

AdvanReader Family Overview

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Overview

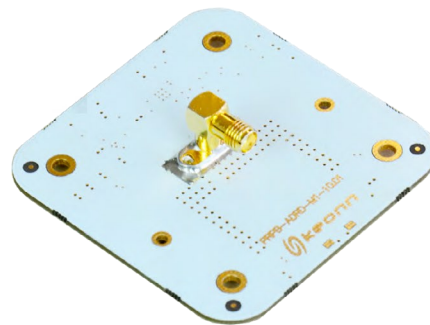
The AdvanReader family of products offer a comprehensive set of General Purpose RFID UHF readers. At the same time AdvanReader family of products offer some unique features that make them suitable for Healthcare, Manufacturing, Retail, Automotive, Industry.

The AdvanReader family of products members:

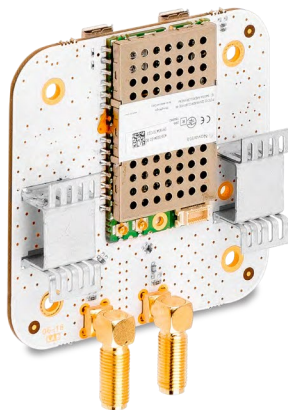
From the minimal AdvanReader-m-10 readers



AdvanReader-m1-10
(embedded ceramic antenna)



AdvanReader-m1-10
(1 x RF SMA port)



AdvanReader-m2-10
(2 x RF SMA port)

AdvanReader family overview

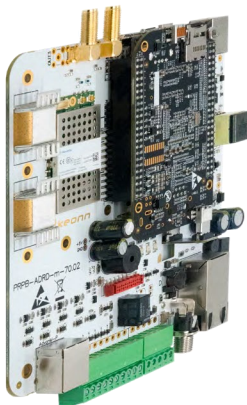
To the medium size AdvanReader-m-70



AdvanReader-m1-70
(PCB version)



AdvanReader-m1-70
(enclosed version)



AdvanReader-m2-70
(PCB version)



AdvanReader-m2-70
(enclosed version)

AdvanReader family overview

Up to the most powerful AdvanReader-m-160



**AdvanReader-m4-160
(PCB version)**



**AdvanReader-m4-160
(enclosed version)**

Benefits

Flexibility

AdvanReader family of products offer different levels of flexibility:

- **Product flexibility:** from the most basic 10 Series to the 160 Series, every application has its perfect AdvanReader fit.
- **PCB versus enclosed versions:** PCB versions are the right choice to embed into other systems. On the contrary, the enclosed versions are the perfect choice for applications that require stand-alone components.

AdvanReader family overview

Hardware benefits

RFID

The AdvanReader family of products use RFID modules from ThingMagic. ThingMagic modules are known for its unparalleled performance and having one of the best FW in the RFID UHF market.

As an example, ThingMagic modules handle Dense Reader Mode (DRM) transparently, so that, several readers can work together without the need of synchronization.

Direct connection to Android devices

AdvanReader-10 can be directly connected to Android devices, like Android screens, communicate with these devices, and be powered by them.

This provides a very cost-effective solution for adding RFID functionality to Android devices.

On-board intelligence

Readers from the Series 70 and 160 use an embedded Linux computer (ARM board) with the following characteristics

- Cortex A-8 CPU (1 GHz)
- 512 MB RAM
- 4 GByte NAND with Operating System
- 1 x USB connector type A
- 1 x USB connector type mini-A

This offers many advantages:

- In many applications, it avoids the need of an external computer, which reduces hardware costs and maintenance
- System integrators can build their own applications inside the reader, store data or populate a database inside the reader, etc.

IO hardware

The AdvanReader family of products feature the most advanced **IO** interface. Among some of its features are:

- 2 Watt audio amplifier: ready to connect to an 8 ohm loudspeaker
- Up to 8 GPO lines: they can control 2-level multiplexer expansion
- Up to 4 GPI lines
- 2 analog GPI lines
- Relay enabled GPO line



AdvanReader family overview

* Please note some of the features are only available in the 70 and 160 Series

A single Keonn reader can be connected up to 1024 antennas.

This reduces the cost of those RFID projects where many antennas are needed.

Battery operation

The 160 Series offer an advanced battery operation mode, that reduces consumption and expands battery life.

Software benefits

AdvanNet

AdvanNet, the FW that runs on the 60 and 150 Series is one of the most advanced pieces of software in the RFID market. Some of the benefits of AdvanNet.

- **Very easy integration:** AdvanNet provides a REST API that allows to integrate Keonn readers with software applications very easily and quickly.
- **System abstraction:** rather than offering general purpose read modes, AdvanNet offers specialized read modes
 - Alarm modes
 - Payment modes
 - Smart shelves modes
 - Lift & Learn modes
- **Integration:** data generated in the reader side can be exported in several different ways:
 - SQL databases
 - HTTP services
 - MQTT services
 - Etc.

Integration options allow to completely remove development time and just configure the system to share interesting data.

- **Cloud integration:** it is possible to configure the readers to upload data to AdvanCloud, the Keonn Cloud Service.
- **Other:**
 - Internal data backup: all data generated in the reader is persisted on disk in a CSV file
 - Smart triggers: every GPI line can trigger read operations on different antenna sets

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Development options

The list of development options are:

- **External Development:**
 - AdvanNet based:
 - AdvanNet Manager: test and deploy web-based GUI utility.
 - REST API that can be used in any development environment.
- **Embedded Development**
 - Java development: based on a modified ThingMagic Mercury API
 - C development: based on Mercury API
 - C development (libc 2.13)
 - REST API
- **Other options**
 - The OS is fully open

The following table summarizes the development options per reader Series



AdvanReader family overview

Technology	Series 160/70 and derived systems	Series 10 and derived systems
Development		
C#	REST API development Embedded development*	ThingMagic Mercury API
Java	REST API development Java Embedded development	ThingMagic Mercury API
C/C++	Embedded C/C++ development	ThingMagic Mercury API
Others: NodeJS Python etc.	Any language that uses sockets and HTTP requests are suitable for REST development	

*Keonn does not support it

With the integrated services you do not need to code or have any programming skills but to configure a service:

Service	Series 160/70 and derived systems	Series 10 and derived systems
Integrated services		
SOL	Send read or alarm events to an external DDBB	Not available
HTTP Service	Send read and alarm events to your server via HTTP	Not available
CSV	Download events in .csv format	Not available
MQTT	Send events to your MQTT server. Coming soon	Not available

Development platform

Readers from the Series 70 and 160 offer a fully open embedded development platform based on Linux Debian distribution.

*Please note the SW benefits are only available in the 70 and 160 series.