## MODE|EIEE RROEUCTES



## Tektronix

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COMNTTTED TO EXCELLENCE

## GENERAL

Many of the modified products listed in this document have added performance features. However, they may require the compromise or degradation of certain standard product features. To avoid dissatisfied customers, make sure that the customer is fully aware of the limitations and capabilities of any modified product being considered. Specification Control Drawings that detail differences between standard product characteristics and those of the modified item are available from Modified Products and are in a form that can, and should, be given to the customer. Most of the mods listed in this document will have a record in the fiche for quick reference.

As with all modified products, it is the salesmans responsibility to convey the terms and conditions regarding the sale of these modifications. The standard terms and conditions regarding cancellation and/or rescheduling of modified products are detailed on Attachment T2 which must accompany any quotation to the customer for a modified product.

## GUIDELINES

1. Do not assume combined mod compatibility.

While some of these mods are mutually compatible, others are not. Contact Modified Products regarding questions on compatibility of mods.
2. Do not quote "040-type field mod kits" for the mods listed. Some of
these mods are not feasible to attempt as field kits. Contact Ken Hedin ext. 5673 for information and quotes for field kits or special parts used in modified products.
3. Get a quote.

All custom modifications need to have valid Modified Product Quotes (MPQ) referenced on the order. Most MPQs are valid for 30 days and are only valid for the instrument type quoted (with options) and the quantity quoted. All variances between the MPQ as issued and the resulting order need to be resolved between Modified Products and the field office (CSR or salesman). For further information, or to request a quote, contact Dick Taylor, ext. 5522, Del. Sta. 58-134.

## 200 SERIES MODIFICATIONS

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & \quad O N \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { MOD } \\ & \text { PRICE } \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Mod 125M | DC power input and mode selector switch permitting operation from AC or internal batteries (Normal Mode) or from 12 V external DC, and charging of internal batteries from an external 12 VDC source. | 212 | \$ 95 |
| Mod 126P | Ext Z-Axis Input AC-coupled via a Winchester SM 3SM connector at the rear. | $\begin{aligned} & 212 \\ & 214 \end{aligned}$ | 60 |
| Mod 1610 | $A C$ input capacitors changed for operation from 230 V (nominal) 60 Hz power lines. Accommodation range is 215 to 250 V RMS. | $\begin{aligned} & 212 \\ & 214 \end{aligned}$ | 50 |
| Mod 198G | $10 \times$ slower sweeps; 50 microsec/div to. $5 \mathrm{sec} / \mathrm{div}$. | 214 | 125 |
| Mod 717M | Probe length increased from 42" to 66" | $\begin{aligned} & 212 \\ & 213 \\ & 214 \end{aligned}$ | 35 |

## 400 SERIES MODIFICATIONS

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & 0 \mathrm{~N} \\ & \hline \end{aligned}$ | MOD PRICE |
| :---: | :---: | :---: | :---: |
| Mod 128T | X2.5 Vertical Magnifier in each channel. Magnification is selected by pulling out the Variable Volts/Div knob. Bandwidth is reduced to approximately 70 MHz with the Magnifier enabled. | 465 | \$ 125 |
| Mod 135L | B Sweep VARIABLE TIME/DIV control on rear panel; operates front-panel "UNCAL" indicator light. | $\begin{aligned} & 465 \\ & 466 \end{aligned}$ | 50 |
| Mod 157T | A Sweep Sawtooth output in lieu of B Sweep Gate output. Amplitude is approximately 1 V per division. | $\begin{array}{ll} \text { ep } & 464 \\ 465 \\ & 466 \end{array}$ | 75 |
| Mod 178F | Vertical Chop Rate changed to 1 MHz . | $\begin{aligned} & 464 \\ & 465 \\ & 466 \end{aligned}$ | 65 |
| Mod 721 U | Remote SS Reset \& Remote or End-of-Sweep flash graticule, TTL-compatible. | 485 | 500 |
| NOTE: | Rackmount adapters for the 464 and 466 are through Modified Products. Contact Ken He 5673) for price and availability. These a available only as a modified part and will by instrument manufacturing. | re availab Hedin (Ext adapters 11 not be | stalled |

