KABLOSUZ
ENDÜSTRİYEL OTOMASYON

ENDÜSTRİYEL KABLOSUZ ETHERNET
KABLOSUZ İZLEME ve KONTROL

SYDMA
Kablosuz Kontrol

RUGGED WLAN FOR HARSH ENVIRONMENTS

ATIM

WLI-E

9-39V   LAN

ATIM

RS232

Serial+Ethernet Advanced Radio Modem

M-SE

LAN

Rx
Tx
In
Out
Sys
On

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SYDMA
Kablosuz Kontrol

ENDÜSTRİYEL KABLOSUZ OTOMASYON ÇÖZÜMLERİ

ARKA OFİS　　　**İLETİŞİM**　　　**SAHA**

SCADA

INTERNET

ADVANCED RADIO　　MODEMS

ANALOG　　　　DIGITAL

ANALYZER

SERIAL
RS232
RS485　　　　　　　　MODBUS
RS422　　　　　　　MASTER/SLAVE
ETHERNET　　　　　　DEVICES

METER

DRIVER

CONTROLLER

PLC

LOCAL
ETHERNET

LOGGING ALARM　　MODBUS

TRANSDUCER
V,mA

TEMPERATURE

FLOW

PRESSURE　　　PHYSICAL
　　　　　　　WORLD

LEVEL

HUMMUDITY

* -20, +80C 'de çalışma
* >5Km, Lisanssız
* MODBUS TCP/RTU Gateway
* Seri + Ethernet
* 19200bps RF Hız
* Tekrarlayıcı

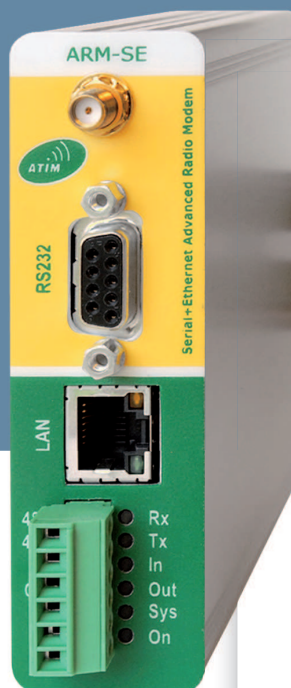ENDÜSTRİYEL RF MODEM　ENDÜSTRİYEL ETHERNET　KABLOSUZ SERİ AĞLAR　KABLOSUZ SENSÖR AĞLARI

www.sydma.com

ARM-SE
Advanced Radio Modem

Licence free M2M*

>5 km at 868 MHz 500 mW

Serial + Ethernet

ARM-SE

RS232

LAN

Rx
Tx
In
Out
Sys
On

ATIM RADIOCOMMUNICATIONS

The ARM-SE radio modem

is compatible with all the ARM (Advanced Radio Modem®) range. It enables the communication between all serial or Ethernet devices, and devices (I/Os, serial, wireless, Ethernet) connected to other remote radio modules.

It can be used as a bridge between 2 or several Ethernet devices (PLCs for instance). Its strong points are the range it can cover with small antenna (more than 5km at sight and even more than 10km with a high point) and its excellent sensitivity which allows to cover very obstructed and disturbed areas such as industrial halls, quarries, urban environment, mobile machines, etc…

The ARM-SE offers an alternative to Wi-Fi for industrial applications not requiring important data throughput but rather a guarantee of good operation in worst situations.

The ARM-SE is equipped with an Ethernet port and also a serial port which can be used either in RS232 or RS485, for connecting serial devices (PLCs, terminals, …), 1 digital input and 1 digital output (default watchdog output). Its modularity allows to add in "eXtended" version, either standard I/O modules or specific modules on request. It can operate under several modes: transparent, secured or Modbus protocol.

Its integration is perfect into a wireless communication architecture with other radio modems from the ARM range.
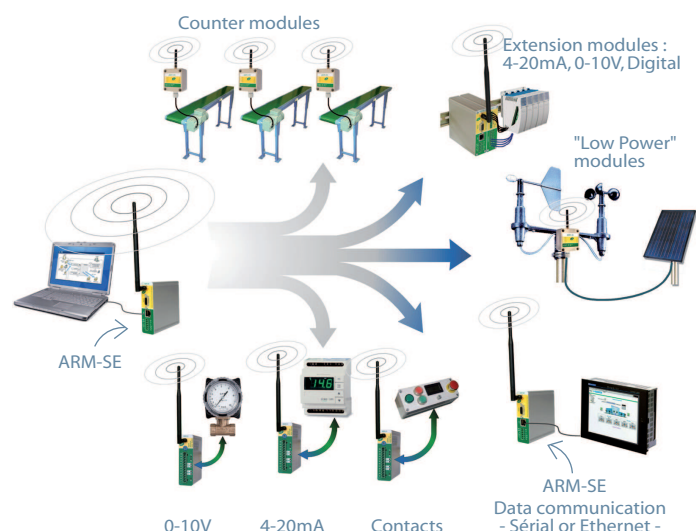
▸ Radio modem
 868 MHz (1 to 500 mW)
 & **433 MHz** (10 mW)

▸ **European standard,** licence-free

▸ **Hight sensibility, long range** stability (TCXO)

▸ **RS232/485** or **Ethernet Full TCP/IP +** Modbus TCP/RTU gateway

▸ **«NLOS» functionning** (non line of sight), Wi-Fi alternative in obstructed areas

▸ **Web page configuration** (in local and in a distance), Firmware update

▸ **Advanced functions :** multiple repeater, watchdog, ...

▸ Metal box for **Rail DIN** mounting

▸ Excellent **quality / price** ratio

APPLICATIONS TYPE

LONG DISTANCES IN OBSTRUCTED AND DISRUPTED AREAS :

▸ Timing, lapping time report
▸ Digital display, road signs
▸ Water and energy management
▸ Camera control, telemetry
▸ Quarries, mines, cement works
▸ Building trade, industries …

* Machine to Machine

>M2M Infrastructure **example**

Counter modules

Extension modules :
4-20mA, 0-10V, Digital

"Low Power" modules

ARM-SE

ARM-SE
Data communication
- Sérial or Ethernet -

0-10V   4-20mA   Contacts

www.atim.com

ARM-SE
Advanced Radio Modem

Aluminum IP40 box for DIN mounting

Low thickness in an electric cabinet

Weight: 250g

105 mm

105 mm

30 mm

Daughter board for ARM-SE

ARM-X8800 : extension card 8 inputs + 8 outputs (optocouplers / Vmos)

ARM-X4440 : extension card 4 inputs + 4 outputs digital + 4 inputs analogical 4-20mA or 0-10V

ARM-X4440 : . extension card 4 inputs + 4 outputs digital + 4 outputs 4-20mA or 0-10V

Compatibility with ARM range

ARM-IOx : radio modems low cost -IOS/-IOD/-IOA

ARM-IOx-LP : low power version with input/output digital and analogical

ARM-D : digital version, 2 inputs + 2 outputs (+1 input and 1 output 4/20mA)

ARM-DA : digital-analogical version, 2 inputs + 2 outputs (+1 input and 1 output 4/20mA)

