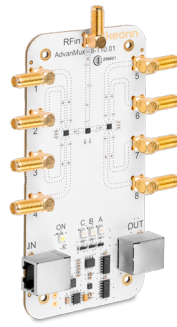# AdvanMux-8 ™
8 port RFID UHF multiplexer

AdvanMux-8 ™
8 port RFID UHF multiplexer

Video

Benefits:

- Reduces the cost of RFID applications with many antennas
- Very fast and easy connection
- Compatible with most reader models
- Easy selection of ports by sending proper commands to the reader
- Easy control of several multiplexers by interconnecting them with standard Ethernet cables
- Low insertion loss

Applications:

- Radiofrequency systems that require more than 4 antennas
- RFID systems in general
- Smart shelves
- Smart cabinets
- Smart surfaces
- Portals

Product overview

AdvanMux-8 is a high performance 8 port multiplexer that expands by a factor 8 the number of antennas that can be connected to each port of an RFID reader.

AdvanMux-8 is compatible with most RFID reader models in the market, including Keonn, Impinj, Zebra, Alien, ThingMagic and others.

AdvanMux-8 is connected to the I/O port of most reader models, and it is controlled by sending simple commands to the reader. This facilitates the control of AdvanMux-8 and its synchronization with the reader. Any port of AdvanMux-8 can be selected at any time.

AdvanMux-8 can be directly connected to AdvanReader-100 and AdvanReader-150 through a conventional Ethernet cable.

For other reader models, a reader-specific cable adapter or the AdvanGPIO connection board can be ordered that connect the digital I/O port of the reader to one of the two RJ45 control ports of AdvanMux-8 multiplexer. The following picture shows the cable adapter for a specific reader model and the AdvanGPIO connection board.

The cable adapter can be easily extended to the required length using regular Ethernet 8-wire cables.

Two RJ45 control connectors are available at each AdvanMux-8 so that one multiplexer can control and power another multiplexer by a simple Ethernet 8-wire cable connection (see diagram below).
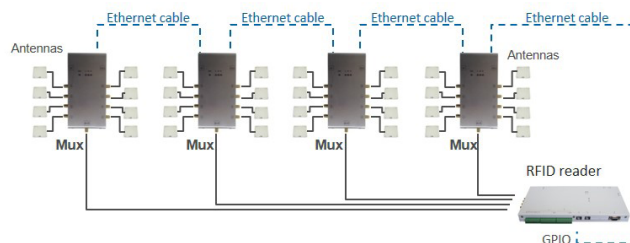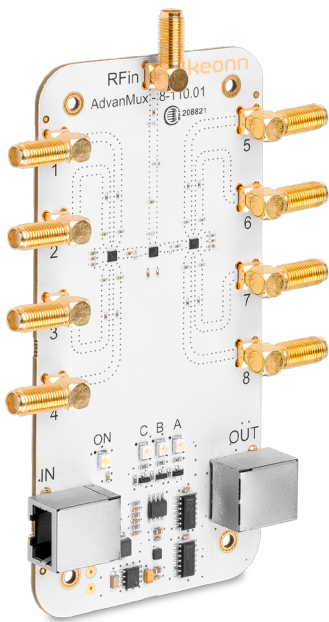

AdvanMux-8 can be controlled both by standard +5 V and open collector digital outputs.

AdvanMux-8 can be powered from +5 V DC to + 48 V DC. This power can be obtained from a power supply or by the available voltage in some reader's I/O ports.

The input RF connector and the 8 output RF connectors are SMA (female).

Three red LED diodes show the digital-in status and one white LED shows the power on status.

AdvanMux-8 ™
8 port RFID UHF multiplexer

Tecnical specifications

Operating frequency	860 MHz to 950 MHz
Number of ports	8
Insertion loss	<1.4 (1.2 dB typical)
Isolation	>35 dB
Return loss	> 22 dB (25 dB typical)
Max input power	33 dBm
Switching time	< 15 µs
RF connectors	1 input and 8 output SMA 50 ohm female connectors
Control and power connector	2 input/output RJ45 connectors (Table 1)
Power supply	Pin 6: 5 V (±5 %), or Pin 4 & 5: 5 V (-2 %) to 48 V (+5 %) (regulated on board). Note: Maximum rating is 50 V
Current consumption	< 12 mA
Digital inputs	0 V/5 V TTL/3 V TTL or open collector Note 1: Reader outputs must sink 2 mA (maximum) Note 2: 3.3 V readers must be 5 V tolerant
AdvanReader-100 and AdvanReader-150	Requires only a conventional Ethernet cable. - AdvanReader allows using two-level multiplexing, so that up to 256 antennas can be connected to the same reader.
Connection to Impinj R220 and R420, and ThingMagic Mercury 6	Requires a cable adapter (available upon request) and a conventional Ethernet cable (UTP cable)
Connection to other readers	Compatibility with most readers. Requirements: AdvanGPIO connection board (available upon request), and for some reader models PoE injector (available upon request)
Cable adapter	Optional. Length: 25 cm (10 inches)
Control connection between AdvanMux units	Through standard Ethernet 8-wire UTP cables
Electrostatic discharge protection	> 1kV ESD protection on all RF ports > 8kV ESD protection on all data ports
Size with enclosure	150 mm x 92 mm x 17 mm (5.9 inches x 3.6 inches x 0.7 inches)
Size without enclosure	150 mm x 92mm x 25 mm (5.9 inches x 3.6 inches x 1.0 inches)
Weight with enclosure	210 g (7.4oz)
Weight without enclosure	77 g (2.7oz)
Operating temperature	-30 °C to 55 °C
Storage temperature	-35°C to 85 °C
EU Directives	RoHS compliant (2002/95/EC), EMC (2004/108/EC)

