

<b>CPU</b> Arm Cortex-A7x2	<b>Core Clock</b> 1GHz	<b>RAM</b> 1GB	<b>ROM</b> 4GB (eMMC)	Made in Japan	Long-term supply	Ready for mass production
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armadillo.atmark-techno.com

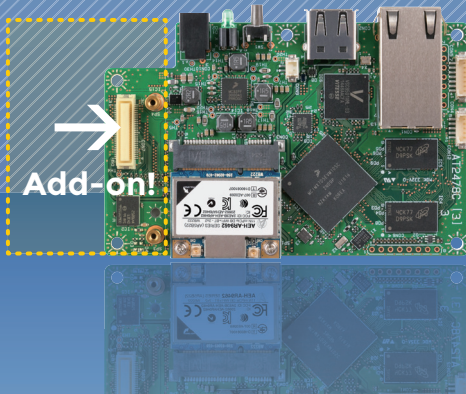
# An Embedded Platform for IoT Edge Devices



i.MX 7Dual (Arm Cortex-A7 1GHz) | Linux | Expandable

## Embedded Platform Armadillo-X1

Expansion interface  
WLAN + BT combo  
Operating temperature range -20 to +70°C  
SD slot expansion, LCD expansion set available



## IoT Gateway Armadillo-IoT G3

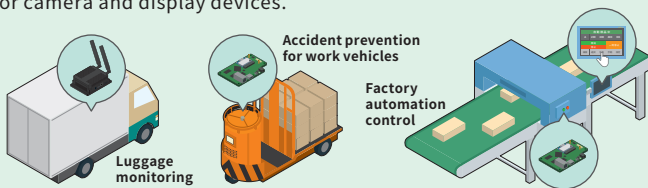
3G / LTE support  
WLAN + BT combo  
Operating temperature range -10 to +60°C



### An Embedded Platform for IoT Edge Devices

Armadillo are an embedded platform for creating IoT edge devices. There are two types of products both based on Arm processor CPU boards: an IoT gateway type with support for mobile communication and a board type with LAN support that's ready to be embedded as-is in devices.

Armadillo are used in products such as IoT gateways, data loggers and remote monitoring and control equipment. It's possible to utilize them to implement various functionality such as connecting sensor microcontrollers, protocol conversion, and control and data processing for camera and display devices.

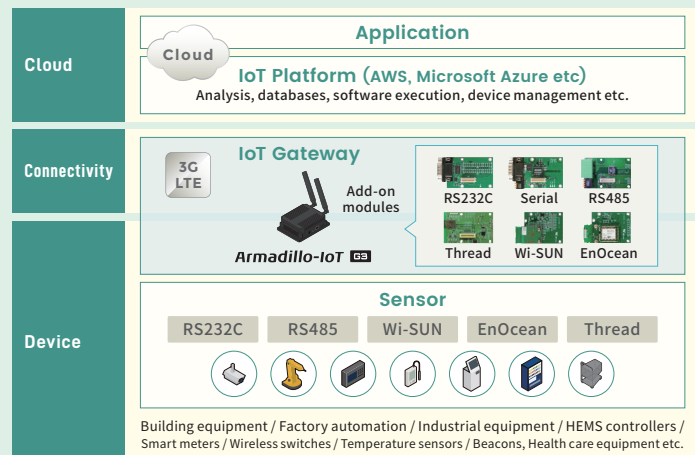


### Debian GNU/Linux Pre-Installed

With Debian GNU/Linux provided as the default root file system, it's possible to freely develop applications using the abundance of resources available for Linux. Base software such as the kernel and device drivers is provided as open source (for free on our website).

### Add Functionality with Add-On Modules

Various functionality can be added to the Armadillo-X1 and Armadillo-IoT Gateway G3 by attaching dedicated add-on modules. Atmark Techno and partner companies offer various add-on module products such as serial (RS232C/422/485), DI/DO/AD and 920MHz wireless communication. Users can choose from this lineup to add required functionality.



