

PRODUCT GUIDE

RF Signal Generators

μ W Signal Generators

Arbitrary Waveform Generators/Transceivers

RF Arbitrary Waveform Generators/Tranceivers

PXIe Chassis with Embedded Controllers

Applications

Modular RF Amplifiers

PXI & PCI Signal Amplifiers

Modular Signal Amplifiers

Arbitrary Waveform Generators

Pulse Arbitrary Generators

PXI & PCI Arbitrary Waveform / Function Generators

Signal Amplifiers

Simulate, Stimulate, Test...

About Tabor Electronics

Established in 1971, Tabor Electronics has become a world-leading provider of high-end signal sources, featuring RF, pulse, function and arbitrary waveform generators and transceivers; high-voltage amplifiers; and waveform and modulation creation software. Tabor has earned global recognition for its highly skilled workforce and innovative engineering capabilities. In addition to offering a full range of self-branded instruments, Tabor is also a world-class OEM that private-labels a variety of products for industry leaders. Technologically advanced, featuring the highest levels of performance, reliability, and, most importantly, price-competitiveness, Tabor products are currently used in a wide range of applications from quantum physics experiment control to military and aerospace asset testing.

Over the past decade Tabor has extended its global reach. Headquartered in Nesher, Israel, Tabor maintains a worldwide distribution network and has become the partner of choice for over 50 major distributors and integrators around the globe.

Customer Service and Support

- Professional assistance for choosing the perfect solution.
- Individualized technical support help desk.
- Repair and calibration services in Israel and the USA.

Warranty

The instruments come standard with a three- or five-year warranty. Each instrument has full test results, a calibration certificate, an online product and programming manual, software drivers, and programming examples. Our obligation under this warranty is to repair or replace any instrument or part thereof that, within the warranty period after shipment, proves defective upon examination. To exercise this warranty, write or call your local Tabor representative or contact Tabor Headquarters and you will be given prompt assistance and shipping instructions.

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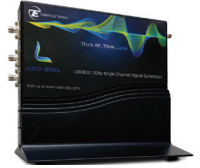
RF Signal Generators

LUCID Series

Tabor's Lucid Series of RF analog signal generators offers industry-leading performance in multiple form factors. The series features 3, 6, and 12 GHz models in desktop, portable, benchtop, or rackmount configurations. All units have extremely fast switching speed, superior signal fidelity, and analog modulation including AM, FM, PM, and Pulse Modulation. It has an intuitive graphical user interface, remote SCPI control, and backwards command compatibility with most signal generators.

DESKTOP PLATFORM

The Desktop Platform offers all the functionality of a full-featured benchtop analog RF signal generator but in an industry-leading small package. It is designed to be used on the bench, as an embedded source, or as part of a larger automated test system (especially when rack space is at a premium). A GUI and an API are provided for easy control from your PC through Micro-USB or SPI.



| Models | LS3081D | LS6081D | LS1291D |
|--|--|-----------------------------|-----------------------------|
| Frequency Range | 9kHz to 3GHz | 9kHz to 6GHz | 9kHz to 12GHz |
| Channels | 1 | 1 | 1 |
| Power | -20 (-90 option) to +15 dBm | -20 (-90 option) to +15 dBm | -20 (-90 option) to +15 dBm |
| Phase Noise (@10kHz) | 1GHz: -138 dBc/Hz typ 2GHz: -133 dBc/Hz typ 3GHz: -130 dBc/Hz typ 6GHz: -124 dBc/Hz typ 12GHz: -118 dBc/Hz typ | | |
| Harmonics: Up to 100MHz 100MHz to 12GHz | -30dBc -50dBc | -30dBc -50dBc | -30dBc -50dBc |
| Non-Harmonics up to 12 GHz | -90dBc (typ) -60dBc max. | | |
| Modulation | Internal or External: FM, AM, PM, Pulse, Pattern, Sweep, List | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Studio | | |
| Product Emulators | Keysight, R&S, quicksyn, Anapico & Holzworth | | |
| Connectivity | SPI, micro-USB | SPI, micro-USB | SPI, micro-USB |