ARM-C8 et -U8 : transceiverS OEM version

Articles references

ARM-SE8/500   868/870MHz band, 500mW
ARM-SE4/10   433/434MHz band, 10mW

Options :
-HD : 38400bps radio version

Technical specifications

FONCTIONALITIES

FUNCTIONING MODES : Transparent mode, buffer 2ko
Mirror mode with modules I/O ARM-X
Secured mode with acquittal enquiry
Gateway: modbus TCP to Mobus RTU
Modes: point to point, access point, client, repeater

ADVANCED FUNCTIONS : Routing option (relaying path)
Data encryption, error corrector code
"LBT" function (listen before talk)
MAC addresses filtering for flow optimization
Configuration and diagnostic in a distance (by@IP)
Watchdog functions (with e-mail alert)

GENERAL INFORMATIONS

CONFIGURATION AND UPDATES:
by embedded webpage, or Hayes commands (parameters saving in EEPROM). Firmware update via Ethernet. Configuration and test mode in local and in a distance. 3 DIP-switches at the back for RS485 configuration + 1 for transition in test mode.

ANTENNA: SMA female antenna connector on the front
Recommended antennas: ½ wave angled or ¼ wave deported for case or metallic cabinet, or ½ wave deported (without ground plan).

ENVIRONMENT : Temperature functioning/stocking:-30 to +60°C / -40 to +70°C
Humidity: 0 to 95% without condensation

NORMALIZATION : directive RTTE1995/5/CE -ETS300-220-3 v1.1.1
CEM EN 301 489-3 v1.4.1 - Sécurité NF EN60950 Ed.2000 - Conformity RoHS

LIGHTS AND MISCELLANEOUS : 6 LEDs: Rx, Tx, In, Out, Sys, On
Encoder wheel 16 channels

RADIO INTERFACE "RF"

Band: 433MHz, 868MHz, 1 to 500mW (0-27dBm)

Modulation: GFSK

Radio flux: 19200bps NRZI, 38Kbps in option

16 configurable channels with encoder wheel or soft

Sensibility in reception:-110dBm at 9600bps / -107dbm at 19k2

POWER SUPPLY

Consumption at 12V: 400mA in emission, 115mA in reception

Sleep mode (just in serial mode): ~40mA

CONNECTIONS

1 Ethernet port 10BaseT (RJ45)

1 RS232 port (SUBD 9 pins with Rts, Cts, Dtr, Dsr)

1 RS485 port 2 wires (de-pinable terminal)

1 input "IN" digital (terminal)

1 output "OUT" digital Vmos 30V/0,5A (terminal)

www.atim.com))

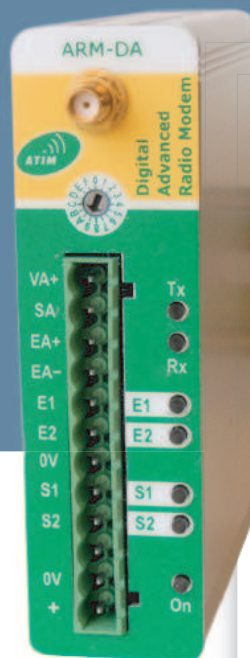DISTRIBUTED BY :

ARM-D / -DA

Advanced Radio Modem

Licence free M2M*

>5 km in 868 MHz 500mW

Digital (-D) / Digital + Analog (-DA)

ARM-D and ARM-DA radio modems
are well adapted to data Booleans transmission applications (digital) and transfer of logic and analogical states: remote control, watch, distance management, feedback alarm, etc.

They work in mirror mode (inputs/outputs copy in the two directions, in a cyclic or released way), or in slave modbus mode, accessible in that case from a modbus/TCP or modbus/RTU dispositive, via an ARM-SE radio modem (or ARM-CS, or ARM-IOS).

More precisely, the ARM-DA radio modem is equipped with 2 digital inputs/outputs (VMos protected against short-circuit), and 1 analogical input/output 4-20mA.

The reception Rx LED allows to visualize received signal quality: green (good), orange (medium), red (bad).

It is also equipped with a serial RS232 port (adaptator cable required) reserved to its configuration (with software under Windows or Hayes commands).

A performing sleep mode permits to supply it with a small solar panel dispositive.

It can be integrate in a wireless communication architecture with serial-Ethernet radio modems (ARM-SE), and also in multipoint mirror mode to the extension modules ARM-X.

▸ **New evolutionary range** of multichannel radio modems

▸ **European norm,** licence free

▸ **433MHz** and **868MHz** versions

▸ Powerful ERP (effective radiated power): **10mW** at **500mW**

▸ **Great sensibility, high range**

▸ Modes : **Mirror, Trigger, & ModBus**

▸ **Repeateur + routing table**

▸ **"Watchdog"** function

▸ **Configuration** via software under windows, or Hayes commands, or ARM-SE web pages

▸ **Aluminum box** for DIN rail mounting

>M2M infrastructure **example**

Mode Miroir

E1 / E2
S1 / S2
E1 / E2
S1 / S2

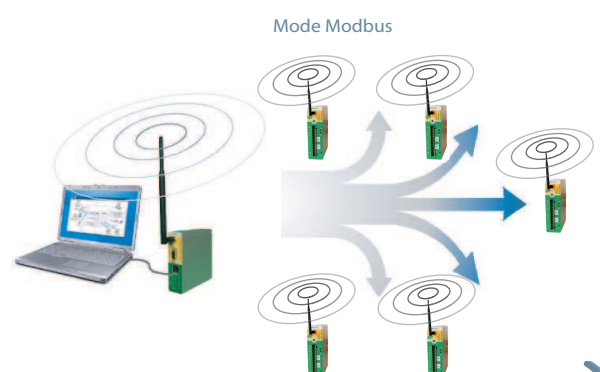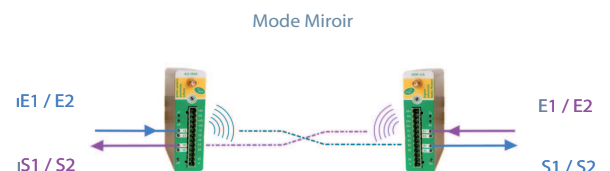Mode Modbus

APPLICATIONS TYPES
DEPORT SANS FIL SIMPLE ET PERFORMANT

- Simple and performing wireless transfer
- Billboards, synchronization
- Water management, telemetry
- Counting, traceability
- State transfers
- Remote control, alarms
- Etc.