## 600 SERIES MODIFICATIONS

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & O N \end{aligned}$ | MOD PRICE |
| :---: | :---: | :---: | :---: |
| Mod DB | Illuminated external graticule. $8 \times 10$ div ruling. Front panel scale illum. control. (Not compatible with time base option.) | 603 | \$ 125 |
| Mod DF | "Gamma Correction." Equipped with a nonlinear Z-axis amplifier to provide first order gamma correction for low intensity levels. | 606 | 50 |
| Mod DG | "Blanking Input." Analog -Z input changed to "Blanking" logic input. A logic low ( 0 to +0.8 V ) provides normal $Z$ axis operation (beam on), and a logic high ( +3 to +5.5 V ) disables the $+z$ input and INTENSITY control (beam off). May be driven by most logic families (RTL, DTL, TTL, MOS, CMOS, etc.). | 606 | 75 |
| Mod EA | Added securing and ECB sealing to provide extended storage temperature, humidity, vibration and shock ratings. | $\begin{aligned} & 63 \\ & 604 \end{aligned}$ | 100 |
|  | $\begin{aligned} & \text { Temperature (Non-op): }-62^{\circ} \text { to }+75^{\circ} \mathrm{C} \text {. } \\ & \text { Humidity: To } 95 \%, 30^{\circ} \text { to } 60^{\circ} \mathrm{C}, 120 \mathrm{hr} \text {. } \\ & \text { Vibration: } .06^{\prime \prime} \mathrm{p}-\mathrm{p} \text { © } 5 \mathrm{~Hz} \mathrm{to} .006^{\prime \prime} \mathrm{p}-\mathrm{p} \\ & \text { Shock: } 30 \mathrm{~g} \times 11 \mathrm{~Hz}(0.7 \mathrm{gs} \text { hal max). } \end{aligned}$ |  |  |
| Mod FD | Voltage programmable PERSISTENCE via rear panel REMOTE PROGRAM connector. Added rear panel selector switch for front-panel/ remote persistence. | 607 | 160 |

600 Series Modifications - cont'd
AVAILABLE ..... MODONPRICE
Mod 133C EXT TRIG INPUT added to J200. INT/EXT ..... 603 ..... \$ 50
SOURCE switch added to rear panel. ..... 604
(Instruments with Time base options).
Mod 152E Type number and identification moved from ..... 603
the front panel and access door to the ..... 604 ..... 60450
rear panel. ..... 606607
Mod 818B $X, Y$ and $Z$ inverting inputs added to ..... 603 ..... 604607


## 5100 SERIES MODS

## Input Connectors, Parallel Rear Panel:

1. Adds 75 to 100 pf to plug-in input $C$.
2. Eliminates use of passive attenuator probes ( X 1 may be OK).
3. Rating is 400 volts $D C$ or $p-p$ AC.
4. Requires compatibly modified plug-ins.
A. INSTRUMENT MODIFICATIONS:

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & O N \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { MOD } \\ & \text { PRICE } \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Mod 817A | One input per compartment, BNC | 5110 | \$ 85 |
|  | $(1+1+1), 3$ coax cables from rear | 5111 |  |
|  | panel to plug in interface connec- | 5112 |  |
|  | tors. (see 817G plug-in mods). | 5113 |  |
|  |  | 5115 |  |
| Mod 817B | Two inputs per compartment, BNC | 5110 | 125 |
|  | $(2+2+2), 6$ coax cables from rear | 5111 |  |
|  | panel to plug-in interface connec- | 5112 |  |
|  | tors (see 817H plug-in mods). | 5113 |  |
|  |  | 5115 |  |
| Mod 817C | Differential to each Vertical compart- | 5110 | 175 |
|  | ment and BNC to Horizontal compartment; | 5111 |  |
|  | 4-pin Bendix via twisted cable from | 5112 |  |
|  | rear panel to each Vertical plug-in | 5113 |  |
|  | interface connector. For use with | 5115 |  |
|  | 50 micro V/Div to 50 V/Div differential plug-ins. (see 5A21N, Mod 817H) |  |  |
| Mod 817M | Four inputs per Vertical and one input | 5110 | 195 |
|  | to the Horizontal compartments, BNC | 5111 |  |
|  | $(4+4+1) ; 9$ coax cables from rear panel | 5112 |  |
|  | to plug-in interface connectors. (see | 5113 |  |
|  | 817N plug-in mods). | 5115 |  |

