VAUNIX LAB BRICK · 6 MHZ – 40 GHZ

Programmable Attenuators and Matrix Systems

Vaunix Lab Bricks are compact attenuators controlled via USB or Ethernet for lab, production and automated test systems. The range extends from portable single-channel units to matrix systems with 64 inputs for handover and fading tests.



Product families

Digital attenuators (LDA)

6 MHZ – 40 GHZ · 32 MODELS

Single and multi-channel step attenuators with 1 to 64 channels, portable or rackmount.

Matrix attenuators (VMA)

200 – 7250 MHZ · 10 MODELS

Configurations from 2×2 to 64×16 with up to 512 attenuation paths for handover and MIMO tests.

Mesh network attenuators (VMNA)

600 – 7250 MHZ · 4 MODELS

4 to 9 ports with individually controllable paths between all ports.

Software and control

With GUI, Windows and Linux SDK, LabVIEW drivers and Python examples. Driverless USB interface, Ethernet models with static IP or DHCP.

Flexible on special requirements

Vaunix is very flexible in meeting customer requirements. Lab Bricks, matrix and mesh systems can be adapted to your needs or built to your specification. Talk to us, we will clarify feasibility directly with Vaunix.

bq-microwave GmbH & Co. KG · Hohe Str. 23 · 71549 Auenwald · Germany
+49 (0) 151 25290128 · info@bq-microwave.de · www.bq-microwave.de

Frequency ranges at a glance

ALL PRODUCT FAMILIES · 6 MHZ TO 40 GHZ

Frequency range	Coverage	Models	Channels
DIGITAL ATTENUATORS (LDA)			
6 MHz – 1 GHz		3	1
10 MHz – 3 GHz		6	1
6 MHz – 6 GHz		5	1–8
200 MHz – 8 GHz		14	1–64
10 MHz – 13 GHz		1	1
50 MHz – 18 GHz		1	1
1 GHz – 20 GHz		1	1
100 MHz – 40 GHz		1	1
MATRIX AND MESH SYSTEMS			
Matrix (VMA) 200 MHz – 7.25 GHz		10	2×2 – 64×16
Mesh (VMNA) 600 MHz – 7.25 GHz		4	4–9 ports

Digital attenuators (LDA)

32 MODELS · 6 MHZ – 40 GHZ · 1 TO 64 CHANNELS







The Lab Brick LDA series digital attenuators are bidirectional step attenuators with step sizes from 0.1 dB. They are powered and controlled via USB or Ethernet and can be programmed for fixed attenuation, attenuation ramps and fading profiles.

Key features

- Reliable and repeatable solid-state attenuation
- Programmable attenuation ramps and fading profiles
- Operate multiple devices directly from a PC
- USB and Ethernet control, static IP or DHCP
- GUI, Windows and Linux SDK, LabVIEW drivers, Python examples

Applications

- WiFi, WiFi6E, 3G, 4G, 5G, LTE and DVB
- Microwave radio fading simulators
- Engineering and production test labs
- Automated test equipment (ATE)

LDA model overview

Model	Frequency (MHz)	Chan-nels	Atten. (dB)	Step (dB)	Max. input (dBm)	Insertion loss (dB)	Accuracy (dB)	Switch-ing	Control
LDA-102	6–1000	1	63	0.5	+22	6	1	70 ns	USB
LDA-102N	10–1000	1	63	0.5	+22	6	1	70 ns	USB
LDA-102-75F	10–1000	1	95	0.5	+30	5	1	1.5 µs	USB
LDA-302P-1	10–3000	1	63	1.0	+33	5	1	2 µs	USB
LDA-302P-H	10–3000	1	31.5	0.5	+33	5	1	2 µs	USB
LDA-302P-HN	10–3000	1	31.5	0.5	+33	5	1	2 µs	USB
LDA-302P-1N	10–3000	1	63	1.0	+33	5	1	2 µs	USB
LDA-302P-2	10–3000	1	90	2.0	+33	5	1	2 µs	USB
LDA-302P-2N	10–3000	1	90	2.0	+33	5	1	2 µs	USB
LDA-602	6–6000	1	63	0.5	+22	8	1	70 ns	USB
LDA-602N	6–6000	1	63	0.5	+22	8	1	70 ns	USB
LDA-602EH	200–6000	1	120	0.1	+28	6.5	0.5	15 µs	USB
LDA-906V	200–6000	1	90	0.1	+28	5	0.25	15 µs	USB
LDA-906V-8	200–6000	8	90	0.1	+28	5	0.25	15 µs	USB
LDA-802Q	200–8000	4	120	0.1	+25/30	6.5	0.6	2 µs	USB/Ethernet
LDA-802-8	200–8000	8	120	0.1	+25/30	6.5	0.6	2 µs	USB/Ethernet
LDA-802EH	200–8000	1	120	0.1	+25/30	6.5	0.6	2 µs	USB/Ethernet
LDA-908V	200–8000	1	90	0.1	+23	8.5	0.25	15 µs	USB/Ethernet
LDA-908V-4	200–8000	4	90	0.1	+23	8.5	0.25	15 µs	USB/Ethernet
LDA-908V-8	200–8000	8	90	0.1	+23	8.5	0.25	15 µs	USB/Ethernet
LDA-802-12	200–8000	12	120	0.1	+30	7.5	1	2 µs	USB/Ethernet
LDA-802-16	200–8000	16	120	0.1	+30	7.5	1	2 µs	USB/Ethernet
LDA-802-32	200–8000	32	120	0.1	+30	7.5	1	2 µs	USB/Ethernet
LDA-608V-4	200–8000	4	60	0.1	+23	6	1	15 µs	USB/Ethernet
LDA-608V-2	200–8000	2	60	0.1	+23	6	1	15 µs	USB/Ethernet
LDA-908V-2	200–8000	2	90	0.1	+23	8.5	0.25	15 µs	USB/Ethernet
LDA-802-64	200–8000	64	120	0.1	30	7.5	1	2 µs	USB/Ethernet
LDA-802-48	200–8000	48	120	0.1	30	7.5	1	2 µs	USB/Ethernet
LDA-133	10–13000	1	63	0.5	+22	8	1.5	50 ns	USB
LDA-5018V	50–18000	1	50	0.1	+23	10	1	2 µs	USB
LDA-203B	1000–20000	1	63	0.5	+20	6.5	2	350 ns	USB/Ethernet
LDA-403	100–40000	1	31.5	0.5	+15/24	9.5	2	35 ns	USB/Ethernet