## Hardware Specs

Model	Armadillo-X1	Armadillo-IoT Gateway G3
CPU	Arm Cortex-A7 (966MHz) Dual core (NXP i.MX7 Dual)	
RAM	512MB (DDR3L-1066)	1GB (DDR3L-1066)
ROM	3.8GB (eMMC) <sup>[*1]</sup>	
LAN	RJ45 x 1 (100BASE-T/100BASE-TX/10BASE-T, AUTO-MDIX)	
WLAN Module	WLAN+BT Combo Module (AEH-AR9462) <sup>[*2]</sup> , IEEE 802.11a/b/g/n (300Mbps maximum with 2x2 MIMO) <sup>[*3]</sup>	
Mobile Module	—	LTE (Quectel, EC25-E) <sup>[*4]</sup> SIM Slot: micro SIM Card <sup>[*5]</sup>
Serial	3.3V CMOS x1	With add-on module
USB	USB 2.0 (Host, High Speed) x1	
SD/MMC	Optional expansion	SD Slot x1
Calendar Clock	RTC equipped <sup>[*6]</sup>	
Audio	Optional expansion	—
Video	LCD optional expansion	—
Power Input	DC5V±5%	DC8 to 26.4V
Power Consumption (Reference values) <sup>[*7]</sup>	During standby: 2.6W approx. With LAN, WLAN active: 3.6W approx.	During standby: 3.4W approx. With LAN, WLAN, 3G active: 5.8W approx. With LAN, WLAN, LTE active: 6.2W approx.
Operating Temperature	-20 to +70°C <sup>[*8]</sup>	-10 to +60°C (Board: -20 to +70°C) <sup>[*8]</sup>
Add-on Module	Mountable: 1 slot	Mountable: 2 slots
Expansion I/F	LCD I/F (parallel 24bit / MIPI-DSI), Camera I/F (parallel 24bit / MOPI-CS12), Ethernet (GbE), CAN, SD/MMC, Audio, UART, GPIO, USB, SPI, I2C, PWM	—
Dimensions	100.0 x 64.0 mm <sup>[*9]</sup>	125.0 (155.8 including flange) x 125.8 x 47.0 mm <sup>[*9]</sup>

[\*1] Using the 8GB MLC in SLC mode.

[\*2] External antenna connection is also available.

[\*3] This is the theoretical maximum value when the wireless LAN module is mounted and using 2x2 MIMO.

[\*4] An external antenna must be connected when using mobile communication.

[\*5] Mobile communication micro-SIM cards are sold separately to the standard development kit and mass-production products.

[\*6] Backup functionality support (when backup battery connected, battery sold separately)

[\*7] Power consumption with no add-on modules connected. Power consumption will be affected by the radio wave environment.

[\*8] With no condensation.

[\*9] This size excludes protrusions.

## Software Specs

Model	Armadillo-X1	Armadillo-IoT Gateway G3
Linux kernel	Linux 4.9-x1-at	
Distribution	Debian 9	
Network	IPv4, IPv6, DHCP, DNS, NTP, SSH, SMTP, HTTP, HTTPS, VPN (IPSec, SSL), PPP	
Main functions	Packet filtering / NAT (iptables), server/client apps (HTTP, DNS, DHCP, NTP), log collection (syslog, fluentd)	
Configuration Management	Serial console login, remote login (SSH), CGI	
Log Collection	syslog, fluentd	
Hardware/Software Monitoring	Hardware watchdog, software watchdog	
Language	C/C++, Lua, Ruby, Node.js, shell scripts, Python	
IoT/M2M	HTTP, MQTT, WebSocket, fluentd, AWS IoT Device SDK, Azure IoT SDK	

## Products

	<h3>Armadillo-X1</h3> <p>Armadillo-X1</p> <p>Price: OPEN (To be released)</p>		<h3>Armadillo-IoT G3</h3> <p>Armadillo-IoT Gateway G3</p> <p>Model: AGX3162</p> <p>Price: OPEN (To be released)</p>
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## Mobile Communications SIM

Mobile communication with the Armadillo-IoT Gateway G3 has been tested in a number of countries and regions using the following mobile communication SIMs.



**SORACOM Air**  
SORACOM, INC.

<https://www.soracom.io/products/air/>



**IoT Connect Mobile**  
NTT Communications Corporation

<https://www.ntt.com/business/lp/mobile/iotconnect.html>

**RoHS** Armadillo brand products are RoHS compliant including Pb / Hg / Cd / Cr6+ / PBB / PBDE to meet the European RoHS standards by the Directive (2002/95 / EC, RoHS1).



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