5100 Series Mods - cont'd

## Input Connectors, Parallel Rear Panel:

B. PLUG-IN MODIFICATIONS:

Mod 817G All having a single signal or trigger input.

| AVAILABLE ON | $\begin{aligned} & \text { MOD } \\ & \text { PRICE } \end{aligned}$ |
| :---: | :---: |
| 5A15N | \$ 35 |
| 5A23N |  |
| 5A24N* |  |
| 5B10N |  |
| 5B12N |  |
| 5B13N |  |

Mod 817H $\begin{aligned} & \text { Having two inputs at } 1 \mathrm{mv} / \text { Div or lower } \\ & \text { sensitivity. For use in Vertical com- }\end{aligned}$
5A18N
50 partment of Mod 817 B or 817 M Indicators

Mod 817H Having differential inputs. Requires
5A21N Mod 817C mainframe. 5A19N 817H can be used in Mod 817B mainframes.

Mod 817N Having four inputs, which can be used
5A14N
50 in each Vertical compartment, for up to 8-trace operation. Requires Mod 817M Indicators.

NOTE: Modified mainframes will accept either standard or modified plug-ins. Modified plug-ins are keyed for insertion into modified mainframes only. THESE MODIFIED PLUG-INS ARE NOT USEABLE IN 5400 SERIES MAINFRAMES.
*DC input only.

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## 5100 SERIES MODS

## Output Connectors, Rear Panel:

SPECS: These output buffer amplifiers provide $1 \mathrm{~V} /$ Div output (into $1 \mathrm{M} \Omega$ ) or $0.05 \mathrm{~V} / \mathrm{Div}$ (into $50 \Omega$ ). Deflection signals (Vert and Horiz) are available at interface via added square pins. Independent channels out of multi-channel plug-ins \& certain gate \& sawtooth signals are available only with modified plug-ins.

## A. INSTRUMENT MODIFICATIONS:

| {f243f94d1-3166-41b4-a630-7043be115337} AVAILABLE  <br>  ON }$5110 / R$ | MOD <br> PRICE |
| :--- | :--- |
| $\$ 300$ |  |

Mod 719H Composite $X, Y$ and $Z$ axis outputs via 3 wideband buffer amplifiers suitable for driving a slave indicator. Vertical chopping rate reduced from $\simeq 100 \mathrm{kHz}$ to $\simeq 4 \mathrm{kHz}$ to be compatible with large screen monitor application (e.g. 613). Use with multi-channel amplifiers (5A18N, 5A14N) will provide multiplexed output.

Mod 768 T

Mod 768 U

Mod 768Y

Mod 768X
Six output amplifiers, BNC connectors, 6 signal output buffer amplifiers can be patched to any of the 15 signal sources 5112 available at interface or auxiliary boards.51135115

NOTE: Modified mainframes will accept either standard or modified plug-ins. Modified plug-ins are keyed for insertion into

5100 Series Mods - cont'd
Amplifier Outputs Only:
B. PLUG-IN MODIFICATIONS:

Unmodified plug-ins give outputs representative of the signals available at the interface. For signals available within the plug-ins only, see the following mods:

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & O N \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { MOD } \\ & \text { PRICE } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Mod 768V | Independent Channel 1 and 2 signal output via plug-in interface connector (dualtrace). | $\begin{aligned} & 5 \mathrm{~A} 18 \mathrm{~N} \\ & 5 \mathrm{~A} 26 \end{aligned}$ | S 75 |
| Mod 768W | A Gate and Sawtooth signal output via the plug-in interface connector. | $\begin{aligned} & 5 B 10 N \\ & 5 B 12 N \end{aligned}$ | 35 |
| Mod 7682 | A Gate and B Gate signal outputs via plug-in interface connector. | $\text { in } 5 B 12 N$ | 35 |
| Mod 769G | A, B Gates and Delayed Trigger Out. | 5B12N | 50 |
| Mod 769N | A Gate, B Gate, A Sawtooth, and B Sawtooth via the plug-in interface connector. | 5 B 12 N | 50 |
| Mod 769Q | $3.7 \mu \mathrm{~A} / \mathrm{Div}$ Signal Output w/o positioning or variable Volts/Div control effects, via plug-in interface connector. | $\begin{aligned} & 5 \mathrm{~A} 21 \mathrm{~N} \\ & 5 \mathrm{~A} 22 \mathrm{~N} \end{aligned}$ | 50 |
| NOTE: | Modified mainframes will accept either standard or modified plug-ins. Modified plug-ins are keyed for insertion into modified mainframes only. THESE MODIFIED PLUG-INS ARE NOT USEABLE IN 5400 SERIES MAINFRAMES. |  |  |