RJ 45 output

RJ45 pin number	AdvanMux-8 signal
1	B0
2	B1
3	B2
4	Vcc
5	Vcc
6	NC
7	GND
8	GND

Table 1

Truth table

B2	B1	B0	RF in to
0	0	0	Out 1
0	0	1	Out 2
0	1	0	Out 3
0	1	1	Out 4
1	0	0	Out 5
1	0	1	Out 6
1	1	0	Out 7
1	1	1	Out 8

Table 2

Mechanical specifications
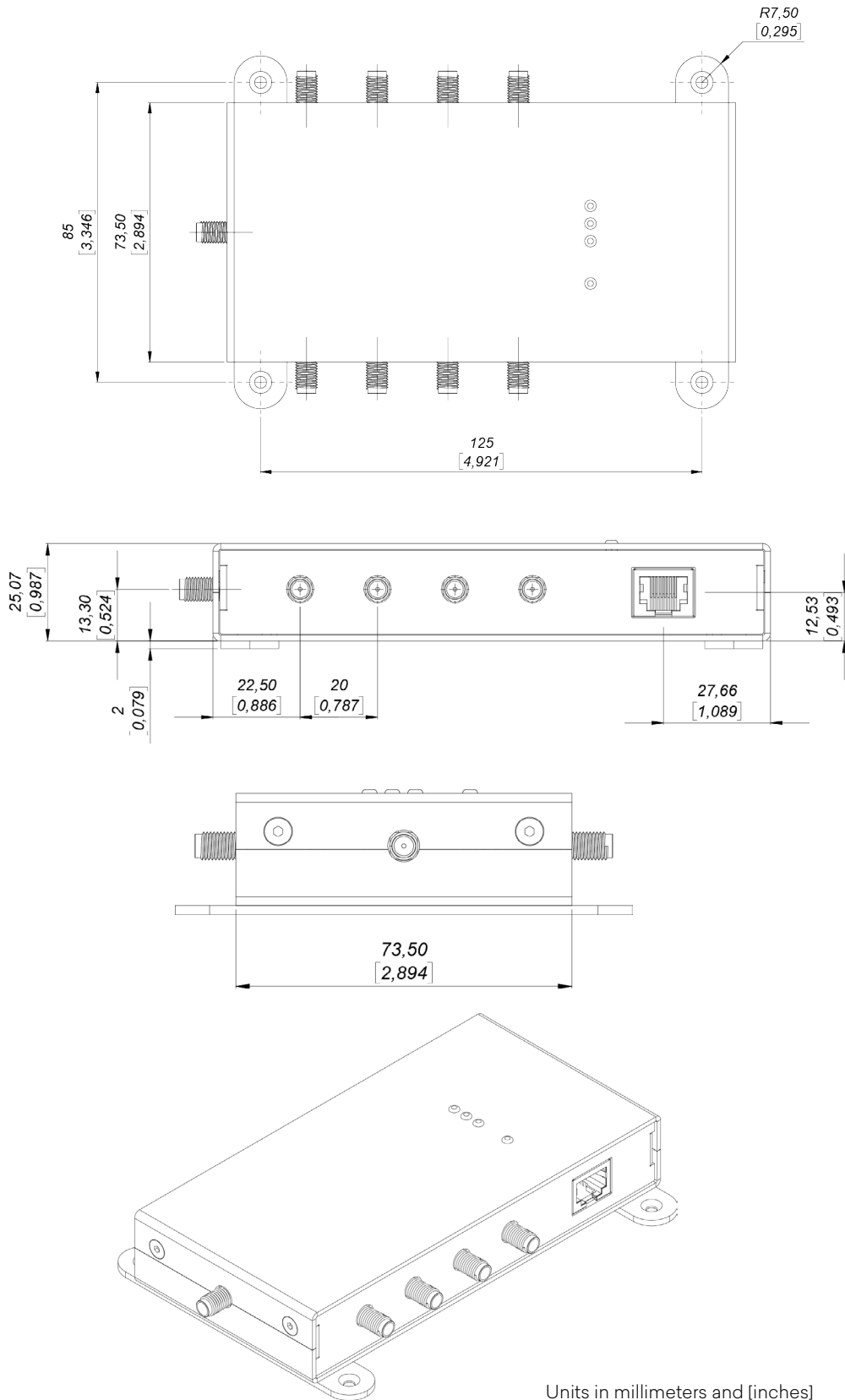
Units in millimeters and [inches]

keonn

Product codes for ordering

@KeonnTech

ADMX	-	NP	-	F	-	mmm	
							NP = Number of Ports
		4					4 ports
		8					8 ports
		16					16 ports
							F = Frame
				e			enclosure
							no enclosure
							mmm = Model
						130	Model number

Examples:

ADMX-8-e-110:

- AdvanMux
- 8 ports
- with enclosure
- Model 130

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