PORTABLE PLATFORM

A rugged field-portable signal generator, the Portable Platform is equipped with a 10" touch screen that is suitable for day and night use. In addition, it has more than 2-hours of operational battery life with built-in USB, an optional LAN interface, and a removable micro-SD card. You'll get the performance you need without worrying about an AC supply.



| Models | LS3081P | LS6081P | LS1291P |
|--|--|-----------------------------|-----------------------------|
| Frequency Range | 9kHz to 3GHz | 9kHz to 6GHz | 9kHz to 12GHz |
| Channels | 1 | 1 | 1 |
| Power | -20 (-90 option) to +15 dBm | -20 (-90 option) to +15 dBm | -20 (-90 option) to +15 dBm |
| Phase Noise (@10kHz) | 1GHz: -138 dBc/Hz typ 2GHz: -133 dBc/Hz typ 3GHz: -130 dBc/Hz typ 6GHz: -124 dBc/Hz typ 12GHz: -118 dBc/Hz typ | | |
| Harmonics: Up to 100MHz 100MHz to 12GHz | -30dBc -50dBc | -30dBc -50dBc | -30dBc -50dBc |
| Non-Harmonics up to 12 GHz | -90dBc (typ) -60dBc max. | | |
| Modulation | Internal or External: FM, AM, PM, Pulse, Pattern, Sweep, List, | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Studio | | |
| Product Emulators | Keysight, R&S, quicksyn, Anapico & Holzworth | | |
| Connectivity | SPI, micro-USB | SPI, micro-USB | SPI, micro-USB |
| Product Emulators | Keysight, R&S, quicksyn, Anapico & Holzworth | | |
| Connectivity | USB, micro-USB to LAN | USB, micro-USB to LAN | USB, micro-USB to LAN |

BENCHTOP PLATFORM

Creating multiple analog RF signals on the bench is easy, The Benchtop Platform is housed in a 19 3/4" 2U enclosure with a 5" touchscreen and front panel controls enabling stand-alone operation. The unit can be configured with 1,2 or 4-phase coherent RF channels and has built-in LAN, a USB interface with SCPI control, and a removable micro-SD card. With phase-coherent, multi-channel capability it can solve a host of measurement applications in quantum physics, amplifier characterization, and phased array antenna systems.



| Models | LS3081B LS3082B LS3084B | LS6081B LS6082B LS6084B | LS1291B LS1292B LS1294B |
|--|--|--------------------------------------|--------------------------------------|
| Frequency Range | 9kHz to 3GHz | 9kHz to 6GHz | 9kHz to 12GHz |
| Channels | 1 2 4 | 1 2 4 | 1 2 4 |
| Power | -80 (opt -150) to + 15 (opt 127) dBm | -80 (opt -150) to + 15 (opt 127) dBm | -80 (opt -150) to + 15 (opt 127) dBm |
| Phase Noise (@10kHz) | 1GHz: -138 dBc/Hz typ 2GHz: -133 dBc/Hz typ 3GHz: -130 dBc/Hz typ 6GHz: -124 dBc/Hz typ 12GHz: -118 dBc/Hz typ | | |
| Harmonics: Up to 100MHz 100MHz to 12GHz | -30dBc -50dBc | -30dBc -50dBc | -30dBc -50dBc |
| Non-Harmonics | -90dBc (typ) -60dBc max | | |
| Modulation | Internal or External: FM, AM, PM, Pulse, Pattern, Sweep, List | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Storage | Removable SD Card | | |
| Display | 5" Color Touch Display | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Studio | | |
| Product Emulators | Keysight, R&S, quicksyn, Anapico & Holzworth | | |
| Connectivity | USB, LAN | USB, LAN | USB, LAN |

