Racal Instruments
http://www.racalinstruments.com

PRODUCT INFORMATION

Multi-Channel Variable Optical Attenuator Model 8455

- **0-50 dB Attenuation Range**
- **Low Insertion Loss of 2.0 dB max**
- **High Input Power of 2 W (33 dBm)**
- **Modular Commercial Off-the-Shelf (COTS) VXIbus Architecture**
- **Up to Eight Channels in a High-Density, Single-Slot VXI Footprint**
- **Monitor Outputs Options with 4-Channel 8455B**
- **Ideal for Dense WDM, Bit Error Rate, EDFA, and SONET Testing**

The model 8455 is a multi-channel Variable Optical Attenuator in a single slot VXIbus C-size module. This module brings the advantages of the modular VXIbus architecture to optical systems test. The compact modular design enables quick and easy removal and replacement for maximum system uptime.

The model 8455 optical attenuator modules provide highly-repeatable attenuation, facilitating the construction of precise optical test systems.

The modules are optically passive and operate independently of data rate, data format, and optical signal direction. They additionally provide message-based operation for ease of use.

The model 8455 is ideal for SONET test, active gain equalization in dense WDM systems, bit error rate (BER) testing, EDFA testing, and production testing of transmission systems.

There are three configurations available: The 8455A with four channels, the 8455B with four channels and monitor outputs, and the 8455C with eight channels. The -20 dB monitor outputs of the 8455B can be used during bit error measurements to monitor the power level at the receiver input.

The model 8455 includes drivers for LabWindows/CVI and LabView for VXI applications. It also includes VXI*plug&play* compliant support for WIN95/98/NT/2000 platforms.

MODEL 8455 SPECIFICATIONS

PERFORMANCE

Optical Fiber Type
9/125 micron, single-mode fiber
(Other fiber types available upon request)

Wavelength
Calibrated @ 1310/1550 nm
(Other wavelengths available upon request)

Wavelength Dependence
0.3 dB change from 1300 to 1550 nm
0.1 dB change from 1480 to 1570 nm

Attenuation Range
0 to 50 dB

Resolution
0.02 dB, 0 to 5 dB
0.08 dB, >5 to 20 dB
0.14 dB, >20 to 50 dB

Insertion Loss (See Note 2)
2.0 dB max;
1.5 dB max w/out connectors

Return Loss
40 dB min;
60 dB w/out connectors

Polarization Dependant Loss
+/-0.05 dB max @ 1550 nm;
+/-0.15 dB max @ 1310 nm

Repeatability (See Note 4)
+/- 0.05 dB, 0 to 10 dB
+/-0.10 dB, >10 to 20 dB
+/- 0.20 dB, >20 to 50 dB

Monitor Output
-20 dB typ

Adjusting Time
5 dB/s

Accuracy
+/- 0.3 dB max, 0-20 dB
+/- 0.5 dB max, >20-40 dB

Power Handling
2 W max (33 dBm max)

INTERFACE DATA

Cooling Requirements
Airflow: 0.8 liters/sec
Backpressure: 0.06 mm H_20

Power Requirements
Ipk: +5 VDC @ 2.0 A
Idm: +5V @ 28 mA

ENVIRONMENTAL DATA

Temperature
Operating: 0° C to 50° C
Storage: -40° C to 71° C

Relative Humidity
90% non-condensing to 40° C
for 5 days

Shock
30 g, 11 ms, 1/2 sinewave

Vibration
0.013 in.: pk-pk, 5-55 Hz sinewave

Bench Handling
4-inch drop @ 45°

EMC

EN61326:1997+A1:1998,CLASS A

Safety
EN61010-1:1993+A2:1995

RELIABILITY

MTBF
>138,247 hrs., min, Bellcore TR-332, Issue 6, ground benign

MECHANICAL

Weight
5.1 lbs.(2.31 kg)

Dimensions
Single-Slot, C-Size, VXIbus Module

Front Panel Interface Connector
FC Style, SPC
(Other style interface connectors available upon request)

Notes:

1. All specifications are referenced with connectors and measured at 23° C +/- 5° C, unless otherwise specified.
2. Connectors have typically less than 0.25 dB insertion loss and –40 dB back reflection.
3. Measured at 1550 nm. PDL typically less than 0.02 dB per mated connector pair.
4. 100 cycles measured at constant temperature after 1-hour warm-up.
5. Interface cables are not supplied with the module(s).

ORDERING INFORMATION

Model	Description	Part Number
8455A	SM Optical Attenuator 4-Channel Module	407725-001
8455B	SM Optical Attenuator 4-Channel Module, w/ Monitor Outputs	407725-002
8455C	SM Optical Attenuator 8-Channel Module	407725-003

CE The CE Mark indicates that the product has completed and passed rigorous testing in the area of RF Emissions, Immunity to Electromagnetic Disturbances and complies with European electrical safety standards.

The Racal Instruments policy is one of continuous development; consequently, the equipment may vary in detail from the description and specification in this publication.

Racal Instruments Inc., 4 Goodyear St., Irvine, CA 92618-2002. Tel: (800) RACAL-ATE, (800) 722 2528, (949) 859 8999; FAX: (949) 859 7139
Racal Instruments Ltd., 480 Bath Road, Slough, Berkshire, SL1 6BE, United Kingdom. Tel: +44 (0) 1628 604455; FAX: +44 (0) 1628 662017
Racal Instruments S.A., 18 Avenue Dutartre, 78150 LeChesnay, France. Tel: +33 (1) 3923 2222; FAX: +33 (1) 3923 2225
Racal Instruments Srl, Strada 2-Palazzo C4, 20090 Milanofiori Assago, Milan, Italy. Tel: +39 (0)2 5750 1796; FAX +39 (0)2 5750 1828
Racal Instruments GmbH, Technologiepark Bergisch Gladbach, Friedrich-Ebert-Strasse, D-51429 Bergisch Gladbach, Germany. Tel: +49 2204 8442 00; FAX: +49 2204 8442 19
Racal Australia Pty Ltd., 3 Powells Road, Brookvale, NSW 2100, Australia. Tel: +612 9936 7000; FAX: +612 9936 7036

L2009