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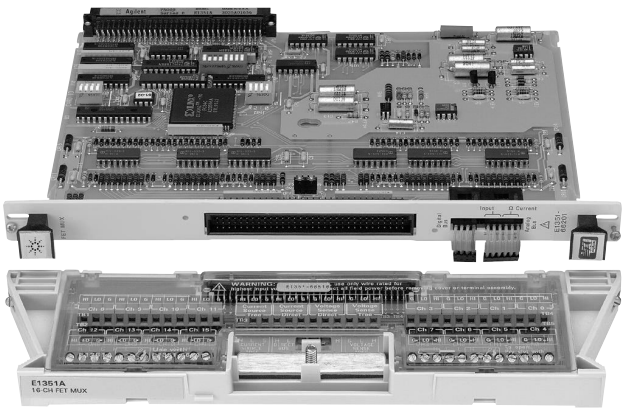
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Find the *Keysight / Agilent E1351A* at our website: ***Click HERE***

# Agilent E1351A
# 16-Channel FET Multiplexer
Data Sheet

- **1-Slot, B-size, register based**
- **Up to 13,000 channels/s scanning with Agilent's DMMs**
- **100,000 switches/second from downloaded scan list**
- **Voltage, current, and resistance measurements**
- **Space for signal conditioning components**




**Agilent E1351A**

Refer to the Agilent Technologies Website for instrument driver availability and downloading instructions, as well as for recent product updates, if applicable.

## Description

The Agilent E1351A FET Multiplexer is a **B-size, 1-slot, register-based VXI module** that switches 16 channels each of high, low, and guard. The FET multiplexer module consists of a B-size component card (labeled E1351-66201 on each one) and a screw terminal block that plugs onto the component card. The E1351A is functionally similar to the E1352A and E1353A.

An analog bus connector on the faceplate provides easy connection to an E1326B DMM, E1411B DMM, and/or other slot-adjacent multiplexers. Common high, low, and guard signals are connected by tree switch to both the tree terminals on the terminal card and the analog bus connector.

## Configuration

Common high, low, and guard signals are connected by tree switch to both the tree terminals on the terminal card and the analog bus connector.

A digital bus cable is shipped with each module, which attaches to a digital bus connector on the faceplates and is used to synchronize scanned measurements up to 13,000/second with either the E1326B DMM or E1411B DMM. Use of this bus requires the SCPI command TRIGger:SOURce DBUS. To connect an external DMM to the FET multiplexer for high-speed scanning synchronization up to 100,000 switches/second, order the digital FET MUX-to-DMM cable below.

One analog bus cable is shipped with each module, making it easy to connect multiplexer common outputs together for slot-adjacent modules. If you are using a B-size mainframe, E1300B or E1301B, use the analog bus cable shipped with the E1326A DMM to connect it to the multiplexer(s).

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## C-size Adapter

For installing the E1351A in a C-size mainframe, the E1403C active adapter is recommended.

## Product Specifications

### Input

**DC:**

| | |
|---|---|
| **Maximum voltage (any terminal to any other terminal or chassis):** | 16 Vpk |

**AC rms:**

| | |
|---|---|
| **Maximum voltage (any terminal to any other terminal or chassis):** | 16 Vpk |
| **Maximum current (per channel common, non-inductive):** | 1 mA |

### DC

| | |
|---|---|
| **Maximum thermal offset per channel, differential Hi-Lo:** | 25 µV (0 to 28 °C), 250 µV (28 to 55 °C) |
| **Closed channel resistance:** | <3.1 kΩ |
| **Insulation resistance (between any two points):** | 10E8 Ω, 10E3 Ω ± 10% guard to chassis |
| **Insulation resistance (Hi to Lo, power off):** | >1 kΩ for \|Vin\| <14 V, >220 Ω for \|Vin\|>14 V |

### AC

| | |
|---|---|
| **Minimum bandwidth (–3 dB, 50 Ω source/load):** | 500 kHz (1 MOhm \|\| 10 pF termination) |
| **Closed channel capacitance:** | <2000 pF Hi/Lo-Chassis, <200 pF Hi-Lo |

