CPU	Core Clock	RAM	ROM			
Arm Cortex-A7$\times$2	1GHz	1GB	4GB (eMMC)	Made in Japan	Long-term supply	Ready for mass production

armadillo.atmark-techno.com

An Embedded Platform for IoT Edge Devices

Armadillo

## 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

Add- on!
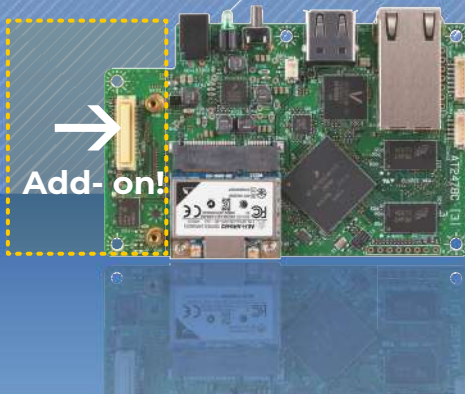
IoT Gateway
Armadillo-IoT G3

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

Add- on!

aws qualified device *Internet of Things.*

Microsoft Azure Certified
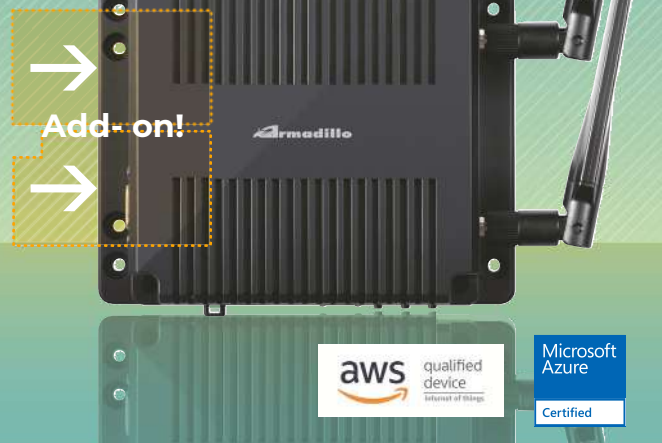
An Embedded Platform for IoT Edge Devices

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.

Luggage monitoring

Accident prevention for work vehicles

Factory control

automation
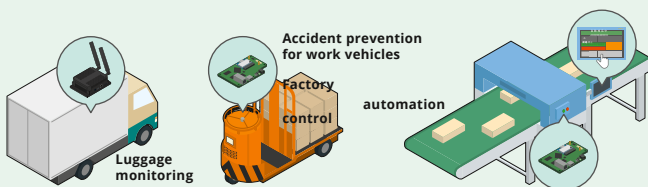
Debian GNU/Linux Pre-Installed

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.

Cloud	Application		
	Cloud	IoT Platform (AWS, Microsoft Azure etc)	
		Analysis, databases, software execution, device management etc.	

Connectivity	IoT Gateway			
	3G LTE	Add-on modules	RS232C	Serial	RS485
		Armadillo-IoT G3	Thread	Wi-SUN	EnOcean

Device	Sensor				
	RS232C	RS485	Wi-SUN	EnOcean	Thread

Building equipment / Factory automation / Industrial equipment / HEMS controllers / Smart meters / Wireless switches / Temperature sensors / Beacons, Health care equipment etc.

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)[*1]	
LAN	RJ45 x 1 (100BASE-T/100BASE-TX/10BASE-T, AUTO-MDIX)	
WLAN Module	WLAN+BT Combo Module (AEH-AR9462) [*2], IEEE 802.11a/b/g/n (300Mbps maximum with 2x2MIMO)[*3]	
Mobile Module	1GB (DDR3L-1066)	LTE (Quectel, EC25-E)[*4] SIM Slot: micro SIM Card[*5]
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[*6]	
Audio	Optional expansion	—
Video	LCD optional expansion	—
Power Input	DC5V±5%	DC8 to 26.4V
Power Consumption (Reference values)[*7]	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℃ [*8]	-10 to +60℃ (Board: -20 to +70℃) [*8]
Add-on Module	Mountable: 1 slot	Mountable: 2 slots ISOLATED DIGITAL IO / ANALOG INPUT
Expansion I/F	LCD I/F (parallel 24bit / MIPI-DSI), Camera I/F (parallel 24bit / MOPI-CSI2), Ethernet (GbE), CAN, SD/MMC, Audio, UART, GPIO, USB, SPI, I2C, PWM	—
Dimensions	100.0 x 64.0 mm[*9]	125.0 (155.8 including flange) x 125.8 x 47.0 mm[*9]

[*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

Armadillo-X1
Armadillo-X1

Price: OPEN (To be released)

Armadillo-IoT G3
Armadillo-IoT Gateway G3

Model: AGX3162
Price: OPEN (To be released)

Mobile Communications SIM

Mobile communication with the Armadillo-IoT Gateway G3 has been tested in a number 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

Product Distributor (Thailand)

Activio Co., Ltd.

38 Chalanttip Bldg., 7th Floor, Unit 7A, Convent Rd., Silom, Bangrak, Bangkok 10500
https://thai.activio.asia

ACTIVIO