All models 50 Ω, except LDA-102-75F with 75 Ω. The LDA-602N is the version of the LDA-602 with N-type connector. Accuracy typical.

Matrix attenuators (VMA)

10 MODELS · 200 – 7250 MHZ · UP TO 512 ATTENUATION PATHS



Matrix attenuators give engineers precise control over wireless signal paths in lab and production test environments. With configurations for many inputs and outputs, they allow complex multi-channel handover and MIMO testing across 5G, WiFi and SATCOM systems.

Key features

- Frequency range 200 to 7250 MHz
- Programmable attenuation with 0.1 dB step size
- Up to 110 dB total attenuation per path
- Software-controlled ramps, fading profiles and sweeps
- Compact rackmount sizes from 1 RU to 15 RU

Applications

- Multi-channel handover testing for 5G and WiFi networks
- Simulating cross-channel interference and signal fading
- SATCOM terminal and antenna array performance testing

Flexible on special requirements

Further configurations on request: in addition to the standard models, Vaunix also builds customer-specific versions.

Model	Configuration	Inputs	Outputs	Attenuation paths	Size
VMA-2X2-8110	2×2	2	2	4	1 RU
VMA-4X4-8110	4×4	4	4	16	2 RU
VMA-6X4-8110	6×4	6	4	24	3 RU
VMA-Q8X8	8×8	8	8	64	3 RU
VMA-Q8X8SE	8×8	8	8	64	3 RU
VMA-Q24X8SE	24×8	24	8	192	6 RU
VMA-64x4-8110	64×4	64	4	64	3 RU
VMA-64x8-8110	64×8	64	8	64	3 RU
VMA-Q64X8SE	64×8	64	8	512	15 RU
VMA-Q64X16SE	64×16	64	16	512	15 RU

All data as specified by the manufacturer Vaunix. Detailed datasheets and quotations are available directly from bq-microwave.

Mesh network attenuators (VMNA)

4 MODELS · 600 – 7250 MHZ



Mesh network attenuators validate highly interconnected wireless systems in which every port communicates with every other through independent, controllable attenuation paths. Fading and handover scenarios can be recreated repeatably in the lab.

Key features

- 4-port to 9-port or larger mesh configurations
- Individually controllable paths between all ports
- Frequency coverage from 600 to 7250 MHz
- Up to 110 dB attenuation per path with 0.1 dB steps
- USB and Ethernet programmability for automation
- Rackmount design

Applications

- Mobile ad hoc networks (MANETs), e.g. tactical and emergency response communications
- Mesh network performance for IoT and smart city
- MIMO WiFi, IoT, 5G and beamforming

Flexible on special requirements

Further configurations on request: in addition to the standard models, Vaunix also builds customer-specific versions.

Model	Ports	Attenuation paths	Size
VMNA-7250-4	4	6	1 RU
VMNA-7250-6	6	15	2 RU
VMNA-7250-8	8	28	3 RU
VMNA-7250-9	9	36	3 RU

Your contact for Vaunix

Consulting, quotation and order processing from one source. Talk to us about your test task, we will help you choose.

+49 151 252 901 28 · info@bq-microwave.de · www.bq-microwave.de