### General Characteristics

| | |
|---|---|
| **Relays:** | FETs<br>Break-before-make |
| **Power down state:** | FETs open on power down |
| **Power up state:** | FETs open on power up |
| **Minimum relay life:** | |
| **No load:** | Unlimited |
| **Rated load:** | Unlimited |
| **Reference junction measurement accuracy (18 to 28 °C operating):** | n/a |
| **Strain gage excitation:** | n/a |
| **Screw terminal wire size:** | 16 to 26 AWG (1.5, 1.2, 0.9, 0.75, 0.5 mm) |
| **Scanning rate:** | 13,000 channels/s typ. |

## General Specifications

### VXI Characteristics

| | |
|---|---|
| **VXI device type:** | Register based, A16, slave only |
| **Size:** | B |
| **Slots:** | 1 |
| **Connectors:** | P1 |
| **Shared memory:** | None |
| **VXI busses:** | None |
| **C-size compatibility:** | Requires E1403C |

### Instrument Drivers

***See the Agilent Technologies Website (http://www.agilent.com/find/inst_drivers) for driver availability and downloading.***

| | |
|---|---|
| **Command module firmware:** | Downloadable |
| **Command module firmware rev:** | A.03 |
| **I-SCPI Win 3.1:** | Yes |
| **I-SCPI Series 700:** | Yes |
| **C-SCPI LynxOS:** | Yes |
| **C-SCPI Series 700:** | Yes |
| **Panel Drivers:** | Yes |
| **VXI*plug&play* Win Framework:** | Yes |
| **VXI*plug&play* Win 95/NT Framework:** | Yes |
| **VXI*plug&play* HP-UX Framework:** | No |

### Module Current

| | $I_{PM}$ | $I_{DM}$ |
|---|---|---|
| **+5 V:** | 0.2 | 0.01 |
| **+12 V:** | 0.13 | 0.01 |
| **–12 V:** | 0 | 0 |
| **+24 V:** | 0 | 0 |
| **–24 V:** | 0 | 0 |
| **–5.2 V** | 0 | 0 |
| **–2 V:** | 0 | 0 |

### Cooling/Slot

| | |
|---|---|
| **Watts/slot:** | 1.00 |
| **∆P mm $H_2O$:** | 0.02 |
| **Air Flow liter/s:** | 0.10 |

## Ordering Information

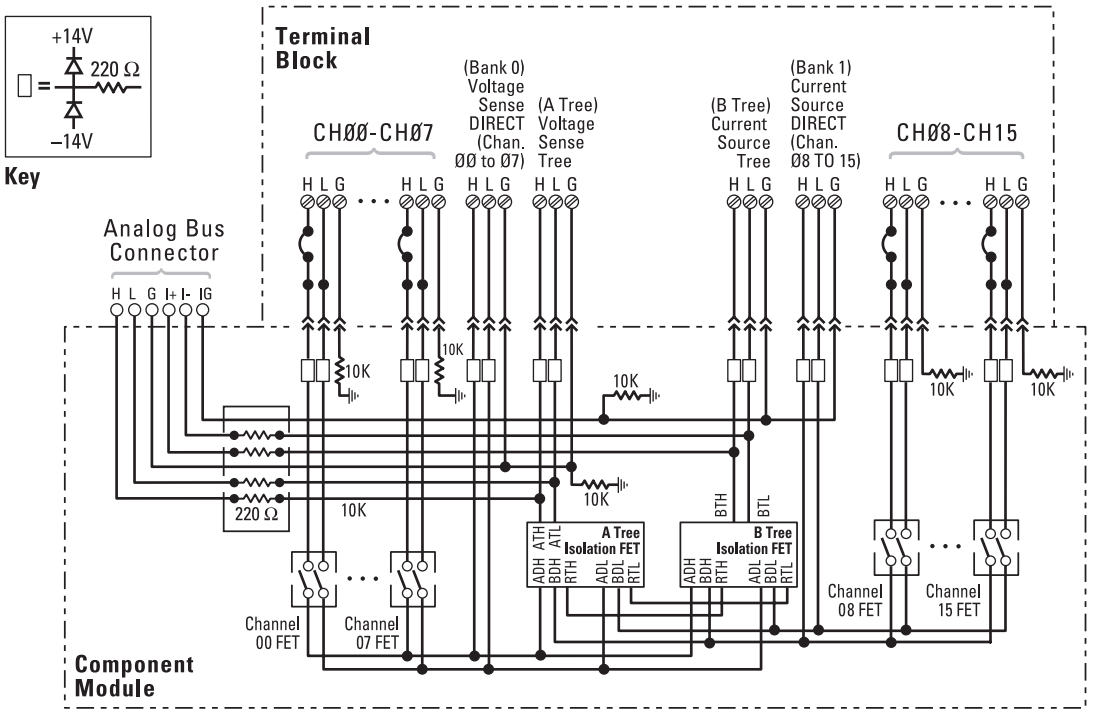
| Description | Product No. |
|---|---|
| 16-Channel FET Multiplexer | E1351A |
| Service Manual | E1351A 0B3 |
| 3 Yr. Retn. to Agilent to 1 Yr. OnSite Warr. | E1351A W01 |
| Terminal Card,16-Chan FET Multiplexer | E1351-80001 |
| Cable Kit, VM To B-Size FET Multiplexer | E1411-80001 |