RACK MOUNT PLATFORM

The Rack Mount Platform With all the features of the Benchtop Platform the Rack Mount offers the industry's highest channel density in the least possible space, with up to 4 phase-coherent channels in a 19" 1U unit and up to 16 phase-coherent channels in a 19" 3U unit. Connectivity for remote control is enabled with LAN and USB interfaces and SCPI control.



| Models | LS3081R LS3082R LS3084R | LS6081R LS6082R LS6084R | LS1291R LS1292R LS1294R |
|--|--|--------------------------------------|--------------------------------------|
| Frequency Range | 9kHz to 3GHz | 9kHz to 6GHz | 9kHz to 12GHz |
| Channels | 1 2 4 | 1 2 4 | 1 2 4 |
| Power | -80 (opt -150) to + 15 (opt 127) dBm | -80 (opt -150) to + 15 (opt 127) dBm | -80 (opt -150) to + 15 (opt 127) dBm |
| Phase Noise (@10kHz) | 1GHz: -138 dBc/Hz typ 2GHz: -133 dBc/Hz typ 3GHz: -130 dBc/Hz typ 6GHz: -124 dBc/Hz typ 12GHz: -118 dBc/Hz typ | | |
| Harmonics: Up to 100MHz 100MHz to 12GHz | -40dBc -50dBc | -40dBc -50dBc | -40dBc -50dBc |
| Non-Harmonics | -90dBc (typ) -60dBc max | | |
| Modulation | Internal or External: FM, AM, PM, Pulse, Pattern, Sweep, List | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Storage | Removable SD Card | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Studio | | |
| Product Emulators | Keysight, R&S, quicksyn, Anapico & Holzworth | | |
| Connectivity | USB, LAN | USB, LAN | USB, LAN |

μW Signal Generators

LUCID-X Series

The new Lucid-X Series extends the frequency range of Tabor's industry-leading Lucid Series of analog signal generators. The series features 8, 20, and 40GHz frequency ranges and offers all the advanced capability of the Lucid series but extended to mmWave. Built on Tabor's modular-technology platform, the LSX family is available in PXIe, Desktop, Rack, Benchtop and Portable formfactors. Specs are not final.

DESKTOP PLATFORM

The Desktop Platform offers all the functionality of a fully featured, full-size, μW analog signal generator in the smallest footprint module available. Its small size enables it to be used as single signal generator on the bench or easily scaled to hundreds of channels, in larger systems, while keeping the required space to a minimum.



| Models | LSX8081D | LSX2091D | LSX4091D |
|--|--|----------------------------|----------------------------|
| Frequency Range | 100 kHz to 8GHz | 100 kHz to 20GHz | 100 kHz to 40GHz |
| Channels | 1 | 1 | 1 |
| Power | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm |
| Phase Noise @10kHz (typ.) | -155dBc/Hz at 100MHz -141dBc/Hz at 500MHz -134dBc/Hz at 1GHz -116dBc/Hz at 8GHz -109dBc/Hz at 20GHz -103dBc/Hz at 40GHz | | |
| Harmonics: Up to 8GHz 8GHz to 20GHz 20GHz to 40GHz | -50dBc | -50dBc -40dBc | -50dBc -40dBc -35dBc |
| Non-Harmonics up to 40 GHz | -90dBc (typ) -60dBc max. | | |
| Modulation | Internal or External: AM, FM, PM, Pattern, Sweep & Pulse | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Control Panel | | |
| Product Emulators | Keysight, R&S, Quicksyn, Anapico & Holzworth | | |
| Connectivity | SPI, USB Type C | SPI, USB Type C | SPI, USB Type C |

PORTABLE PLATFORM

A rugged field-portable signal generator, the Portable Platform is equipped with a 10" touch screen that is suitable for day and night use. In addition, it has more than 1-hour of operational battery life with built-in USB, an optional LAN interface, and a removable micro-SD card. You'll get the performance you need without worrying about an AC supply.



