

Shown above are the TM 515, TM 504, TM 506, RTM 506, TM 501 and TM 503 mainframes.

The TM 500/TM 5000 mainframes allow the multifunctionality of a package of instruments. Literally hundreds of combinations of instrumentation packages can be configured for specific tasks by using TM 500 plug-ins.

The TM 500 plug-in instruments operate in any of eight mainframes that accept instruments in combinations of up to six single-width plug-ins. One single-width plug-in instrument is accommodated by the TM 501. Up to six instruments can be accommodated in the TM 506 benchtop mainframe and the RTM 506 rackmount mainframe. Three and four-wide mainframes are also available and the five-wide Traveler Mainframe provides for applications that require instrument portability.

The TM 5000 mainframes extend the convenience of the TM 500 concept into the programmable instrument/IEEE Standard 488 area. The TM 5003 accepts up to three instruments at one time; the TM 5006 accepts up to six instruments at one time. These two TM 5000 mainframes were designed specifically for use with the Tektronix TM 5000 line of programmable, IEEE-488 compatible test and measurement instruments, but all of the TM 500 manual plug-in instruments will also operate in these same mainframes allowing manual and programmable instruments to be mounted together in adjacent slots. This capability permits unique compact combinations of test instruments to be assembled for specific test applications.

Any of the mainframes may be operated with less than a full complement of plug-in instruments installed. TM 5000 instruments cannot be operated in TM 500 mainframes.

Benchtop

The six benchtop mainframes are the TM 501, TM 503, TM 504, TM 506, TM 5003 and the TM 5006. The TM 503 and TM 5003 are the most compact of the multiple instrument units, each accommodating three single-wide plug-ins. The TM 504, TM 506, and the TM 5006 each include a high-power compartment at the right-hand end to supply higher current levels to instruments that provide higher performance or higher output levels. The TM 506, TM 5003 and TM 5006 incorporate a quiet fan for optimum cooling. All benchtop models have feet, tilt-bails, handles, and front-panel power switches. All operate from 110 V ac or 220 V ac.

Portability

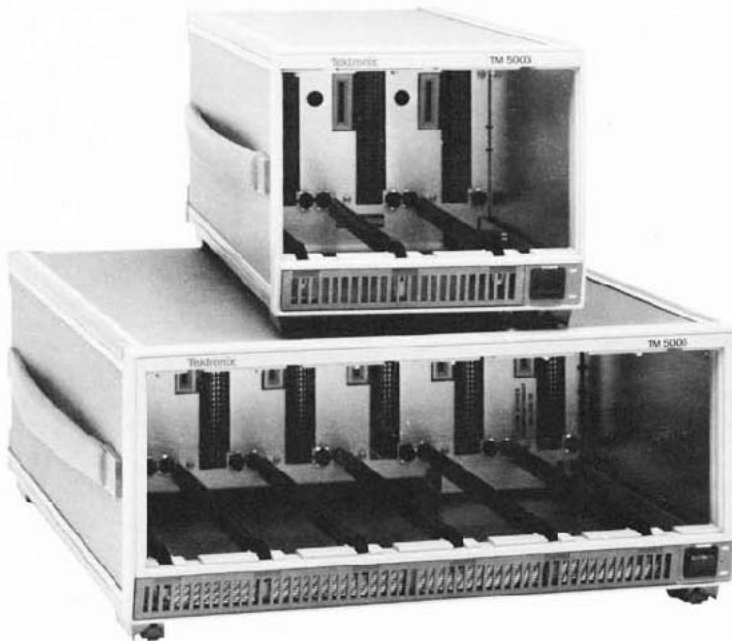
All benchtop models have carry handles for portable applications. TM 500 models further enhance portable applications with sturdy cord-wrap rear feet plus optional protective front covers. The TM 515 Traveler Mainframe, however, was designed for superior, multi-instrument portability. In its carrying configuration, it is a handsome piece of luggage with molded feet on the bottom and a comfortable, luggage-type handle. The TM 515 is extremely moisture and dust resistant and is designed to withstand the rigors of transport in car trunks and pickup trucks. Once at the destination, its rear cover is popped off to access the power cord and power switch and allow airflow for the built-in fan. Removing the front cover exposes up to five TM 500 plug-in instruments to reveal an operational electronics lab traveling as a suitcase.