www.atim.com

* Machine to Machine

ARM-D(A)
Advanced Radio Modem Digital & Analogique

Aluminum box for DIN rail mounting

Low thickness in a cabinet

Weight: 250g

105 mm

85 mm

30 mm

ARM-DA
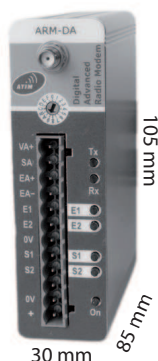
Compatibility with ARM range

ARM-SE : radio modem Serial / Ethernet

ARM-X : "eXtended" versions, inputs/outputs

ARM-CS : "Compact Serie" version, tight box

ARM-IO : -S / -D / -A / -D-LP / -A-LP verisons

ARM-C8 et -U8 : transceivers O.E.M. versions

Articles references

ARM-D4/10 : (433 MHz / 10 mW) 2 digital I + 2 digital O

ARM-D8/500 : (868MHz 500mW) 2 digital I + 2 digital O

ARM-DA4/10: 2 digital I + 2 digital O and 1I + 1O 4-20mA

ARM-DA8/500 : 2 digital I + 2 digital O and 1I + 1O 4-20mA

Technical specifications

FUNCTIONALITIES

"Mirror" mode

"Slave" mode

"Synchro" mode

GENERAL INFORMATION

CONFIGURATION:
Windows-based utility or Hayes commands
Parameter saving in EEPROM
RJ13 in rear face for configuration using RS232 cable (in option)

ANTENNA:
SMA female antenna connector on front face
Recommended antennas: ½ wave length whip antenna with elbow (h : 17cm) or ¼ wave length antenna for metal case or cabinet (with ground plan)

ENVIRONMENTAL:
Operating temperature: -20 to +50°C
Storage temperature: -30 to +70°C
Humidity: 0 to 100%

REGULATORY APPROVALS:
ETS300-220
R&TTE
CE certification (pending)

LEDS & MISCELLENAOUS:
Power LED
Tx LED

CONNECTIONS

Connection with a 12 points terminal, thread 5,08mm

- 2 digital inputs optocoupled (terminal)

- 2 digital outputs Vmos 30V/0,5A max (terminal)

- 1 analogical input 4-20mA / 0-5V (version -DA)

- 1 analogical output 4-20mA / 0-5V (version -DA)

RADIO INTERFACE "RF"

433MHz or 868MHz bands

ERP: 10mW / 100mW / 500mW according to standards and frequency range

GFSK modulation

Radio throughput: NRZI 19200 bps

16 channels configurable by coding wheel or software

Reception sensitivity: -110dBm @9600bps

POWER SUPPLY

External 10 - 30 Vdc by screw terminal

Consumption: <50mA@12Vdc (10mW version)

Document non contractuel, spécifications modifiables sans préavis - Mai 2009

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ARM-D88

Advanced Radio Modem

Licence free M2M*

Remote IO
(8 Inputs + 8 Outputs)

Digital

ARM-D88 IO modules are ideal for remote control applications, for supervision or telemetry applications.

They are used everywhere to replace cables, in harsh environment thus saving costs and time. For example on production lines or for mobiles applications like forklift drivers calling, conveyors, cranes, etc. The modules offer a complete plug and play solution and avoid using PLCs or IO terminals.

ARM-D88 are equipped with 8 digital inputs and 8 digital outputs. Modules exist also with analogue IO (0-10 V/ 4-20 mA). They are compatible with the all ATIM **A.R.M** range (Advanced Radio Modem), for example with the serial/Ethernet radio modem **ARM-SE** or low cost radio modems **ARM-IO**. Communication is realized by using mirror mode or ModBus mode.

ARM-D88 embeddes the same advanced features than the ARM-SE (Web pages, secured radio link, LBT: Listen Before Talk, Watchdog,etc.)

The ARM-D88 has a web server embedded allowing an easy configuration via a web navigator locally or remotely via radio.

The RS485 port allows a ModBus serial link utilization or the interconnection of several modules.

➢ **Radio Modem**
  868MHz (25 & 500 mW)

➢ **European Certification**
  Licence free

➢ **Modular modules**
  (1 to 16 connected modules)

➢ **Up to 128 DI / 128 DO**

➢ **Mirror Mode**
  Point 2 point & multi points

➢ **ModBus (Slave ModBus)**
  Advanced functions (filter, data logging, trigger, etc.)
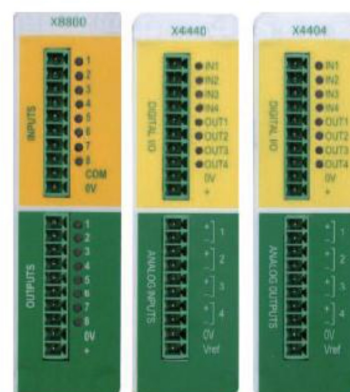
➢ **Web pages configuration**

➢ **Repeater & function watchdog**

➢ **Easy settings**

➢ **DIN Rail mounting**

➢ **Compatible ATIM ARM range**

> **AVAILABLE VERSIONS**

APPLICATIONS TYPE
STATES AND ALARMS TRANSMISSION
- EnergY (hydroelectric central ...)
- Water and wastewater management
- Secured remote control
- Rolling crane
- Stacker crane, conveyor systems
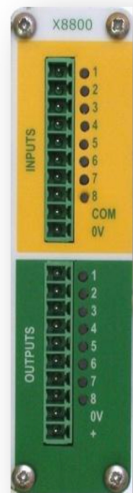- Call operator systems

*Machine to Machine

www.atim.com

ARM-D88

Advanced Radio Modem
Digital 8I/8O

Aluminum Box IP40
DIN Rail

Weight ~ 300g / module

ARM range compatibility

ARM-SE: Radio modem Serial/Ethernet

ARM-D: Digital version, 2DI + 2DO

ARM-DA: Digital & Analogue Version

ARM-IO: Version –D/ -A/ -D-LP/ -A-LP/ -S

ARM-X: Old extension modules version

Products codes

ARM-D88: 8DI + 8DO (Vmos)

ARM-DAI/I: 4DI+4DO+4 inputs 4-20 mA

ARM-DAO/I: 4DI+4DO+4 outputs 4-20 mA

ARM-DAI/U: 4DI+4DO+4 inputs 0-10V

ARM-DAO/U: 4DI+4DO+4 outputs 0-10V

ARM-…: For specific products contact us

OPERATION MODES

- Mirror mode point to point and multipoint
- ModBus Slave (via radio or RS485 link)

GENERAL INFORMATION

ENVIRONMENT :

- Temperature : -20 to +50°C/ Stock : -30 to +70°C

EXTRAS:

- Led indicator for each digital inputs & outputs
- Screw terminal block (3.96mm)
- Coding wheel, 16 channels & Dip switch (Test mode & RS485 Resistor)

INTERFACES

- RJ45 10 Base T connector, web pages configuration
- Screw terminal block: power supply (Vcc/ Gnd), RS485 (A/B), 1 digital input (IN) and 1 watchdog output (OUT)
- Digital Inputs: Boolean state/ trigger 32 bits (E1 to E8: 1kHz)
- Digital Output: Mofset protected (10-30 Vcc – 0.5A max)
- Contact us for RS232 version instead of RS485.
- Power supply, 10-30 Vcc.
- RF features. 868MHz, 25 & 500 mW, GFSK modulation, Baud rate: 9600/ 19 200 bps. Certification: RTTE1995/5/CE – ETS300-220-3v1.1.1. CEM EN 301 489-3 v1.4.1 – Security ZNF EN60950 Ed.2000 – RoHS conformity
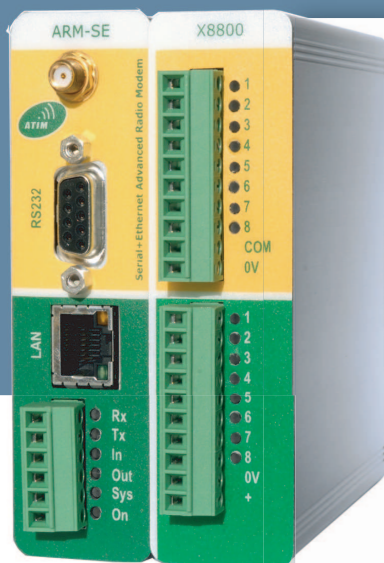
ARM-X
Advanced Radio Modem - eXtended