## 5100 SERIES MODS

## Graticule Modifications

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & \quad \mathrm{N} \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { MOD } \\ & \text { PRICE } \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Mod DA | External illuminated graticule; standard $8 \times 10$ pattern; rear panel SCALE ILLUM control. | $\begin{aligned} & 5111 \\ & 5113 \\ & 5115 \end{aligned}$ | \$ 125 |
| Mod 1722 | External, non-illuminated standard catalog pattern supplied on external, removable graticule. | $\begin{aligned} & 5110 \\ & 5111 \\ & 5112 \\ & 5113 \\ & 5115 \end{aligned}$ | \$ 50 |
| Mod 174T | Internal, non-illuminated, $10 \times 10 \mathrm{~cm}$ grid. | $\begin{aligned} & 5110 \\ & 5111 \\ & 5112 \\ & 5113 \end{aligned}$ | 50 |
| Mod 172F | Internal, illuminated, standard catalog pattern graticule. | $\begin{aligned} & 5110 \\ & 5112 \end{aligned}$ | 125 |
| Mod 172G | Internal, illuminated, $10 \times 10 \mathrm{~cm}$ grid. | $\begin{aligned} & 5110 \\ & 5112 \end{aligned}$ | 125 |
| NOTE: | Internal illuminated graticule not avail instruments in this product line. | le on sto |  |

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## 5100 SERIES MODS

## OTHER USEFUL MODIFICATIONS

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & O N \\ & \hline \end{aligned}$ | MOD PRICE |
| :---: | :---: | :---: | :---: |
| Mod 135B | Remote Erase, TTL or ground closure to | 5111 | \$ 125 |
|  | rear 25-pin Cinch DC 25S connector | 5113 |  |
|  | NOTE: This mod will provide for remote | 5115 |  |
|  | erase of upper, lower or both halves of the split screen as selected by the front panel pushbutton selector switches. |  |  |
| Mod 135J | Auto/Remote Erase, variable View Time/Save; | ; 5111 | 230 |
|  | sweep lockout, provision for X-Y operation, | , 5113 |  |
|  | Erase Interval Output, etc. | 5115 |  |
| Mod 710R | $X-Y$ operation, right Vertical compartment | 5110 | 95 |
|  | switchable from Vertical to Horizontal | 5111 |  |
|  | operation. For use with standard ampli- | 5112 |  |
|  | fier plug-ins. Requires 5B10N Mod 711C. | 5113 |  |
|  |  | 5115 |  |
| Mod 711C | $X-Y$ operation plus control of unblanking. | 5B10N | 50 |
|  | One switch position allows operation of |  |  |
|  | time base as unblanking generator. See |  |  |
|  | 5100 Series, Mod 710R. |  |  |
| Mod FB | Invert for each channel, with internal | 5A14N | 95 |
|  | switches. |  |  |

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## 5400 SERIES MODIFICATIONS