Rackmount

The RTM 506 Rackmount Mainframe is electrically identical to the TM 506. The TM 5006 Option 10 is electrically identical to the standard TM 5006. Each instrument features a slide assembly and handles, plus a higher-power fan than the bench version to accommodate the higher ambient temperatures often found in enclosed racks and consoles. It is also possible to convert two TM 503's into a rackmount assembly with a kit. This kit has the advantage of requiring four inches less depth than the RTM 506 for space-critical applications, but lacks the fan and the high power compartments. Other kits are available to rackmount a single TM 503, a TM 503 with a monitor, or a TM 5003 with a 4041 System Controller.

Rear Interface Capability

Most TM 500 plug-in modules contain a duplication of the front-panel input and output connections in the back. Some plug-in modules also have additional signal or control lines that are present only at the back of the instrument. These signals are available at the rear edge-card connector of each plug-in. Thus, the user can interconnect modules via the rear interface board to reduce front panel clutter and to perform functions not otherwise available. For example, the trigger output of a signal source can be interconnected to the rear input of a counter for instant frequency checks at the touch of a front-panel switch. Or, a digital multimeter and power supply may be interconnected to speed precise voltage setups without any need to move test leads. Any module can be internally connected through the mainframe and also can be externally interfaced out the back panel.



TM 5003 and TM 5006 mainframes shown above.

Mainframes can be interfaced in a variety of ways. A user can solder together the appropriate connector pins on a standard mainframe, or can order the mainframe with Option 02. Option 02 provides factory-installed square-pin connectors at the rear interface between the mainframe and the plug-in instruments, plus a multi-pin connector and one or more BNC connectors mounted on the rear panel of the mainframe. To allow as much flexibility as possible, these connectors are not prewired. A wire kit consisting of specially prepared jumper wires and coax cables is provided with the option. Then, interfacing between instruments within a mainframe and with external devices is simply a matter of connecting the appropriate terminals together.

The TM 515 Traveler Mainframe is available with the Option 05 interface which includes everything in the Option 02 except the rear panel multi-pin connector, the mating cable connector, and the BNC connector.

Economy

TM 500 and TM 5000 mainframes represent a most economical approach in test and measurement instrumentation. Relatively fixed packaging costs for frames, covers, primary power circuits, unregulated secondary power circuits, and other items are a significant portion of the cost of a

typical instrument. Since these fixed costs associated with packaging are shared by many functional instruments in the TM 500 line, the cost-per-function may be lower than comparable, one or two-function monolithic instruments. Because of its modularity, expandability, and versatility, the modular concept represented by TM 500 may provide the lowest cost-per-test/measurement when you are considering multifunction usage.

The ability to upgrade to a higher-performance system without replacing the entire investment is made possible by the compatibility between the TM 500 and TM 5000 lines. Reduced cabling costs made possible by the rear-interface capability, the requirement for fewer GPIB cables for an equal number of instruments in the TM 5000 line; and the reduced space requirements for a measurement system all contribute to unprecedented economy for test and measurement requirements.

Power Requirements

All of the mainframes have manually selectable taps on the power transformer which permit operation on 100 V, 110 V, 120 V, 200 V, 220 V, or 240 V \pm 10%. Power line frequency range for the TM 501 and TM 503 is 48 Hz to 440 Hz. Power line frequency range for all of the other main-

frames is 48 Hz to 66 Hz, except that the TM 515 may be purchased with Option 06 which extends its upper power line frequency range to 440 Hz. Maximum power consumption of each is shown in the following table.

ENVIRONMENTAL CHARACTERISTICS

Temperature Range — Operating: 0°C to +50°C. Nonoperating: -55°C to +75°C.

Altitude Range — Operating: Sea level to 4600 m (15,000 ft). Nonoperating: Sea Level to 15 000 m (50,000 ft).