Licence free M2M*

Contacts carrying & analogical values

Digital / Analogical

The ARM-X extension module

is designed for applications such as remote control, monitoring, telemetry, data transfer, ... where cabling is sensitive and expensive (dam, weather station, mechanic installations, ...), as well as for mobile applications (vehicles, cranes, robotics, ...). It offers a complete ready-to-use solution avoiding in some case the use of PLCs or I/O terminals.

The input-output modules are available in digital and in analog (0-10V / 4-20mA). Thermocouple and PT100 versions will complete this range soon. They are assembled with a base radio modem ARM-S (serial) or ARM-E (Ethernet). They can also operate with ARM-S1 or ARM-E1 base (without radio modem) for a wired communication in RS232 or RS485 (mirror or Modbus mode).

The Windows software " ARM MANAGER " enables the configuration of ARM-X and the adjustment of digital input filtering time, fall-back position of digital outputs, counting on upward, downward front or on state as well as different specific features. For analog inputs (12 bits that is to say 4096 points), it is possible to select the type of input (0-10V, +/- 10V, 4-20mA) as well as automatic triggering of a digital output order depending on high or low threshold. For analog outputs (12 bits), it is possible to configure a fall-back value.

▶ **Simple solution** (no automaton needed)

▶ **Extensions for ARM-SE radio modem** (1 to 4 modules)

▶ **Up to 32i / 32o** (or 16i + 16o analogical and 16i + 16o **4-20mA**)

▶ **Mirror mode** point to point and multipoints

▶ **ModBus mode** slave Modbus) **with advanced functions** (filtering, memorization, counting, etc...)

▶ **Configuration** with **web pages**

▶ Work with the **ARM-SE** radio modem (see technical sheet)

▶ Aluminium box for **rail DIN** mounting

▶ **Compatibility** with the **ARM-IO and ARM-D(A)** range

>AVAILABLE VERSIONS
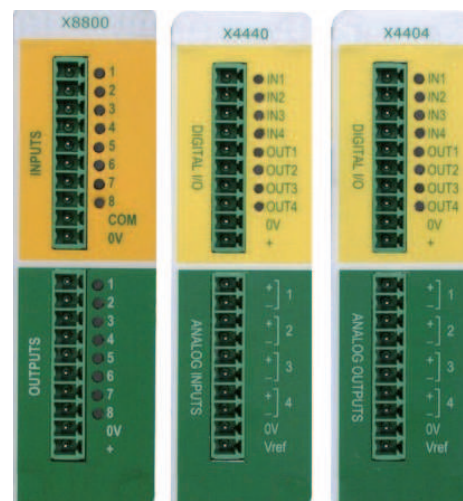
APPLICATIONS TYPE
STATES AND ALARMS TRANSMISSION

- EnergY (hydroelectric central ...)
- Water and wastewater management
- Secured remote control
- Rolling crane
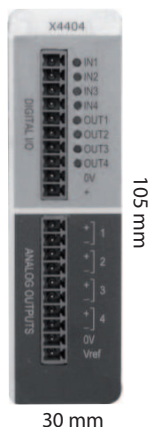- Stacker crane, conveyor systems
- Call operator systems

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* Machine to Machine

ARM-X
Advanced Radio Modem
eXtended

X4404

DIGITAL I/O
- IN1
- IN2
- IN3
- IN4
- OUT1
- OUT2
- OUT3
- OUT4
- 0V
- +

ANALOG OUTPUTS
- 1
- 2
- 3
- 4
- 0V
- Vref

105 mm

30 mm

Aluminum box IP40
for rail DIN mounting

Low thickness in an electric
caninet

Weight ~ 300 g / module

Compatibility with the ARM range

ARM-SE : radio modem Serial / Ethernet

ARM-D: "Digital" version, 2 inputs 2 outputs

ARM-DA: "Digital" & "Analogical" version

ARM-IO : -D / -A / -S / -D-LP / -A-LP versions

ARM-C8 et -U8 : transceivers O.E.M. versions

Articles references
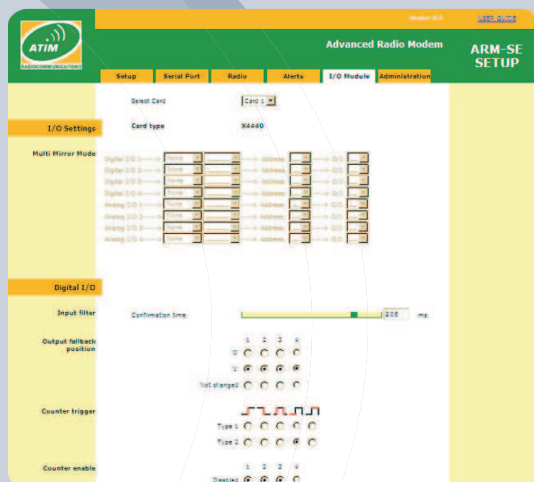
ARM-X8800 :   8I+8O digital (optocoupled / Vmos)
ARM-X4440/I : 4I+4O digital + 4 inputs 4-20mA
ARM-X4440/U: 4I+4O digital+ 4 inputs 0-10V
ARM-X4404/ I: 4I+4O digital+ 4 outputs 4-20mA
ARM-X4404/U: 4I + 4O digital+ 4 outputs 0-10V
ARM-X.... : contact us for speific uses

Technical specifications

FUNCTIONALITIES

- Mirror mode point to point or multipoint
- Modbus slave (radio or serial link)

GENERAL INFORMATION

ENVIRONMENTAL
- Operating temperature: -20 to +50°C
- Storage temperature: -30 to +70°C
- Humidity: 0 to 95% (no condensing)

MISCELLANEOUS
- Led for each digital input and output
- Plug connector (3.96mm pitch)
- Separated power supply for base module and input/output modules (0-30Vcc)

CONNECTIONS

INTERFACES
- Base module: RS232/RS485 (ARM-S) or Ethernet
(ARM-E)
- Digital inputs: opto-isolated (common ground) - 32-bit
counting (E1 to E7 : 500Hz / E8 : 10kHz)
- Digital outputs: protected Mosfet (10-30Vcc)
- Analog inputs 0-20mA / 0-10V 12-bit (common or
differential mode)
- Analog outputs 0-20mA (version /I) 12-bit

power supply

Via ARM-SE power supply (10-30Vcc)

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Chemin des guillets • 38250 Villard de Lans - FRANCE
Tél. +33(0)4 76 95 50 65 • Fax +33(0)4 76 95 50 64 • Email : arm@atim.com

ARM-IO
Advanced Radio Modem

Licence free M2M*

>1 km in 868 MHz 25mW

Serial / Digital / Analog / PT100 & Low Power

ATIM
RADIOCOMMUNICATIONS

ARM-IO

- **D**igital
- **A**nalog
- **S**erial
- **P**t100

CE

Power supply
6-30V ⎓
100mA

Radio modems ARM-IO 868MHz 25mW have been developed in order to answer to a big need of wireless data transmission in disturbed industrial environment (400m), and in outside environment until 1000m LOS (line of sight).