|  |  | $\underset{\substack{\text { AVAILABLE } \\ \text { ON } \\ \hline}}{ }$ | $\begin{aligned} & \text { MOD } \\ & \text { PRICE } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Mod HB | Two VERT SIG OUT facilities via Rear Panel BNCs. 0.5 V/Div Open Circuit or $25 \mathrm{mV} /$ Div into $50 \Omega$. Use with multichannel amplifiers is not recommended since output will contain chop or alternate switching transition as well as signal voltage. | $\begin{aligned} & 5440 / R \\ & 5441 / R \end{aligned}$ | \$ 175 |
| Mod HC | Five added rear-panel BNC connectors providing VERT SIG OUT and +GATE OUT. SAWTOOTH OUT signals are available when Mod HA Time Base is used in Horizontal compartment | $\begin{aligned} & \quad \begin{array}{l} 5440 / R \\ \\ \hline \text { HA } \\ \text { nt. } \end{array} \end{aligned}$ | 300 |
| Mod 1722 | External (removable) Illuminated Graticule. Standard $8 \times 10$ Div pattern. | $\text { e. } 5440 / R$ | 125 |
| Mod 816G | $2+2+2$ rear BNC 1/0 via 4-position coax holders at interface. | $\begin{aligned} & 5440 / R \\ & 5441 / R \end{aligned}$ | 175 |

5400 SERIES PLUG-IN MODIFICATIONS

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & O N \\ & \hline \end{aligned}$ | MOD <br> PRICE |
| :---: | :---: | :---: | :---: |
| Mrsd HA | Two Sawtootin out, $50 \mathrm{mV} / \mathrm{div}$ via Interface C3-C4. For use in 5440/5441, Mod HC | $\begin{aligned} & 5 B 42 \\ & 5 B 44 \end{aligned}$ | \$ 125 |
| Mod HC | One Sawtooth out, $50 \mathrm{mV} / \mathrm{div}$ via Interface C4. For use in 5440/5441, Mod HC. | 5B40 | 75 |
| Mod 816C | Ext Trig/Amplifier input paralleled to rear holder, position 1. | $\begin{aligned} & 5 B 40 \\ & 5 B 42 \end{aligned}$ | 50 |
| Mod 816H | 2 front panel inputs paralleled to rear connector holder, positions 1 and 2. | 5A38 | 50 |
| Mod 818H | Rear inputs, internal switch for front/ rear selection. | 5A48 | 125 |
| Mod 818J | Rear input via connector holder, internal front-rear selector switch, as 5A48 Mod 818H. | 5A45 | 75 |
| Mod FC | Provides scale factor readout when used with the 5400 Series readout equipped oscilloscopes. Not compatible with 5100 Series input/output modifications. | $\begin{aligned} & \text { 5A21N } \\ & 5 A 22 N \end{aligned}$ | 75 |



## 7000 SERIES MODIFICATIONS

|  |  | AVAILABLE ON | MOD PRICE |
| :---: | :---: | :---: | :---: |
| Mod DB | External (removable) illuminated graticule with standard $8 \times 10$ div pattern. | $\begin{aligned} & 7844 / R \\ & \text { R7903 } \end{aligned}$ | \$ 200 |
| Mod UB | Delete readout, add passive board for terminations, etc. FP controls retained, similar to Option in other 7000-series. | 7844 | -300 |
| Mod 129G | Second Calibrator circuit with front-panel output connectors and controls. Provides close tolerance time ( $1 \mu \mathrm{sec}$ and 1 ms within $0.05 \%, 0$ to $50^{\circ} \mathrm{C}$ ) and amplitude (with in $0.5 \%$ for 60 mV into an open circuit and 30 mV into 50 ohms, 0 to $50^{\circ} \mathrm{C}$ ) with risetime of $<1 \mathrm{~ns}(10$ to $90 \%$ ) into $50 \Omega, 0$ to | 7704A <br> $0^{\circ} \mathrm{C}$. | 325 |
| Mod 172W | External illuminated graticule | 7313/R | 125 |
| Mod 1722 | External illuminated graticule | $\begin{aligned} & 7603 / R \\ & 7613 / R \\ & 7623 \mathrm{~A} / \mathrm{R} \\ & 7633 / R \end{aligned}$ |  |
| Mod 178G | Repetition rate of Chop Mode clock generator increased from 2 MHz to approximately 8 MHz , for 2 MHz multi-trace channel repetition rates. When used with 7A26, the 7A26 must have Modification 178G, also. | $\begin{aligned} & 7623 A / R \\ & 7633 / R \\ & 7844 \\ & \text { R7903 } \\ & 7904 \end{aligned}$ | 75 |
| Mod 302P | Readout circuits deleted; rear-panel PROBE POWER connectors retained. |  | -300 |

Mod 721K Independently triggerable pulsed
AVAILABLE
MOD
ON PRICE graticule illumination ( $1 / \overline{\mathrm{sec}}$ ) and modified single-shot readout, with mode, manual trigger, and preset level controls at the front panel. An end-of-sweep trigger output is also provided, for after-single-sweep triggering of the graticule and readout. Similar to but not exactly the same as Option 10 on the R7903 listed in the general catalog.