| Models | LSX8081P | LSX2091P | LSX4091P |
|--|--|----------------------------|----------------------------|
| Frequency Range | 100 kHz to 8GHz | 100 kHz to 20GHz | 100 kHz to 40GHz |
| Channels | 1 | 1 | 1 |
| Power | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm |
| Phase Noise @10kHz (typ.) | -155dBc/Hz at 100MHz -141dBc/Hz at 500MHz -134dBc/Hz at 1GHz -116dBc/Hz at 8GHz -109dBc/Hz at 20GHz -103dBc/Hz at 40GHz | | |
| Harmonics: Up to 8GHz 8GHz to 20GHz 20GHz to 40GHz | -50dBc | -50dBc -40dBc | -50dBc -40dBc -35dBc |
| Non-Harmonics up to 12 GHz | -90dBc (typ) -60dBc max.. | | |
| Modulation | Internal or External: AM, FM, PM, Pattern, Sweep & Pulse | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Display | Field ready, with 10" touch screen suited for day and night use and 1 hour battery operation | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Control Panel | | |
| Product Emulators | Keysight, R&S, Quicksyn, Anapico & Holzworth | | |
| Connectivity | SPI, Micro-USB, and LAN | SPI, Micro-USB, and LAN | SPI, Micro-USB, and LAN |

BENCHTOP PLATFORM

Creating multiple analog $\mu\text{W}/\text{mm}^2$ signals on the bench is easy. The Benchtop Platform is housed in a 19 $\frac{3}{4}$ " 2U enclosure with a 5" touchscreen and front panel controls enabling stand-alone operation. The unit can be configured with 1, 2 or 4- phase coherent RF channels, and has built-in LAN, a USB interface with SCPI control, and a removable micro-SD card. With phase-coherent, multi-channel capability it can solve a host of measurement applications in quantum physics, amplifier characterization, and phased array antenna systems.



| Models | LSX8081B | LSX2091B | LSX4091B |
|--|--|----------------------------|----------------------------|
| Frequency Range | 100 kHz to 8GHz | 100 kHz to 20GHz | 100 kHz to 40GHz |
| Channels | 1, 2, 4 | 1, 2, 4 | 1, 2, 4 |
| Power | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm |
| Phase Noise @10kHz (typ.) | -155dBc/Hz at 100MHz -141dBc/Hz at 500MHz -134dBc/Hz at 1GHz -116dBc/Hz at 8GHz -109dBc/Hz at 20GHz -103dBc/Hz at 40GHz | | |
| Harmonics: Up to 8GHz 8GHz to 20GHz 20GHz to 40GHz | -50dBc | -50dBc -40dBc | -50dBc -40dBc -35dBc |
| Non-Harmonics | -90dBc (typ) -60dBc max | | |
| Modulation | Internal or External: AM, FM, PM, Pattern, Sweep & Pulse | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Storage | Removable SD Card | | |
| Display | 5" Color Touch Display | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Control Panel | | |
| Product Emulators | Keysight, R&S, Quicksyn, Anapico & Holzworth | | |
| Connectivity | USB, LAN | USB, LAN | USB, LAN |

RACK MOUNT PLATFORM

With all the features of the Benchtop Platform the Rack Mount offers the industry's highest mmWave channel density in the least possible space, with up to 4 phase-coherent channels in a 19" 1U unit and up to 16 phase phase-coherent channels in a 19" 3U unit. Connectivity for remote control is enabled with LAN and USB interfaces and SCPI control.