Presented in a IP65 box with cable gland and antenna, these modules exist in different versions: Serial (RS232/RS485), Digital, Analogical (4-20mA, PT100), and Low Power.
ARM-IOD and -IOA can work like Modbus slaves or in mirror mode. ARM-IOS allow to create a wireless point-to-point serial link, or multipoint serial link.

On the ARM-IOD and -IOA (with external power supply), the high-performance sleep mode divides the power consumption by 100, allowing to supply the modem with a small solar panel.

The ARM-IOD-LP (Digital, Low Power), with lithium battery can work in pulse counting or states reports, like to read a water counter, or to transmit 2 digital states.
The ARM-IOA-LP (Analogical Low Power) is equipped with an output which power a sensor during the "awakeness" period, making the measurement, and transmitting it by radio.

These information can be got back via an ARM-SE in modbus /TCP or /RTU, or via an ARM-X (or -D and -DA) in mirror mode.

▸ New radio modems range **868 MHz** (1 - 25mW)

▸ **European norm,** Licence free

▸ **Low cost** (best performance/price ratio)

▸ **Inputs/Outputs:** serial link **RS232/485** in transparent or secured mode, **digital input** counting ou boolean, **analogical input** 0-10V / 4-20mA / PT100, **lithium battery version.**

▸ **«NLOS» functioning** (non line of sight), alternative to Wi-Fi in obstructed and non line of sight areas.

▸ **Automatique configuration** (+ "expert" mode via radio)

▸ **Advanced functions :** LBT, repeater routing mode, ...

▸ **IP65 box** for outdoor use, antenna connector

>Infrastructure **example** M2M

Counting Modules

Extension modules: 4-20mA, 0-10V, digital

0-10V

4-20mA

Switches
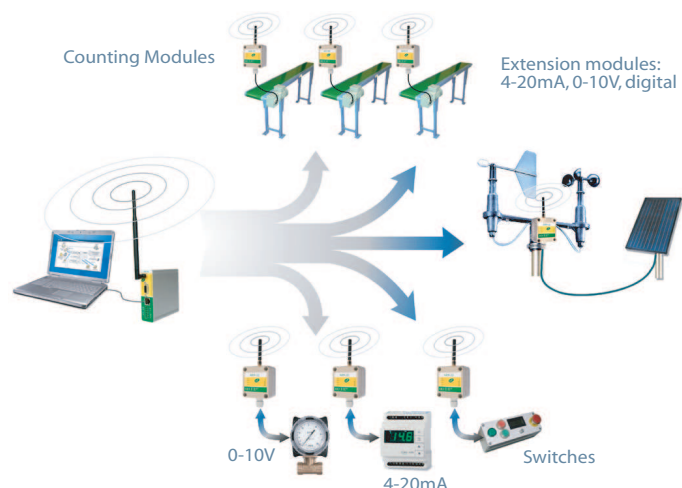
APPLICATIONS TYPES
SIMPLE AND EFFICIENT WIRELESS TRANSMISSION

- Street furniture, electronic road signs
- Water management
- Tower crane, anemometer
- Irrigation, greenhouses
- Grain silos
- UUV, UAV, military field …

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* Machine to Machine

ARM-IO
Advanced Radio Modem

ARM-IO

65mm
40 mm
60 mm

IP65 ABS box
for outside mounting

SMA female connector for
external antenna

Weight : 100 g

ARM range compatibility

ARM-SE : radio modem Serial / Ethernet

ARM-X : "eXtended" inputs/outputs versions

ARM-D : digital version, 2 inputs 2 ouputs

ARM-DA : digital version, 2 inputs 2 outputs
(+ 1 input and 1 output 4/20 mA)

ARM-C8 et -U8 : transceivers O.E.M version

Articles references

ARM-IOS : serial version (RS232 / RS485)
ARM-IOD : digital version (1 input + 1 output)
ARM-IOA : analogical version (1 analogical input + 2
digital outputs)
ARM-IO-P : PT100 (1 input PT100)
ARM-IOD-LP : Low Power lithium battery, 2 digital inputs
ARM-IOA-LP : Low Power lithium battery, 2 voltage
inputs + 1 sensor power supply output

Technical specifications

FUNCTIONALITIES

ARM-IOS (Serial)
Serial transmission, transparent or secured modes, 250 octets buffer
Serial link debit : 1200bps to 11500bps
Configuration via AT commands

ARM-IOD/-IOA/-IOP/-LP (digital/analogical/PT100/low power)
Mirror mode (LBT, listen before talk + automatic change channel)
Slave modbus mode
"Sensor" mode, setting off emission with alarm

COMMON FUNCTIONS
Possibility of configuration via radio with an ARM-SE
Repetition path with routing

GENERAL INFORMATION

CONFIGURATION :
Automatic
Configuration and test mode in local and in a distance (depends on the version)

ANTENNE :
SMA female antenna connector
Recommended antennas: angled ½ wave or shorted ¼.

ENVIRONNEMENT : temperature functioning/storage: -30°C to +60°C/-40°C to +70°C

NORMALIZATION : Directive RTTE1995/5/CE - ETS300-220-3 v1.1.1
CEM EN 301 489-3 v1.4.1 - SécuritY NF EN60950 Ed.2000

LIGHTS AND OTHER : 1 or 2 LEDs, emission/reception (depending on the version)
1 jumper for reset (back to factory settings), 1 jumper for RS485 terminal resistance

CONNECTIONS

Connection via terminal bloc 6 points at the 2.54mm pitch

-S: 1 port RS232 RxD TxD + 1 port RS485 2 wires A/B

-D: 1 input (bool or counter 100Hz max), 1 digital output

-A: 1 input 4-20mA or 0-10V + 2 digital inputs

-P: 1 input for temperature sensor PT100

-LP (low power) version:

-D-LP: 2 digital inputs

-A-LP: 2 inputs voltage 0-2,5V + 1 output PNP (power
supply sensor)

Connection via M12 connector 4 points (watertight)
[0V - IN1 - IN2 - OUT1]

RADIO INTERFACE "RF"

868-870MHz band, 1-25mW (0-14dBm)

GFSK modulation

Radio debit: 19200bps NRZI

16 channels configurable with soft or automatically

Sensibility in reception : -102dBm @ 9600bps

POWER SUPPLY

ARM-IOS/-D/-A/-P : 5-30Vcc   ARM-IO-LP: integrated lithium battery 3,6V

Consumption @ 12V : 100mA in emission, 25mA in reception, 250µA in sleep
mode / ARM-LP ~15µA

