

## Aliaro Solution Brief

# Performing Functional Testing

Perform functional tests on your powerful desktop functional tester from ALIARO and National Instruments. Easy to connect and with our open API it is easier to connect to your existing test framework than ever. Our re-configurable and multi-functional I/O's will greatly enhance your testing capabilities

### Application

- Unknown test object parameters or changeable configuration
- Perform functional tests using manual and/or automated test cases
- Share the test environment between multiple projects
- Running smaller real-time applications or projects with NI VeriStand

## ALIARO Solution

By using pre-defined scripts, the user can re-configure physical pins on the test system to be either an analogue or digital signal. Fault insertion is default on all pins.

You can also decide if it should be an input or output signal. The test system consists of a compact chassis with ALIARO's flexible and modular interface modules, KADRO-MPB-8, to enable extraordinary capabilities.

ALIARO offers the advantage of integration expertise and custom engineering from when implementing the test system to your test lab environment.



## About Aliaro

Aliaro is an established test solution & HIL provider and NI Silver Alliance Partner with offices in USA, UK, China, and Sweden. Together with NI, they design modular, flexible, and cost-efficient solutions for testing and HIL that enable customers to work with open and changeable devices where rapid changes are allowed.

**Contact** Aliaro to learn more about how NI & Aliaro can help you increase product quality and accelerate testing timelines.

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## NI + ALIARO = PERFORMANCE

The hardware and software from NI are used by customers world-wide to create high-performance solutions.

The ALIARO Functional Tester helps you develop and test multiple products and designs in a safe, robust and reliable environment.

The combination of NI and ALIARO technologies help you increase the usage of your investment and improving quality.



The standard configuration for the Functional Tester consists of 16 flexible channels that will use the available signal types listed below.

Signal Types	
Total of physical channels	16
Configurable Analog Input	16
Analog Output	4 (pre-defined pins)
Configurable Digital Input	16 (16)
Configurable Digital Output	16 (16)
Fault insertion	16
Amount of bus nodes	1
External DUT Power connection	Yes (AUX1/AUX2)
Physical dimensions (W x H x D)	(260 x 150 x 390 mm) / (10.2 x 5.9 x 15.4 inch)
Physical weight	(5.3 kg) / (11 lb)
Software Support	LabVIEW, TestStand, VeriStand, Pythons



## Technical data

General	
Controller	Xilinx Artix-7 XC7A200T
Processor speed	1.91 GHz Quad-Core
Processor cores	4
Operating system	NI Linux Real-Time (64-bit))
Communication	Ethernet
RAM	2 GB
Temperature range	Lab conditions
Voltage (max) per channel	+/- 60 V
Current (max) per channel	10 Amps
Amount of flexible I/O	16
Fault insertion on all channels	Open circuit Short to +Batt Short to - Batt Short between signals

Bus communication	
<b>Available CAN</b>	1
Maximum rate CAN	1 Mbps
Maximum-rate CAN FD	5 Mbps
<b>RS-232 Serial Port</b>	2
Maximum baud-rate	921,600 b/s
<b>RS-485 Serial Port</b>	1
Maximum baud-rate	921,600 b/s
<b>Ethernet Port</b>	2
Network interface	10Base-T, 100Base-TX, and 1000Base-T Ethernet
<b>USB Host</b>	2
Compatibility	USB 2.0, Hi-Speed USB 3.1 Gen1, SuperSpeed
Maximum data rate	480 Mb/s / 5 Gb/s

Measurement system – Digital	
<b>Digital Inputs</b>	16 differential
Input range	0 V to 24 V
Sample clock frequency	0 MHz to 10 MHz
<b>Digital Outputs</b>	16 differential
Sample clock frequency	0 MHz to 10 MHz

Measurement system – Analog	
<b>Simultaneous Analog Inputs</b>	16 single-ended or 8 differential
ADC resolution	16 bits
Input range	±10 V, ±5 V, ±2 V, ±1 V
Timing resolution	12.5 ns
Sample rate (per channel)	233 kS/s
<b>Analog Output</b>	4
DAC resolution	16 bits
Range	±10 V
Sample rate	100kS/s/channel
Current drive	±3 mA/channel maximum
Amplifier (add-on)	<200mA/channel

Reconfigurable FPGA	
Type	Xilinx Artix-7 XC7A200T
Number of flip-flops	269,200
Available block RAM	13,140 kbits
Number of DMA channels	16
Number of logical interrupts	32