| Models | LSX8081R | LSX2091R | LSX4091R |
|--|--|----------------------------|----------------------------|
| Frequency Range | 100 kHz to 8GHz | 100 kHz to 20GHz | 100 kHz to 40GHz |
| Channels | 1, 2, 4 | 1, 2, 4 | 1, 2, 4 |
| Power | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm |
| Phase Noise @10kHz (typ.) | -155dBc/Hz at 100MHz -141dBc/Hz at 500MHz -134dBc/Hz at 1GHz -116dBc/Hz at 8GHz -109dBc/Hz at 20GHz -103dBc/Hz at 40GHz | | |
| Harmonics: Up to 8GHz 8GHz to 20GHz 20GHz to 40GHz | -50dBc | -50dBc -40dBc | -50dBc -40dBc -35dBc |
| Non-Harmonics | -90dBc (typ) -60dBc max | | |
| Modulation | Internal or External: AM, FM, PM, Pattern, Sweep & Pulse | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Storage | Removable SD Card | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Control Panel | | |
| Product Emulators | Keysight, R&S, Quicksyn, Anapico & Holzworth | | |
| Connectivity | USB, LAN | USB, LAN | USB, LAN |

PXIe Platform

The Modular Platform offers all the functionality of a fully featured rack or bench μ W analog signal generator in a two-slot PXIe module. Its small size and modularity enable it to be scaled from a single channel up to hundreds of channels, providing μ W and mm waves.



| Models | LSX8081X | LSX2091X | LSX4091X |
|----------------------------|---|----------------------------|----------------------------|
| Frequency Range | 100 kHz to 8GHz | 100 kHz to 20GHz | 100 kHz to 40GHz |
| Channels | 1 | 1 | 1 |
| Power | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm | -50 (-70 Option) to +10dBm |
| Phase Noise (@10kHz) | -134dBc/Hz at 1GHz | | |
| Harmonics up to 8GHz | -50dBc | -50dBc | -50dBc |
| 8GHz to 20GHz | | -40dBc | -40dBc |
| 20GHz to 40GHz | | | -35dBc |
| Non-Harmonics up to 40 GHz | -90dBc (typ) -60dBc max. | | |
| Modulation | Internal or External: AM, FM, PM, Pattern, Sweep & Pulse | | |
| Run Modes | Continuous, Trigger | Continuous, Trigger | Continuous, Trigger |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Lucid Control Panel | | |
| Product Emulators | Keysight, R&S, Quicksyn, Anapico & Holzworth | | |
| Connectivity | PXIe | PXIe | PXIe |

Arbitrary Waveform Generators / Transceivers

Proteus Series

Proteus provides both state-of-the-art arbitrary waveform generation with optional digitizer capability. The system integrates the ability to transmit, receive, and perform user-programmable FPGA-based digital signal processing and decision making all in a single instrument. Proteus provides the key capability for closed-loop transceiver software defined radio applications in aerospace, defense, telecommunications, automotive, and physics applications.

PXIe Platform

The Proteus module takes full advantage of the PXI Express Platform. Its core transmit, receive, and FPGA processing functions are enhanced with the addition of high-speed data transfer and incredible phase coherent channel density (up to 32 channels per 19" 3U chassis).



| MODEL | P1282M P1284M | P2582M P2584M | P9082M |
|-----------------------------------|--|--------------------|---------------|
| Channels | 2 4 | 2 4 | 2 |
| Modes | Standard, Arbitrary, Task | | |
| Max. Sample Clock Rate | 1.25GS/s | 2.5GS/s | 9GS/s |
| Memory Size | 1G/2G/4G | 2G/4G/8G | 2G/4G/8G |
| Vertical Resolution | 16 bits | 16 bits | Up to 16 bits |
| Output Type | DC | DC Direct (AC) | |
| Bandwidth | 625MHz | 1.25GHz 2.5GHz | 4.5GHz 9GHz |
| Max Amplitude (into 50 Ω) | 1.2Vp-p | 1.2Vp-p 600mVp-p | |
| Transition Time (20/80 typ.) | <150ps | <100ps <40ps | |
| Run Modes | Continuous, Trigger, Gate | | |
| Digitizer (AWT Option) | 12bit, 5.4GS/s Single Channel or 2.7GS/s Dual Channel | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Wave Design Studio | | |
| Connectivity | PXIe Gen3 x8 Lanes | | |

