

USER GUIDE

NI MKD-1117

Rack-Mount 1U LCD Monitor, Keyboard, and Mouse Drawer

This document includes an overview of and specifications for the NI MKD-1117 rack-mount drawer.

Overview

The National Instruments MKD-1117 is a rack-mount drawer for use with PXI systems, industrial PCs, and desktop PCs in rack-mounted automated and manufacturing test applications. It includes the following features.

- 1U height in a 19 in. rack
- 17 in. high-brightness TFT LCD panel with 1280 × 1024 maximum resolution
- 105-key English keyboard and touchpad mouse
- Drawer slides with thumb screws and self-locking rails
- Complete rack-mount kit included
- Anti-glare tempered glass LCD protection
- VGA connectivity to the LCD
- USB or PS/2 connectivity to the keyboard and touchpad mouse
- Steel construction
- Universal AC power supply
- CE, FCC, and UL certification
- EIA-310C and IEC-3 specification compliance
- RoHS compliance

For complete PXI system configuration information, refer to ni.com/pxiadvisor.

Rack Mounting

The NI MKD-1117 includes a complete rack-mount kit and occupies 1U height in a 19 in. rack. When used with a PXI system, the NI MKD-1117 must not block the chassis air outlets on the top of the chassis. Thus, you should mount the NI MKD-1117 below the PXI chassis or at least 1.75 in. (44.5 mm) above the PXI chassis.

Shipping Components

The NI MKD-1117 kit includes the following items:

- An NI MKD-1117
- A rack-mount kit
- A U.S. 120 VAC power cord
- A VGA and dual-PS/2 cable
- A USB-to-dual-PS/2 adapter cable

Ordering Information

To order the NI MKD-1117 kit or power cords, refer to the following kit numbers.

NI MKD-1117 Kit

NI MKD-1117 1U Rack-Mount
LCD Monitor, Keyboard,
Mouse Drawer779872-01

Additional Power Cords¹

North American 240 VAC.....763068-01
Japanese 100 VAC.....763634-01
United Kingdom 240 VAC.....763064-01
Swiss 220 VAC763065-01
Australian 240 VAC763066-01
Universal Euro 240 VAC763067-01

¹ U.S. 120 VAC power cord included.

Specifications

Electrical

| | |
|--------------------|--|
| Input | 100 to 240 VAC, 50 to 60 Hz, 3A maximum |
| Power switch | Rear of product |

LCD

| | |
|--------------------------|---|
| Auto-power switch | LCD backlight turns off when folded down |
| Diagonal size | 17 in. (43.18 cm) |
| Maximum resolution | 1280 × 1024 |
| Display area | 13.30 × 10.64 in. (33.79 × 27.03 cm) |
| Contrast ratio | 450:1 |
| Brightness | 300 NTS |
| Frame rate | 60 Hz (typical), 75 Hz (maximum) |
| Color | 16.7 M colors |
| Viewing angle | 160/160 |
| Backlight MTBF | 50,000 h under 25 ±5 °C |
| Control system | OSD |
| Connectivity | VGA |

Keyboard and Mouse

| | |
|--------------------|--|
| Keyboard | 105-key, English language |
| Mouse | Touchpad |
| Connectivity | 2x PS/2 (USB-to-dual-PS/2 adapter cable included) |

Mechanical

| | |
|---------------------------------|---|
| Overall dimensions | 17.42 × 1.75 × 21.65 in. (44.24 × 4.45 × 55.00 cm) |
| Weight | 15.5 kg (34.2 lb) |
| LCD monitor folding angle | Up to 110° |
| Drawer extension length..... | 17.00 in. (43.18 cm) |
| Drawer protection | Thumb screws (in) and self-locking rails (out) |

Environmental

| | |
|--------------------------|--------------------------|
| Maximum altitude..... | 2,000 m |
| Ambient temperature | |
| Operating | 0 to 50 °C |
| Storage..... | -20 to 60 °C |
| Relative humidity | |
| Operating | 10 to 90%, noncondensing |
| Storage..... | 5 to 95%, noncondensing |
| Operating location | Indoor use only |
| Pollution degree..... | 2 |

Safety and Compliance

Safety

This product is designed to meet the requirements of the following standards of safety for information technology equipment:

- IEC 60950-1, EN 60950-1
- UL 60950-1, CSA 60950-1



Note For UL and other safety certifications, refer to the product label or visit ni.com/certification, search by model number or product line, and click the appropriate link in the **Certification** column.

Electromagnetic Compatibility

This product is designed to meet the requirements of the following standards of EMC for electrical equipment for measurement, control, and laboratory use:

- EN 55024, CISPR 24
- EN 55022, CISPR 22
- CE, C-Tick, ICES, and FCC Part 15 Emissions; Class A



Note For EMC compliance, operate this device according to product documentation.

CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

- 73/23/EEC; Low-Voltage Directive (safety)
- 89/336/EEC; Electromagnetic Compatibility Directive (EMC)



Note Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

Waste Electrical and Electronic Equipment (WEEE)



EU Customers At the end of their life cycle, all products must be sent to a WEEE recycling center. For more information about WEEE recycling centers and National Instruments WEEE initiatives, visit ni.com/environment/weee.htm.

Where to Go for Support

The National Instruments Web site is your complete resource for technical support. At ni.com/support you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

National Instruments corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504. National Instruments also has offices located around the world to help address your support needs. For telephone support in the United States, create your service request at ni.com/support and follow the calling instructions or dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

Australia 1800 300 800, Austria 43 0 662 45 79 90 0,
Belgium 32 0 2 757 00 20, Brazil 55 11 3262 3599,
Canada 800 433 3488, China 86 21 6555 7838,
Czech Republic 420 224 235 774, Denmark 45 45 76 26 00,
Finland 385 0 9 725 725 11, France 33 0 1 48 14 24 24,
Germany 49 0 89 741 31 30, India 91 80 41190000,
Israel 972 0 3 6393737, Italy 39 02 413091, Japan 81 3 5472 2970,
Korea 82 02 3451 3400, Lebanon 961 0 1 33 28 28,
Malaysia 1800 887710, Mexico 01 800 010 0793,
Netherlands 31 0 348 433 466, New Zealand 0800 553 322,
Norway 47 0 66 90 76 60, Poland 48 22 3390150,
Portugal 351 210 311 210, Russia 7 495 783 68 51,
Singapore 1800 226 5886, Slovenia 386 3 425 42 00,
South Africa 27 0 11 805 8197, Spain 34 91 640 0085,
Sweden 46 0 8 587 895 00, Switzerland 41 56 200 51 51,
Taiwan 886 02 2377 2222, Thailand 662 278 6777,
United Kingdom 44 0 1635 523545

Compliance with FCC/Canada Radio Frequency Interference Regulations

Determining FCC Class

The Federal Communications Commission (FCC) has rules to protect wireless communications from interference. The FCC places digital electronics into two classes. These classes are known as Class A (for use in industrial-commercial locations only) or Class B (for use in residential or commercial locations). All National Instruments (NI) products are FCC Class A products.

Depending on where it is operated, this Class A product could be subject to restrictions in the FCC rules. (In Canada, the Department of Communications (DOC), of Industry Canada, regulates wireless interference in much the same way.) Digital electronics emit weak signals during normal operation that can affect radio, television, or other wireless products.

All Class A products display a simple warning statement of one paragraph in length regarding interference and undesired operation. The FCC rules have restrictions regarding the locations where FCC Class A products can be operated.

Consult the FCC Web site at www.fcc.gov for more information.

FCC/DOC Warnings

This equipment generates and uses radio frequency energy and, if not installed and used in strict accordance with the instructions in this manual and the CE marking Declaration of Conformity¹, may cause interference to radio and television reception. Classification requirements are the same for the Federal Communications Commission (FCC) and the Canadian Department of Communications (DOC).

Changes or modifications not expressly approved by NI could void the user's authority to operate the equipment under the FCC Rules.

¹ The CE marking Declaration of Conformity contains important supplementary information and instructions for the user or installer.

Class A

Federal Communications Commission

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user is required to correct the interference at their own expense.

Canadian Department of Communications

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Compliance with EU Directives

Users in the European Union (EU) should refer to the Declaration of Conformity (DoC) for information¹ pertaining to the CE marking. Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

¹ The CE marking Declaration of Conformity contains important supplementary information and instructions for the user or installer.

Important Information

Warranty

The MKD-1117 is warranted against defects in materials and workmanship for a period of one year from the date of shipment, as evidenced by receipts or other documentation. National Instruments will, at its option, repair or replace equipment that proves to be defective during the warranty period. This warranty includes parts and labor.

The media on which you receive National Instruments software are warranted not to fail to execute programming instructions, due to defects in materials and workmanship, for a period of 90 days from date of shipment, as evidenced by receipts or other documentation. National Instruments will, at its option, repair or replace software media that do not execute programming instructions if National Instruments receives notice of such defects during the warranty period. National Instruments does not warrant that the operation of the software shall be uninterrupted or error free.

A Return Material Authorization (RMA) number must be obtained from the factory and clearly marked on the outside of the package before any equipment will be accepted for warranty work. National Instruments will pay the shipping costs of returning to the owner parts which are covered by warranty.

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