Document non contractuel, spécifications modifiables sans préavis - Mai2009

WLI-E

Industrial WLAN

Licence free M2M*

Wi-Fi 802.11b/g

E for Embedded systems

Ruggeg Wlan Harsh Environnements
WLI-E

▶ Industrial WLAN interface for **rough environments**

▶ **International standard,** without license 802.11b/g 2,4GHz (also exists in 802.11a 5 GHz)

▶ Excellent **quality/price** ratio

▶ **AP** (access point), **client**, **bridge** mode

▶ Configuration with **web page** (local) or in a distance + Telnet

▶ **Front LEDs** for visualization of functioning and reception level

▶ **Advanced functions :** WPA2, watchdog, SSH, SNMP

▶ **Q.O.S (quality of service)** function

▶ **IP66 case** for outside use, M12 connectors (version with resin in option)

The Wireless LAN WLI-E interface has been created for applications which need reliability robustness in rough environments and embedded systems: tramways, bus, trucks, tower cranes, rolling cranes, etc.

The WLI-E module provides IP66 index protection thanks to its aluminum case and its two M12 tight normalized connectors (one for the power supply and one for the Ethernet connection). It can be put directly outside next to the antenna which is put on directly or can be deported (N male connector). It supports Access Point, WDS (client or AP) modes, and offers advanced possibilities, such as table and channels scan.

The configuration is made by its very intuitive web interface, with many integrated test and diagnostic utilities (output test, statistics, ARP table, activity Log, site survey, etc.). The configuration can also be made by TELNET, SSH, or HTTPS.

The industrial Wi-Fi WLI-E interface will satisfy you by its easy assembly and configuration, its robustness, ant its performances and technical possibilities.

Applications are many, for video transmission, sound transmission, data on TCP/IP, or link different systems, like industrial automaton, acquisition centrals, supervision centrals, etc.
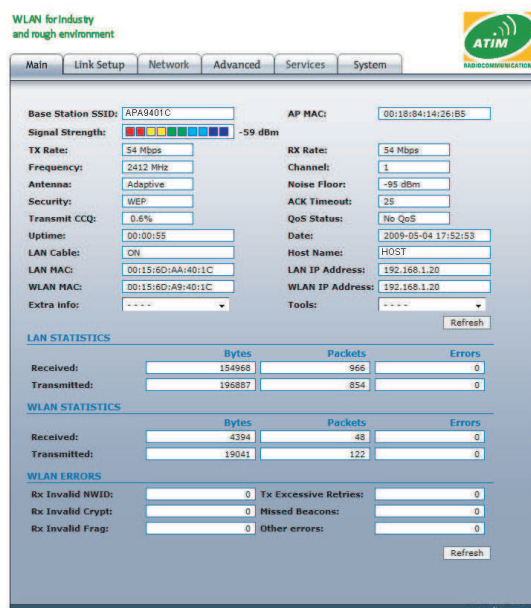

APPLICATION TYPES
TRANSPORT, INDUSTRY, BUILDING TRADE

- Bus, tramways, trains, subways, etc.
- Rolling cranes
- Tower cranes, building sites vehicles
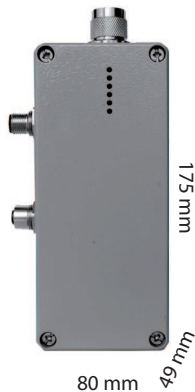- Embedded camera

www.atim.com

WLI-E

Wireless Lan
for Industrial and
Embedded applications

Aluminum case
IP66 tightness
Dedicate to rough
environment and embedded
applications

M12 tight connection
Weight: ~ 500g

175 mm

49 mm

80 mm

Recommended antennas

ANT2400-F5:   antenna 5dBi (direct mounting)

ANT2400-O8:   collinear antenna 8dBi (for pole)

ANT2400-P9, P15: pannel antenna dBi, 15dBi(directive)

ANT2400-R15,R20: reflector antennae 15/20dBi

(directive). Use the low loss cable CFP10 (with 2,4GHz)

ANT5800-F5:   antenna 5dBi (direct mounting)

Articles references

WLI-E/24 :   version 802.11b/g (2.4GHz)

WLI-E/58 :   version 802.11a (5.8GHz)

FIX-RD1 :   option for rail DIN fixation

WLIE-CAB :   cable kit (1 Ethernet + 1 power supply)

Technical specification

FUNCTIONNALITIES :

- Wireless network interface 802.11a/b/g (2 versions) multimode

- Output: 1 to 54Mbps (802.11a and 802.11g) / 1 to 11Mbps (802.11b)

- Powerful, intuitive and evolving firmware

GENERAL INFORMATION

CONFIGURATION :
- By embedded web page, secured by password
- Backup parameters in EEPROM
- TELNET, SSH, HTTPS modes

SECURITY
- WEP WAP WPA2 AES encryption
- MAC addresses filtering
- SSID broadcast deactivation
- Firewall and traffic limitation options

ENVIRONMENT :
- Functioning temperature: -25°C to +70°C
- Storage temperature: -40°C to +80°C
- Humidity: 0 to 95% without condensation

NORMALIZATION :
- CE directives <en300328 / healthy REC519 / EN301489 / 2004/104/CE
(strengthening norm for moving vehicles).
- Compatible RoHS

LIGHTS :
- 1 power supply LED
- 1 network LED
- 4 reception level RSSi LEDs

CONNECTIONS

IP66 tight connectors:

- M12 female coding D 4 points (Ethernet LAN)

- M12 male 5 normalized pins (power supply 9-39V)

- 1 N male antenna connector

RADIO INTERFACE

Standard IEEE802.11.a (5.745-5.825GHz) or 802.11/b/g (2.412-2.462GHz)

Modulation: OFMD (802.11a/g) DSSS(802.11b)

Emission power: adjustable, max 20dBm (10mW) (22dBm in version A)

Sensibility in reception: tolerance +/-1.5dBm

802.11b: -95dBm @ 1Mbps / -90dBm @ 11Mbps

802.11g: -92dBm @ 6Mbps / -72dBm @ 54Mbps

802.11a: -94dBm @ 6Mbps / -74dBm @ 54Mbps

POWER SUPPLY

9-39Vcc external with M12 connector (possibility POE version if big sales volume)
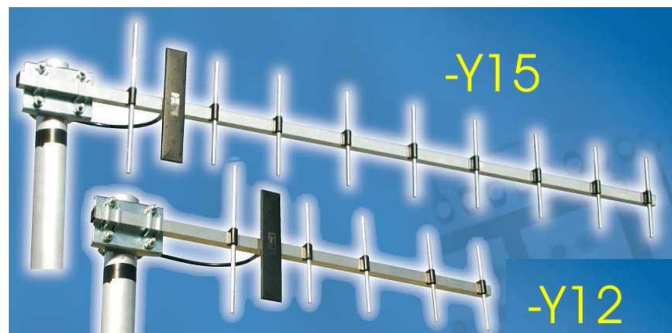
Maximum consumption: 250mA @ 12Vcc