ORDERING INFORMATION



The TM 5003 and TM 5006 comply with IEEE Standard 488-1978.

TM 5003 Power Module Mainframe	\$790
Option 02 — Rear Interface	+ \$100
TM 5006 Power Module Mainframe ..	\$1,050
Option 02 — Rear Interface	+ \$180
Option 10 — Rackmount	+ \$100
Option 12 — Option 02 & Option 10 Combined	+ \$280

ORDERING INFORMATION

TM 501 Power Module Mainframe	\$340
Option 02 — Rear Interface	+ \$60
TM 503 Power Module Mainframe	\$340
Option 02 — Rear Interface	+ \$85
TM 504 Power Module Mainframe	\$375
Option 02 — Rear Interface	+ \$115
TM 506 Power Module Mainframe	\$525
Option 02 — Rear Interface	+ \$170
RTM 506 Rackmount Power Module Mainframe	\$680
Option 02 — Rear Interface	+ \$180
TM 515 Power Module Mainframe	\$650
Option 05 — Rear Interface	+ \$85
Option 06 — 48 Hz to 440 Hz Fan	+ \$165

CONVERSION KITS

Cabinet-to-rackmount conversion kit, equipped with slide out assembly, required to convert a TM 5006 to rackmount capability.

Order 040-0982-01

Rackmount-to-cabinet conversion kit, equipped to convert a TM 5006 with rackmount capability to cabinet style.

Order 040-0983-00

Cabinet-to-rackmount conversion kit, equipped with side-out assembly to rackmount a 4041 Instrument Controller to the left of a TM 5003.

Order 040-0984-00

Order 040-0984-00

Order 040-0984-00

Order 040-0984-00

MAINFRAMES DIMENSIONS AND WEIGHTS (WITHOUT PLUG-INS)

Dimensions	TM 5003		TM 5006		TM 501		TM 503		TM 504		TM 506		RTM 506		TM 515	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
Width	230	9.0	445	17.5	99	3.9	221	8.7	305	12.0	442	17.4	483	19.0	381	15.0
Height	194	7.6	194	7.6	152	6.0	152	6.0	152	6.0	152	6.0	133	5.3	173	6.8
Depth	488	19.2	488	19.2	389	15.3	432	17.0	508	20.0	508	20.0	480	18.9	508	20.0
Weight \approx	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb
Net	8.6	19.0	14.5	32.0	2.4	5.4	4.3	9.5	8.4	18.5	13.2	29.0	14.4	32.0	10.2	22.5
Shipping	12.0	26.5	20.9	46.0	5.9	13.0	7.7	17.0	11.8	25.0	18.6	41.0	21.0	46.0	13.6	30.0
Max Power Consumption*1	300 VA		650 VA		85 VA		250 VA		460 VA		670 VA		670 VA		500 VA	

*1 Actual power consumption depends on plug-in selection and operating modes.

Mainframe Retainer Bar



The mainframe retainer bar modification kit comes complete with the retainer bar, all necessary parts and instructions.

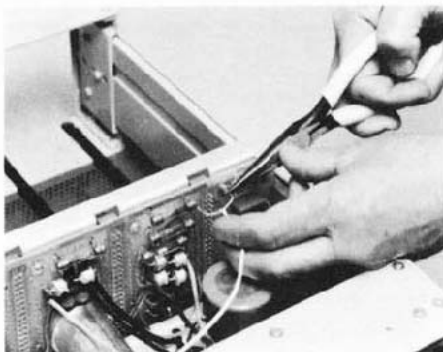
You may modify the TM 504 or RTM 506/TM 506 Mainframe; each has a separate kit. Initial installation requires replacement of an existing bottom member of the mainframe with a new part supplied in the kit. Then, the retainer bar can be simply added or removed with four screws accessible from the bottom of the mainframe.