Mod 769W Two Vertical Signals Out, DC-100 MHz, 7844/R 300 $25 \mathrm{mV} / \mathrm{div}$ into 50 ohms.
$\left.\begin{array}{llll}\text { Mod 816G } & \begin{array}{l}\text { Six added rear-panel BNC connectors, } \\ \text { with two coaxial input-output lines to } \\ \text { each of the three plug-in compartments, } \\ \text { use with compatibly-modified 7-series } \\ \text { plug-in units. }\end{array} & \begin{array}{c}\text { R7603 } \\ \text { R7613 }\end{array} & 125 \\ \text { M7623A } \\ \text { R7633 }\end{array}\right]$

## 7000 SERIES

## PLUG-IN MODIFICATIONS

|  |  | $\begin{aligned} & \text { AVAILABLE } \\ & 0 \mathrm{~N} \\ & \hline \end{aligned}$ | MOD PRICE |
| :---: | :---: | :---: | :---: |
| Mod FB | Gated $X-Y$ mode providing timed unblank- | 7B53A | \$ 150 |
|  | ing triggerable from the external deflec- |  |  |
|  | tion signal. Useful for single-shot |  |  |
|  | applications requiring $X-Y$ displays with |  |  |
|  | storage mainframes. Not available with |  |  |
| Mod GB | Preamp gain increased to provide a fastest | 7880 | 250 |
|  | Sweep rate of $5 \mathrm{~ns} / \mathrm{Div}^{\text {c }}$ ( $0.5 \mathrm{~ns} /$ Div with |  |  |
|  | MAG). Sweep rates slower than 10 us/Div |  |  |
|  | and HOLDOFF control are deleted. Provides 20 divisions of sweep length unmagnified. |  |  |
|  | Not available with Option 2 ( $X-Y$ operation). |  |  |
| Mod JB | Two rear inputs via interface $\mathrm{Cl}, \mathrm{C} 2$, | 7A24 | 12 |
|  | selectable by internal cable patch. |  |  |
| Mod 115X | Added DC Offset circuit providing up to | 7A15A | 125 |
|  | $\pm 200$ div ( 2000 div with MAG X10) baseline |  |  |
|  | offset within the input dynamic range, with uncalibrated COARSE and FINE front-panel |  |  |
|  | uncalibrated COARSE and FINE front-panel variable controls. |  |  |
| Mod 178G |  | 7 A 24 | 25 |
|  | rate in 7000 -series Mod 1786 mainframes. | 7A26 |  |
| Mod 816B | Coaxial input line via the interface connec- | c-7A15A | 50 |
|  | tor wired in parallel with the front-panel |  |  |
|  | INPUT connector. |  |  |

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7000 Series Plug-In Modifications - cont'd

Mod 816H Coaxial line via the interface connector wired in parallel with each front-panel INPUT connector.
Mod 816J MAIN TRIGGER IN \& DLY'D TRIGGER IN connec- 7B53A 75 tors parallel to interface connector Cl and C2.