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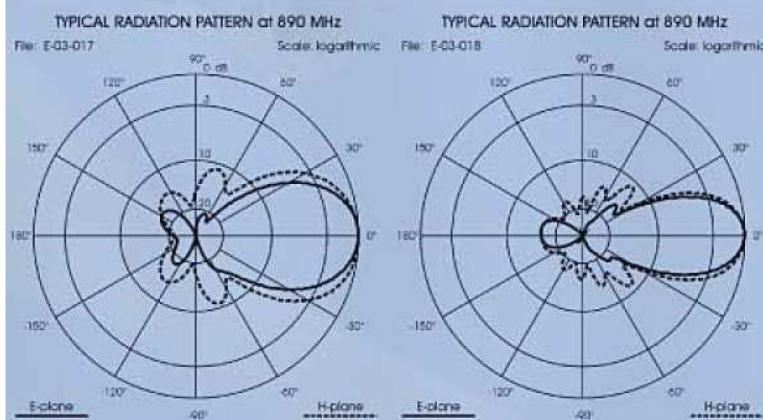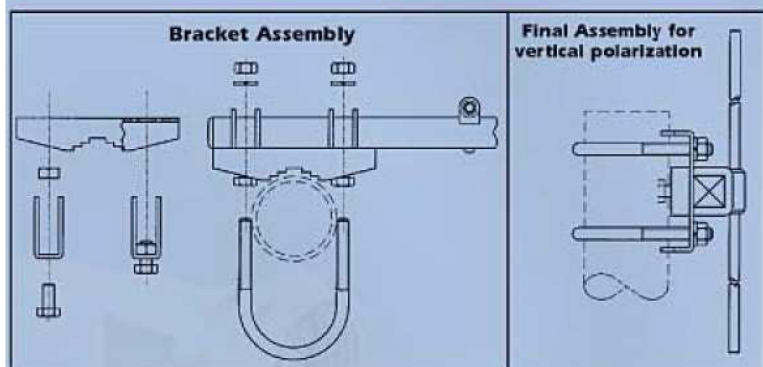
ANT868-Y12 / Y15   868MHz Yagi antenna

- **Base station antenna, directional**
- **Mono-band 824-960MHz, High gain**
- **Vertical polarization**
- **Mounting Mast Ø 25-42mm**
- **Protection from static discharges**
- **Anodised aluminium alloy**
- **2 versions (11.5dBi et 15dBi)**

-Y15
-Y12

Antenna Mounting

Bracket Assembly

Final Assembly for vertical polarization

TYPICAL RADIATION PATTERN at 890 MHz
File: E-03-017   Scale: logarithmic

TYPICAL RADIATION PATTERN at 890 MHz
File: E-03-018   Scale: logarithmic

E-plane   H-plane

E-plane   H-plane

TECHNICAL SPECIFICATIONS

ELECTRICAL DATA

- Type: ANT868-Y12 : 6 elements yagi antenna, ANT868-Y15 : 10 elements yagi antenna
- Frequency range : 824-960MHz
- Impedance : 50 ohms unbalanced
- Gain : ANT868-Y12 : 11.5dBi / -Y15 : 15dBi
- Front to back ratio: -Y12 : ≥20dB / -Y15 : ≥15dB
- V.S.W.R : <1.4 :1 in bandwidth
- Max Power: 10W (CW) at 50°C

MECHANICAL DATA

- All parts are at the ground
- Connector : FME-male
- Wind surface : 0,02 / 0.03m2
- Wind load : 27N / 48N at 150km/h

- Materials : Aluminium, PCB, thermoplastic
- Dimensions : -Y12 : 190x580x60mm
  -Y15 : 190x980x60mm
- Weight :   -Y12 : 410g
  -Y15 : 500g
- Mounting mast Ø 25-42mm

ANT868-BZ   Omnidirectional   Antenna 868MHz

- **« Bazooka » antenna 4.15dBi pole mounting.**
- **Frequency : 824-894MHz**
- **Vertical polarization**
- **Supply with pole fixation**
- **Shock protection**
- **Strong construction, excellent reliability**

TYPICAL S.W.R. RESPONSE
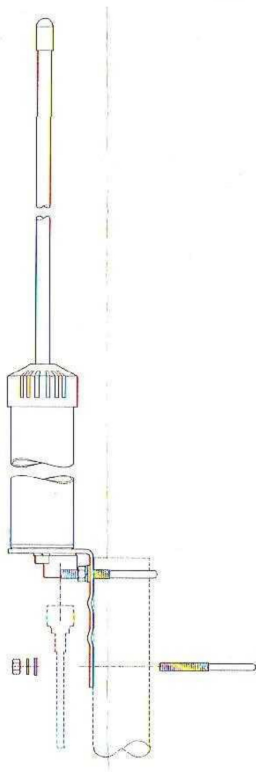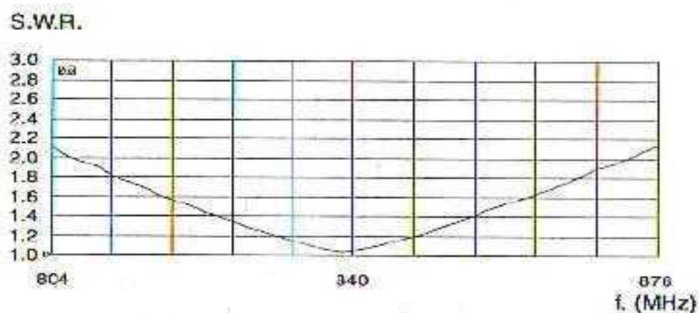
TECHNICAL SPECIFICATIONS

CARACTERISTIQUES

- ☐ **Antenna type: 3/4λ   Coax, J-Pole**
- ☐ **Frequency range : 902-928MHz**
- ☐ **Impedance : 50 ohms**
- ☐ **Gain : 4.15dBi (2dBd)**
- ☐ **Band width : 26MHz @ V.S.W.R 2:1**
- ☐ **V.S.W.R : <1.2 :1 à f.res**

PROTECTION

- ☐ **All the metallic parts are linked to the ground**
- ☐ **N female connector**
- ☐ **Surface to the wind: 0,01m2**
- ☐ **Charge au to the : 17N to 150km/h –180km/h**