Desktop Platform

The Desktop Platform provides up to 12 channels of capability, but without a touch screen, saving both space and cost. This compact platform has both an internal computer and remote control via an external PC. Connectivity to the instrument is provided by 3 x USB HOST and 1 x 10Gbit LAN as standard. Thunderbolt 3, GPIB, or 2 x 10Gbit Optical are available as options.



| MODEL | P1282D P1284D P1288D P12812D | P2582D P2584D P2588D P25812D | P9082D P9084D P9086D |
|-----------------------------|--|------------------------------------|---------------------------|
| Channels | 2 4 8 12 | 2 4 8 12 | 2 4 6 |
| Modes | Standard, Arbitrary, Task | | |
| Max. Sample Clock Rate | 1.25GS/s | 2.5GS/s | 9GS/s |
| Memory Size | 1G/2G/4G | 2G/4G/8G | 2G/4G/8G |
| Vertical Resolution | 16 bits | 16 bits | Up to 16 bits |
| Output Type | DC | DC Direct (AC) | DC Direct (AC) |
| Bandwidth | 625MHz | 1.25GHz 2.5GHz | 4.5GHz 7GHz |
| Max Amplitude (into 50Ω) | 1.2Vp-p | 1.2Vp-p 600mVp-p | 1.2Vp-p 600mVp-p |
| Transition Time (20/80 typ) | <150ps | <100ps <40ps | <100ps <40ps |
| Run Modes | Continuous, Trigger, Gate | Continuous, Trigger, Gate | Continuous, Trigger, Gate |
| Digitizer (AWT Option) | 12bit, 5.4GS/s Single Channel or 2.7GS/s Dual Channel | | |
| Storage | Removable SSD | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Wave Design Studio | | |
| Connectivity | 3 x USB HOST, 1 x 1Gbit LAN Std., 2 x 10Gbit Optical/LAN Ports Optional | | |

Benchtop Platform

The Benchtop has all the capability of the Desktop but has a 9" touch screen, keypad and an on-board PC, creating a fully standalone system. With a maximum channel count of 12 AWGs, it is a compact, self-contained unit, providing waveform creation, sequencing and analysis on the bench.



| MODEL | P1282B P1284B P1288B P12812B | P2582B P2584B P2588B P25812B | P9082B P9084B P9086B |
|-----------------------------|--|------------------------------------|---------------------------|
| Channels | 2 4 8 12 | 2 4 8 12 | 2 4 6 |
| Modes | Standard, Arbitrary, Task | | |
| Max. Sample Clock Rate | 1.25GS/s | 2.5GS/s | 9GS/s |
| Memory Size | 1G/2G/4G | 2G/4G/8G | 2G/4G/8G |
| Vertical Resolution | 16 bits | 16 bits | Up to 16 bits |
| Output Type | DC | DC Direct (AC) | DC Direct (AC) |
| Bandwidth | 625MHz | 1.25GHz 2.5GHz | 4.5GHz 7GHz |
| Max Amplitude (into 50Ω) | 1.2Vp-p | 1.2Vp-p 600mVp-p | 1.2Vp-p 600mVp-p |
| Transition Time (20/80 typ) | <150ps | <100ps <40ps | <100ps <40ps |
| Run Modes | Continuous, Trigger, Gate | Continuous, Trigger, Gate | Continuous, Trigger, Gate |
| Digitizer (AWT Option) | 12bit, 5.4GS/s Single Channel or 2.7GS/s Dual Channel | | |
| Display | 9" Touch Color LCD Display | | |
| Storage | Removable SSD | | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Wave Design Studio | | |
| Connectivity | 3 x USB HOST, 1 x 1Gbit LAN Std., 2 x 10Gbit Optical/LAN Ports Optional | | |

