

491/R491  
MOD WA

This manual insert describes the special features of MOD WA as it applies to the Tektronix Type 491/R491 Spectrum Analyzers. The tuning range of Band A has been changed from 10-275 MHz to 0-260 MHz, and the input coupling-time-constant increased to minimize attenuation of signal inputs down to 100 kHz. The band B scale has been extended to 260 MHz to provide coverage of the spectrum. Four holes have been added to the front-panel overlay with added and relocated panel markings.

### CHARACTERISTICS

**LOW-FREQUENCY OPERATION.** The band A mixer balance has been adjusted to minimize the amplitude of the local oscillator fundamental feed-thru ("0" frequency marker) and associated IF desensitization below 2 MHz. As a result, a spurious response appears at approximately 37.5 MHz, with an amplitude up to 20 dB above baseline noise level. This marker may be reduced at the expense of low-frequency operation by readjustment of the Band A mixer balance.

**SENSITIVITY.** Standard Band A sensitivity requirements (-100 dBm at 1 kHz resolution) are met from 260 MHz to 0.1 MHz with mixer balance optimized for low-frequency operation.

**PANEL PUNCHING.** Only the front-panel overlay is affected by MOD WA. The sub-panel integrity and EMI characteristics of the instrument are not affected.

### CALIBRATION

Calibrate the instrument according to Section 6 in the Type 491/R491 instruction manual except as follows:

#### NOTE

BAND A RANGE SHIFTED TO 0-200 MHz and  
BAND B SCALE EXTENDED TO 260 MHz.

1. Adjust B and A mixer balance controls for minimum "0" frequency feed-thru, when dial reads "zero" RF center frequency. When this is done, a "spur" will appear at 37.5 MHz (up to 20 dB above noise).
2. Check Band A dial tracking and adjust Band A inductance, Band A trimmer, and drive shaft coupling as necessary.

### INSTRUMENT OPTIONS

Option 2 (1.5 - 40 GHz coverage -- Band C only) is not available when Mod WA is specified. Option 1 (Band C deleted) may be specified as for standard instruments.

#### PARTS LISTS

##### Electrical

#### CHANGE:

C10	283-0167-00	1	CAP., FXD, CER, DIELECTRIC: 0.1 uF, $\pm 10\%$ , 100 V
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##### Mechanical

#### CHANGE:

034-0640-00	1	FRONT PANEL, film #7712-1
034-0651-00	1	DIAL TAPE, film #7804-2
037-3017-00	1	OSCILLATOR SUB-ASSEMBLY, RF BAND A & B

### SERVICE SUPPORT INFORMATION

The front panel for MOD WA was modified, per the customer's request, to add four new front panel controls. The new controls and associated circuits are installed by the customer. These controls and circuits are not supported by Tektronix.