DIVERS

- ☐ **Material : Aluminum**
- ☐ **Total height: 360mm**
- ☐ **Weight : 0,485kg**
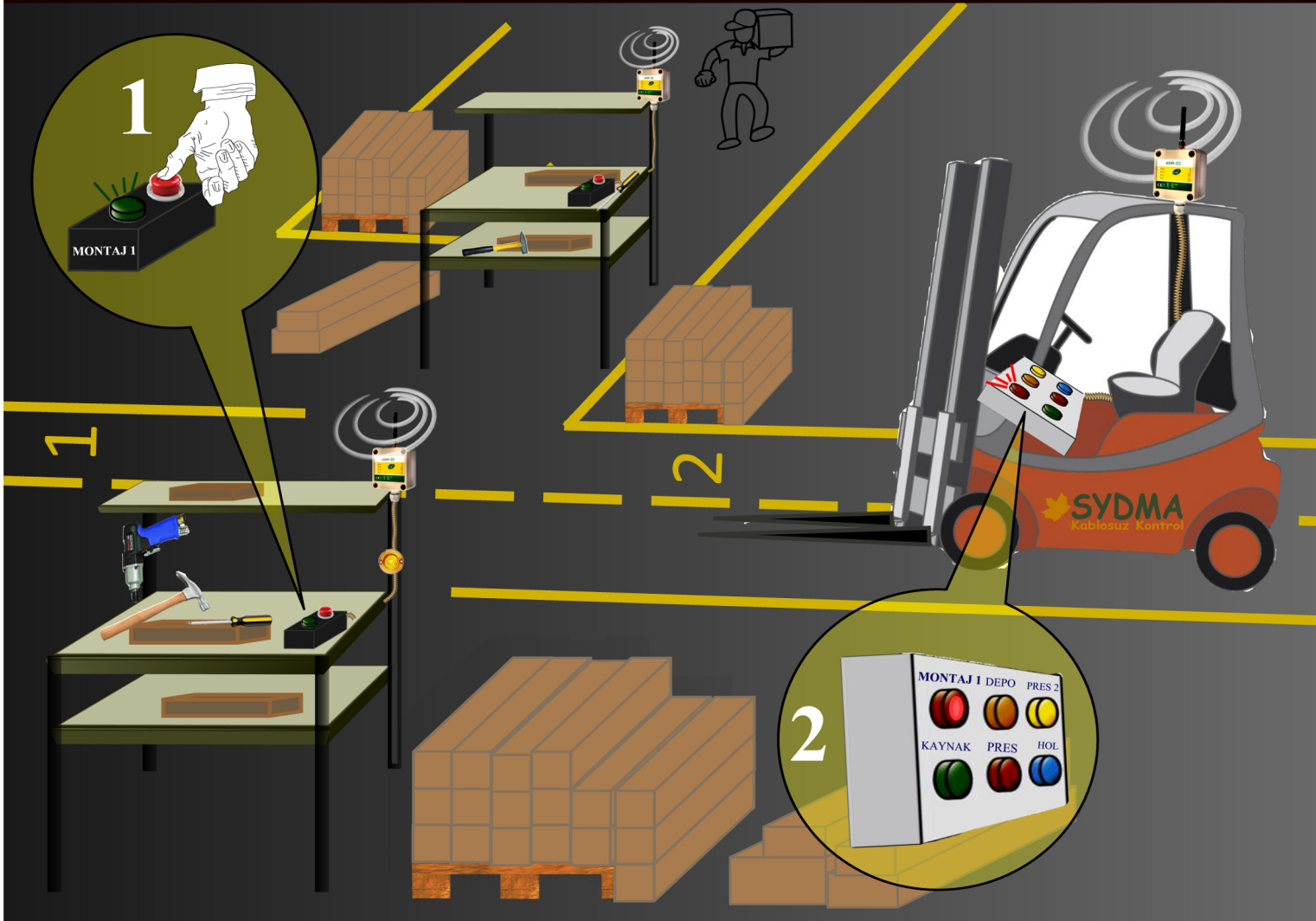- ☐ **Supply with a pole fixation, diameter 35-42mm**

SYDMA
Kablosuz Kontrol

değer katın.

ARM-SE
Seri + Ethernet
Radyo Modem
868MHz - 38400bps
5000m İletişim Mesafesi

SCADA
Bilgisayarı
(Endüstriyel PC)

WLI-E Kablosuz Ethernet
Endüstriyel Wireless LAN
Access Point - AP
2.4GHz - 11Mbps
300m İletişi Mesafesi

RUGGED WLAN FOR HARSH ENVIRONMENTS
WLI-E

Endüstriyel
PLC

Ethernet
Switch

Kontrol Merkezi

Forklift
Çağrı
Sistemi

Büyük İş
Makinaları

Alternatif
Enerji
Sistemleri

SAHA

AGV'ler ve
Hareketli
Araçlar

Vinçler, Kreynler
Bantlı taşıma
sistemleri

Makine-Tezgah
Makine-Merkez
Makine-Makine

ADVANCED RADIO MODEM
(ARM)

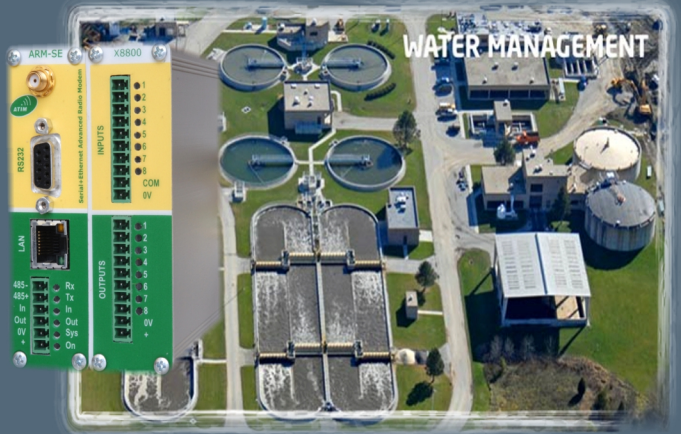## ΛRM-SE Radyo Modem

. Seri (RS232/485) + Ethernet
. 5Km Lisanssız (868MHz)
. 19200bps RF hız (half-duplex)
. Endüstriyel (-20, +50C çalışma sıcaklığı)
. Wi-Fi'ye alternatif (uzun mesafe NLOS)
. Tekrarlayıcı özelliği
. MODBUS TCP/RTU Gateway
. SCADA Uygulamaları

ΛRM-X Genişletme Modülü

. ARM-SE Ana radyo modülü ile birlikte
. X8800 - 8 sayısal giriş / 8 sayısal çıkış
. X4440 - 4 sayısal G/Ç + 4 analog giriş
. X4404 - 4 sayısal G/Ç + 4 analog çıkış
. Toplam 32 sayısal giriş/çıkış ya da
  16 sayısal G/Ç + 16 analog G/Ç

ΛRM-IOX Radyo Modem (uygun maliyet)

. ARM-IOS Seri (RS232/485)
. ARM-IOD Sayısal (1 Sayısal G/Ç)
. ARM-IOA Analog (1 Analog + 2 sayısal giriş)
. ARM-IOP PT100 (1 harici sıcaklık sensörü)
. ARM-IOD-LP Low Power D (dahili Lityum pil)
. ARM-IOA-LP Low Power A (dahili Lityum pil)

WLI-E / SW5002
ENDÜSTRİYEL ETHERNET

. WLI-E 802.11a/b/g Wi-Fi Ethernet 2.4GHz
  Access Point, Client ve WDS modları,
  IP66 kasa, TCP/IP, UDP
. EW5302 Ethernet wireless köprü +2 port
  seri sunucu, TCP/IP, UDP server, client protokol
. Unmanaged/managed Ethernet anahtarlar

SYDMA
Kablosuz Kontrol

SYDMA
Kablosuz Kontrol

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