# TM500 MODIFICATIONS 

| DC505A Mod GA | Faster display-rate and scan-clock rates to allow Period and Width measurements at up to 500 measurements/second. | \$ 95 |
| :---: | :---: | :---: |
| DD501 Mod JA | FP input connector disconnected. Input via rear interface. For use with TG501 Mod JA and TM506 Mod JA. | 25 |
| DM501 Mod 7180 | 200 mV range; temperature feature deleted. | 25 |
| PS051-1 Mod 730E | +5 V supply deleted; connector, BAL, CAL facilities for strain-gage-type transducers. | 100 |
| PS501-1 Mod 73uF | Special connectors and controls for service as Rotation Function Generator power supply and interconnect adapter. | 125 |
| RG501 Mod 198F | All timing ranges increased X 10 for $100 \mu \mathrm{~s}$ to 100 s duration. | 125 |
| SG502 Mod 135W | Added FINE FREQUENCY control on front panel. | 95 |
| SG503 Mod 719X | "FM" input, $620 \Omega$, DC coupled, 500 kHz to 250 MHz bands only. Deviations from $\pm 1 \mathrm{kHz}$ at 2.5 MHz to $\pm 600 \mathrm{kHz}$ at 250 MHz may be obtained. | 125 |
| TG501 Mod HB | TRIG DIVIDED BY 10/DIVIDED BY 100 (frequency) output via added front panel BNC. Internal Divided by $10 /$ Divided by 100 selector. | 100 |
| TG501 Mod JA | 10 MHz clock output via rear interface pins. For use with DD501 Mod JA and TM506 Mod JA. | 30 |
| TM506/R Mod AA | Cooling fan changed to $48-440 \mathrm{~Hz}$ type to allow 400 Hz operation. | 150 |
| TM506 Mod JA | Coaxial interconnect added between J10 (B27-B28) and J 20 (B24-B25) for use with DD501 Mod JA and TG501 Mod JA. Barrier keys added in compartments 1 and 2. | 35 |

## PHOTOMETER MODIFICATIONS

|  |  | $\begin{gathered} \text { AVAILABLE } \\ \mathrm{ON} \\ \hline \end{gathered}$ | $\begin{aligned} & \text { MOD } \\ & \text { PRICE } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| Mod 186A | Filter for $450 \pm 25 \mathrm{nM}$ response; sensitivity reduced X 100 ; cosine corrected. | J6512 | 25 |
| Mod 717A | Added 25-pin connector on cabinet top providing Digital logic and BCD readout outputs, a "hold" input and an analog signal output. | J16 | 85 |
| Mod 7170 | ND2 Filter added to reduce sensitivity by a factor of 100. Readout decimal location shifted for correct readout. | $\begin{aligned} & J 6501 \\ & J 6502 \\ & J 6511 \\ & \\ & \hline 6512 \end{aligned}$ | 75 |
| 719V | ND2 Filter (Mod 717Q); cable shortened to $6^{\prime}$. | J6511 | 75 |
|  | FDI PRODUCTS MODIFICATIONS |  |  |
| Mod FA | Added DOT POS control providing a movable frequency-measurement point when using the TR502 Tracking Generator. | $\mathrm{e}^{7 \mathrm{~L} 13}$ | 195 |
| Mod GB | Cable dielectric pushbuttons and VAR control replaced by two rotary switches providing cable Vp factor of 0.2 to 1.0 in 0.01 increments. | 1503 | 225 |
| Mod GC | Added down-converter with switching facilities for three-range use: $0-5 \mathrm{MHz}$, 8-13 MHz, and 19-24 MHz. | L1 | 800 |
| Mod 1397 | COARSE tuning range changed from 0-1800 MHz to $0-180 \mathrm{MHz}$. An internal switch restores normal range. | 7112 | 75 |
| Mod 139 U | Input filter deleted; tuning range and Max | $\begin{array}{r} 7 \mathrm{~L} 12 \\ \times \quad 7 \mathrm{~L} 13 \end{array}$ | 275 350 |

## CURVE TRACERS MODIFICATIONS

AVAILABLE ..... MOD
ON ..... PRICE
Mod DA Illuminated external graticule with rear 577/D1 ..... $\$ 125$panel SCALE ILLUM control. Std. $8 \times 10$div graticule or Option $10(10 \times 10 \mathrm{~cm})$graticule is available.
Mod 172G Internal illuminated graticule. $10 \times 10$ ..... 577/D2 ..... 125cm pattern.
SCOPEMOBILE MODIFICATIONS
Mod BD Added housing for storage of up to four Model 3 ..... \$ 757 -series plug-in units. 5 -series andTM500 series units may be stored in thehousing, but no positive latching facilitiesare provided for them.