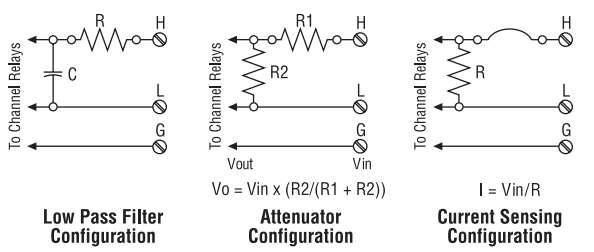


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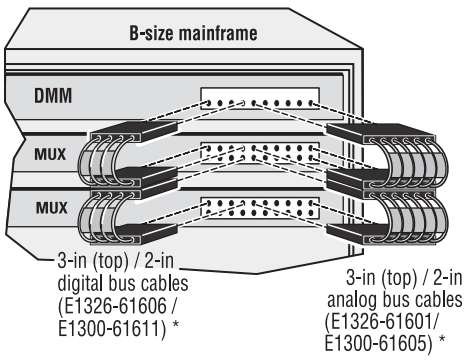
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## E1351A Circuit Diagram

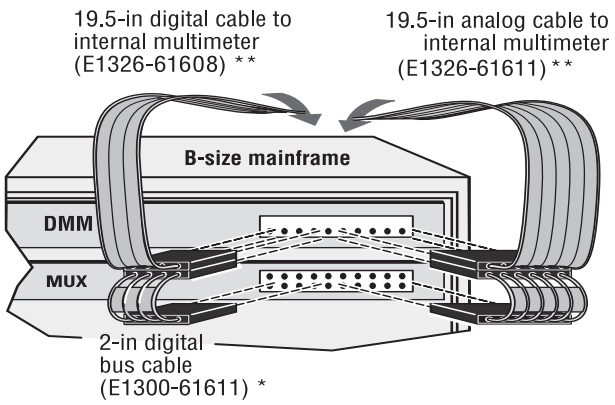



**Signal conditioning components and current shunt for E1351A/52A**




**Analog and Digital Bus Cables for MUX-to-MUX and MUX-to-Multimeter Connections**




* DMM-to-MUX and MUX-to-MUX analog and digital bus cables are provided with the purchase of the DMM and MUX modules, respectively.

** 19.5-in analog and digital bus cable is provided with the purchase of E1300/01B Series B mainframe with internal DMM option.

**Analog and Digital Bus Cables for MUX-to-MUX and MUX-to-Multimeter Connections**



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## Related Literature

*2000 Test System and VXI Catalog CD-ROM,*
Agilent Pub. No. 5980-0308E (detailed specifications for VXI products)

*2000 Test System and VXI Catalog,*
Agilent Pub. No. 5980-0307E (overview of VXI products )

*1998 Test System and VXI Products Data Book,*
Agilent Pub. No. 5966-2812E

## Online

Internet access for Agilent product information, services and support
*www.agilent.com/find/tmdir*

VXI product information
*www.agilent.com/find/vxi*

Defense Electronics Applications
www.agilent.com/find/defense_ATE

Agilent Technologies VXI Channel Partners
*www.agilent.com/find/vxichanpart*

Agilent Technologies' HP VEE Application Website
*www.agilent.com/find/vee*

Agilent Technologies Data Acquisition and Control Website
*www.agilent.com/find/data_acq*

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