

Installing the Output Module in the DTG5000 series Data Timing Generator

The DTG5000 Series Data Timing Generator mainframe and output module(s) are shipped separately. The DTGM10, DTGM20, DTGM21, DTGM30, DTGM31 and DTGM32 are output modules that can be used with the DTG5000 mainframe. These modules can be used in any combination and in any slot. There are functional differences between slot A though slot D and slot E though slot H. Refer to *the Mainframe and Output Configuration* subsection in the DTG5000 User Manual. It is recommended that you use slot A when only one output module is installed in the mainframe.

Electrostatic Discharge

To prevent electrostatic damage to the DTG5000 Series output modules, follow the precautions described below.



CAUTION. *Output modules are inherently vulnerable to a static damage. Be sure to operate the output module in a static-controlled environment. If the output module is not going to be in use for an extended period of time, attach the connector caps and SMA termination (DTGM30, DTGM31, DTGM32) to the output module. Store the output module in the antistatic bag. The connector caps and SMA terminations (DTGM30, DTGM31, DTGM32) are provided with your output module.*

Installing an Output Module

To install the output module, first turn off the instrument using the front panel On/Standby switch.



CAUTION. *To prevent damage to the output module or mainframe, never install or remove an output module when the mainframe is powered on. Avoid touching the board surface or connectors with your fingers when you handle the module. Attach the blank panel to the slot(s) when the output module(s) are not installed.*

1. Verify that the data timing generator mainframe is not powered on.
2. Remove the blank panel from the mainframe slot.
3. Align the output module with the slot.
4. Gently push the output module into the slot using firm pressure.
5. Once the module is seated, tighten the two screws with either a flat head or a Philips screwdriver to secure the module to the mainframe. To prevent damage to the module, use a torque screwdriver and tighten the screw to the range of 25 to 35 N-cm (2.2 in lb to 3.1 in lb).



Removing an Output Module

Verify that the data timing generator mainframe is not powered on.

1. To remove an output module from the mainframe, first turn off the instrument using the On/Standby switch.
2. Loosen the two screws.
3. Grasp the right and left screws and slowly pull the module out of the the mainframe.
4. Attach a blank panel to the slot(s).

Signal output Connector Care

Never attach a cable to signal output connectors if the cable has a worn or damaged connector because you may damage the output module connector. Use extra care when attaching or removing a cable from the connectors. Turn only the nut, not the cable. When attaching a cable to an output module connector, align the connectors carefully before turning the nut. Use light finger pressure to make this initial connection. Then tighten the nut lightly with a wrench.



CAUTION. For best repeatability and to prolong the life of both connectors, use a torque wrench and tighten the connection in the range of 79-112 N-cm (7 in lb to 10 in lb).

Contents list (accessories)

	DTGM10	DTGM20 /DTGM21	DTGM30	DTGM31	DTGM32
SMA Connector Cap	4	4	2	2	3
50 Ω SMA Terminator	none	none	2*	1*	1*
Microsoft Windows 2000 Recovery Disk	0	0/1	0	1	1
Application Software Disk	0	0/1	0	1	1
Documents Disk	1	1	1	1	1

*50 Ω SMA Terminator part number: 015-1022-01

Specification

Mainframe	DTG5078	DTG5274 / DTG5334
Maximum Data Rate	750 Mb/s	2.7 Gb/s (DTG5274) 3.35 Gb/s (DTG5334)
Number of card slot	A, B, C, D, E, F, G, H Eight slots	A, B, C, D Four slots
Delay control	1 ps resolution (All channel)	0.2 ps resolution (All channel)
Width control	5 ps resolution (All channel in slot A to D)	5 ps resolution (All channel)
Master slave operation	Up to 3 boxes	Up to 2 boxes

Output Module	DTGM10	DTGM20	DTGM21	DTGM30	DTGM31	DTGM32
Number of channel	4 or 2 ^{*1}	4 or 2 ^{*1}	4 or 2 ^{*1}	2	1	1
Amplitude (50 Ω) (1M Ω)	3.5 Vp-p ^{*2}	3.5 Vp-p ^{*3}	5.35 Vp-p ^{*4} 3.90 Vp-p ^{*5}	1.25 Vp-p	1.25 Vp-p	1.25 Vp-p
	10 Vp-p	7 Vp-p	7.81 Vp-p ^{*6}	2.5 Vp-p	2.5 Vp-p	2.5 Vp-p
Source Impedance (typical)	50 Ω	50 Ω	23 Ω or 50 Ω ^{*7}	50 Ω	50 Ω	50 Ω
Maximum output current	+/- 40 mA	+/- 80 mA	+/- 80 mA	+/- 80 mA	+/- 80 mA	+/- 80 mA
Rise /Fall Time (20~80%) at 1Vp-p into 50 Ω	< 540 ps (Variable)	< 340 ps (Variable)	< 350 ps	< 110 ps	< 110 ps	< 110 ps
Inhibit Input	-	-	Yes	-	-	-
External Jitter Input	-	-	-	-	Yes	Yes

*1. Ch3 and Ch4 are not available in the DTG5274 or the DTG5334.

*2. This value is limited by Maximum Output (+/-40mA Max.)

*3. This value is limited by Maximum Output (+/-80mA Max.)

*4. Source impedance is 23 Ω

*5. Source impedance is 50 Ω

*6. Recommended source impedance is 50 Ω

*7. This is selectable by moving the conductor in the box.

NOTE When the module(DTGM21, DTGM31 and DTGM32) is installed in the DTG5078 or the DTG5274, applies to firmware version I.xx. You have to upgrade the OS by using attached the Windows2000 Recovery Disk. Please refer to Appendix B "System Recovery" in User Manual.