| INST. | MOD | PRICE | DESCRIPTION |
| :---: | :---: | :---: | :---: |
| $\begin{aligned} & 5111 A / R \\ & 5113 / R \end{aligned}$ | 135J | \$295 | AUTO ERASE WITH VARIABLE VIEW TIME AND SAVE. REAR REMOTE CON ADDED. |
| $5110 / R$ | 172 F | \$250 | INTERNAL ILLUMINATED STD PATTERN GRATICULE |
| $5110 / R$ | 172 Z | \$100 | EXTERNAL GRATICULE-NOT ILLUM. |
| $5110 / R$ | 709 V | \$400 | BENTLEY NEVADA MOD. INT ILLUM GRAT; XY/YT SWITCHING; AC COUPLED $Z$ AXIS; BENTLEY LOGD DN FRONT PANEL |
| $51 \times \times / R$ | 710 F | \$150 | XY/YT SWITCHING OF CENTER COMFARTMENT SIG VIA ADDED SWITCH ON 5BION |
| $51 \times \mathrm{R} / \mathrm{R}$ | 768 T | \$275 | 3 SIGNAL DUTPUT BUFFERS TO REAR BNC'S. |
| $51 \times \mathrm{R} / \mathrm{R}$ | 768X | \$395 | 6 SIGNAL OUTPUT BUFFERS TO REAR BNC'S. |
| $51 \times \times / R$ | 817A | \$200 | 3 REAR BNC FOR SIG INFUT |
| $51 \times \times / \mathrm{R}$ | 817E | \$250 | 6 REAR BNC FOR SIG INPUT |
| $51 \times \mathrm{F} / \mathrm{F}$ | 817 C | \$325 | 2 DIFFERENTIAL AND 1 SINGLE ENDED REAR INFUTS. |
| 51XX/R | 817M | \$300 | 9 REAR ENC FOR SIG INPT. $4+4+1$ |
| $\begin{aligned} & 511 \mathrm{~A} / \mathrm{R} \\ & 5113 / R \end{aligned}$ | DA | \$200 | EXT. ILLUM. GRAT. STD. PATTERN |
| $5110 / R$ | WP | \$75 | 5000 HR ELAPSED TIME INDICATOR |
| $5110 / R$ | 434A | \$400 | $172 \mathrm{~F}+710 \mathrm{~F}$ |
| $\begin{aligned} & 5111 \mathrm{~A} / \mathrm{R} \\ & 5113 / R \end{aligned}$ | 450 F | \$595 | $135 J+817 M$ |
| $\begin{aligned} & 5111 \mathrm{~A} / \mathrm{R} \\ & 5113 / \mathrm{R} \end{aligned}$ | 450 J | \$690 | $135 J+768 x$ |
| $\begin{aligned} & 5111 \mathrm{~A} / \mathrm{F} \\ & 5113 / \mathrm{F} \end{aligned}$ | 450 X | \$495 | $135 J+817 A$ |
| $51 \times \times / R$ | 4502 | \$475 | $768 T+817 A$ |
| $\begin{aligned} & 5111 \mathrm{~A} / \mathrm{R} \\ & 5113 / R \end{aligned}$ | LG | \$375 | $D A+710 \mathrm{~F}$ |
| $5110 / R$ | LS | \$650 | $172 F+710 R+817 B$ |
| $\begin{aligned} & 5111 A / F \\ & 5113 / R \end{aligned}$ | LY | \$550 | $\mathrm{DA}+710 \mathrm{~F}+817 \mathrm{~B}$ |
| $5110 / \mathrm{R}$ | MA | \$675 | $172 F+710 \mathrm{~F}+768 \mathrm{~T}$ |
| $5110 / \mathrm{F}$ | WO | \$400 | $W F+817{ }^{\circ}$ |



| INST. | MOD | PRICE | DESCRIPTION |
| :---: | :---: | :---: | :---: |
| 5440/R | 816 G | \$195 | 6 REAR ENC'S FOR SIG. INPUT ( $2+2+2)$ |
| $5441 / R$ |  |  |  |
| 5440/R | HC | \$395 | 2 VERTICAL SIGNAL OUTPUTS; 1 GATE OUT; |
| 5441/R |  |  | 2 SAWTOQTH OUTPUTS (REQUIRES MODIFIED |
|  |  |  | TIMEBASE). |
| R5440 | WT | \$215 | IEC FOWER CON; DELETE CHASSIS TRACKS; |
|  |  |  | RM EARS PUNCHED FOR EIA STD. |
| 5440/R | ZA | \$100 | 96 HR EUPN-IN |