ORDERING INFORMATION

TM 504 Mainframe Retainer Bar Kit
Order 020-0548-00 **\$45**

TM 506/RTM 506 Mainframe Retainer Bar Kit. Order 020-0549-00 **\$50**

TM 5000 Series Plug-in Retainer Kits in Process



Mainframe Rear Interface

TM 500 and TM 5000 Mainframes offer the unique ability to have separate modular instruments interconnected through the rear interface board of each mainframe. For example, the rear trigger output of a signal source can be interconnected to the rear input of a counter for instant frequency checks at the touch of a front-panel switch. Or, a digital multimeter and power supply may be interconnected to speed precise voltage set-ups without any need to move test leads. Any module can be internally connected through the mainframe and can also be externally interfaced out the back panel.

Most TM 500 and TM 5000 Plug-in modules contain a duplication of the front panel input and output connections in the back. These interface lines are built into the rear-edge circuit card connector of each plug-in. Some modules also have additional signal or control lines which are present only at the back of the instrument. In either case, different modules may be interconnected by the user to reduce front panel clutter or to perform functions not otherwise available.

Mainframes can be interfaced a variety of ways. A user can solder together the appropriate connector pins on a standard mainframe, or can order the mainframe with the Option 02. The Option 02 version of the mainframe comes equipped with square pin connectors on the rear interface circuit board and a special wire kit consisting of standard wires and coaxial cables with mating square pin receptacles. Option 02 also provides a rear-panel male connector, mating cable connectors, and one BNC connector per plug-in compartment.

The square pin connectors eliminate the need to hand-solder connections to the interface circuit board, extending the life of the mainframes. The remaining Option 02 components offer a variety of interfacing alternatives limited only by the user's ingenuity and imagination.

The TM 515 Mainframe is available with an Option 05 interface that includes everything in the Option 02 except for the rear panel male connector, mating cable connector and the BNC connectors.

Tektronix has published a Rear Interface Data Book that contains information on the interfacing capability of each instrument "family." This book is available through Tektronix by filling out a card included in each mainframe package.

Tektronix also makes a low-cost "do-it-yourself" Rear Interface Modification Kit. It enables those who don't need the full flexibility of factory installed interface pins at every connector to install a limited rear interface on any TM 500 and TM 5000 Mainframe except the TM 501. The kit includes fourteen square pins, and three coaxial cables, all with female pin receptacles. Installation instructions also included. For "do-it-yourself" modification kit:

Order 040-0846-01 \$49

Accessory Pouch



While the TM 501, TM 503, TM 504, and TM 506 TM 5003/5006 Mainframes were designed primarily for bench use, they are frequently carried away for service elsewhere. Taking along the probes, cables, terminators, and other accessories usually required can then be a problem. The soft vinyl accessory pouch neatly solves this problem; sturdy snap-around straps let the pouch be secured to the carrying handle of any TM 500/5000 Mainframe or Tektronix Oscilloscope, or the straps may be snapped together to form a carrying handle for the pouch to be used independently. A convenient side zipper lets accessory items be removed or stored without removing the pouch from the mainframe handle. Dimensions ~9 1/4 in long x 5 3/4 in wide x 2 in high.

Order 016-0351-00 \$25

TM 500 Carrying Case



These luggage-type carrying cases for TM 500 equipment are molded of high strength glass-epoxy. The TM 503 model weighs 12 pounds empty and measures 23 1/2 inches long by 8 1/2 inches thick by 15 1/2 inches high, including rubber feet, lockable latches, and handle. Inside, the resilient polyurethane foam is molded to accept a TM 503 (with or without the protective front cover) plus either a spare TM 500 family module or a 200 Series Miniscope. A third compartment in the foam accepts miscellaneous cables, accessories, or small tools.

The TM 504 case has a molded foam insert that will accept the TM 504 (with or without the protective front cover) but has no provisions for spare modules or tools. It is 610 mm long x 216 mm thick x 445 mm high, (24 in. long by 8.5 in. thick by 17.5 in high) and weighs ~14 pounds empty.

ORDERING INFORMATION

Carrying Case for TM 503
Order 016-0555-00 **\$395**

Carrying Case for TM 504
Order 016-0608-00 **\$425**

Carrying Case for TM 515
Order 016-0643-00 **\$400**