUDES

- Azure Sphere Guardian 100 Edge Device
- USB 2.0 type-A to type-B cable
- Ethernet Cat-5 cable
- Quick Start Card

TARGET APPLICATIONS

- Machine Monitoring/Control
- Asset Monitoring and Predictive Maintenance
- Food Services and Smart Retail
- HVAC and Refrigeration
- IoT Appliances and Devices
- Smart City and Smart Agriculture
- Factory and Building Automation

BLOCK DIAGRAM

Avnet Azure Sphere MT3620 Module

Dual-band Chip-Antenna

Diplexer

5GHz — 2.4Ghz

Balun

VBUS-A

VBUS

Over-Voltage Protection and 5V to 3.3V DC/DC Regulator

3V3

PWR LED
LED1

Type-B USB Connector

VBUS-A

DP

DM

EMI FILTER

MCP2200 USB to UART Converter

UART1 4/

12MHz

USB LED
LED5

MicroUSB Connector

Debug/ Program (Internal)

VBUS

DP

DM

EMI FILTER

FTDI FT4232HQ

USB to Quad Serial Port Bridge

EEPROM

Debug UART 2/

SWD 3/

Service UART 4/

Recovery UART 4/

SYSRST_N, RECOVERY

MT3620 Azure Sphere Device

[3.3V levels]

GPIO8

GPIO9

GPIO10

USER LEDs
LED2

LED3

LED4

SPI0 5/

ENC28J60 SPI to Ethernet Controller

Magnetics

RJ45

25MHz

FEATURED MANUFACTURERS

Microsoft

Pulse Electronics

MPS Monolithic Power Systems

MICROCHIP

PARTS

Part Number	Description	Price
AES-MS-MT3620-GUARD-100	Azure Sphere Guardian 100	$99.95

RELATED PARTS

Part Number	Description	Price
AES-MS-MT3620-SK	Azure Sphere MT3620 Starter Kit	$75
AES-MS-MT3620-M-G	Azure Sphere MT3620 Module (certified)	Contact Avnet

Offices

Australia
Melbourne
Phone: 1300 791 695 (toll-free)

New Zealand
Auckland
Phone: +64 9 914 7900

Christchurch
Phone: +64 3 962 0580

China
Beijing
Phone: +86 10 8414 8188

Changsha
Phone: +86 731 8528 1766

Chengdu
Phone: +86 28 8652 8265

Dalian
Phone: +86 411 8489 3549

Fuzhou
Phone: +86 591 8773 3706

Guangzhou
Phone: +86 20 6109 6926

Hangzhou
Phone: +86 571 8580 0916

Jinan
Phone: +86 186 5316 8971

Nanjing
Phone: +86 25 8483 8129

Qingdao
Phone: +86 532 8097 0736

Shanghai
Phone: +86 21 3367 8791

Shenyang
Phone: +86 24 3138 1918

Shenzhen
Phone: +86 755 8378 1886

Suzhou
Phone: +86 512 6522 2535

Tianjin
Phone: +86 22 2369 6825

Wuhan
Phone: +86 27 8732 2750/2625

Xiamen
Phone: +86 592 518 6092

Xian
Phone: +86 29 8832 8891

Zhengzho
Phone: +86 371 6565 5829

Zhuhai
Phone: +86 756 336 5236

Hong Kong
Phone: +852 2176 5388

India
Bangalore
Phone: +91 80 4060 4000

Chennai
Phone: +91 44 4210 9576/8

Hyderabad
Phone: +91 40 4020 9200

Mumbai
Phone: +91 22 4420 0200

New Delhi
Phone: +91 11 4648 1100

Pune
Phone: +91 20 6606 2800

Japan
Tokyo
Phone: +81 3 5792 8210

Hachioji
Phone: +81 42 648 5130

Osaka
Phone: +81 6 4705 1200

Ueda
Phone: +81 268 25 1610

Matsumoto
Phone: +81 263 36 7060

Nagoya
Phone: +81 52 934 1780

Kyoto
Phone: +81 75 361 5601

Fukuoka
Phone: +81 92 472 7716

South Korea
Seoul
Phone: +82 2 6277 6300

Malaysia
Johor Bahru
Phone: +607 338 1268

Kuala Lumpur
Phone: +60 3 2093 9721 - 22

Penang
Phone: +60 4 616 8100

Philippines
Manila
Phone: +632 706 0931 - 36

Singapore
Phone: +65 6580 6000

Taiwan
Hsinchu
Phone: +886 3 658 5017

Kaohsiung
Phone: +886 7 334 7110

Taichung
Phone: +886 4 2371 9222

Taipei
Phone: +886 2 2655 8688

Taoyuan
Phone: +886 3 222 1868

Thailand
Bangkok
Phone: +66 2 645 3678-80

Vietnam
Ho Chi Minh City
Phone: +84 8 3528 5443/5401

Hanoi
Phone: +84 4 3267 3882

Online Purchase Support
Email: OnlineSupportAsia@avnet.com

Supply Chain Services Support
Email: Asia-SCM-Helpdesk@avnet.com

Engineering Services Support
Email: Asia-ADS-Contact@avnet.com

IoT Asia Support
Email: IoT-Asia@avnet.com