RF Arbitrary Waveform Generators / Transceivers

PXIe Platform

Utilizing state of the art RF DAC and ADC technology, phase coherent channel density (up to 32 channels per 19" 3U 19" chassis) and high- speed data transfer, the Proteus RF PXIe Series can be used to create complex RF environments in real-time.



| MODEL | P9482M | P9484M |
|------------------------------|--|----------|
| Channels | 2 | 4 |
| Modes | Standard, Arbitrary, Task | |
| Max. Sample Clock Rate | 9GS/s | 9GS/s |
| Memory Size | 8GS | 8GS |
| Max. Vertical Resolution | 16 bits | 16 bits |
| Output Type | AC | AC |
| Bandwidth | 8GHz | 8GHz |
| Max Amplitude (into 50Ω) | 550mVp-p | 550mVp-p |
| Transition Time (20/80 typ.) | <40ps | <40ps |
| Run Modes | Continuous, Trigger, Gate | |
| Digitizer (AWT Option) | 12bit, 5.4GS/s Single Channel or 2.7GS/s Dual Channel | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Wave Design Studio | |
| Connectivity | PXIe Gen3 x8 Lanes | |

Desktop Platform

Provides up to 12 channels of capability, but without a touch screen, saving both space and cost – the RF DAC and ADC capability can replace and simplify many test setups that include cumbersome Vector Signal Generators and Analyzers. This compact desktop platform is controlled via an external PC and connectivity to the instrument is provided by 3 x USB HOST, 1 x 10Gbit LAN as standard or Thunderbolt 3, GPIB or 2 x 10Gbit Optical as options.



| MODEL | P9482D | P9484D | P9488D | P94812D |
|------------------------------|--|--------|------------------------------|---------|
| Channels | 2 | 4 | 8 | 12 |
| Modes | Standard, Arbitrary, Task | | | |
| Max. Sample Clock Rate | 9GS/s | | 9GS/s | |
| Memory Size | 8GS | | 8GS | |
| Max. Vertical Resolution | 16 bits | | 16 bits | |
| Output Type | AC | | AC | |
| Bandwidth | 8GHz | | 8GHz | |
| Max Amplitude (into 50Ω) | 550mVp-p | | 550mVp-p | |
| Transition Time (20/80 typ.) | <40ps | | <40ps | |
| Run Modes | Continuous, Trigger, Gate | | | |
| Digitizer (AWT Option) | 12bit, 5.4GS/s Single Channel or 2.7GS/s Dual Channel | | | |
| Storage | Built-In M.2 Removable SSD | | Built-In M.2 Removable SSD | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Wave Design Studio | | | |
| Connectivity | 3 x USB HOST, 1 x 10Gbit LAN Std., Thunderbolt 3, GPIB, 2 x 10Gbit Optical Options | | | |

Benchtop Platform

The Benchtop has all the capabilities of the Desktop but has a 9" touch screen, keypad and an on-board PC, creating a fully standalone system. With a maximum channel count of 12 AWG's, it is a compact, self-contained unit, providing waveform creation, sequencing and analysis on the bench.



| MODEL | P9482B | P9484B | P9488B | P94812B |
|------------------------------|--|--------|------------------------------|---------|
| Channels | 2 | 4 | 8 | 12 |
| Modes | Standard, Arbitrary, Task | | | |
| Max. Sample Clock Rate | 9GS/s | | 9GS/s | |
| Memory Size | 8GS | | 8GS | |
| Max. Vertical Resolution | 16 bits | | 16 bits | |
| Output Type | AC | | AC | |
| Bandwidth | 8GHz | | 8GHz | |
| Max Amplitude (into 50Ω) | 550mVp-p | | 550mVp-p | |
| Transition Time (20/80 typ.) | <40ps | | <40ps | |
| Run Modes | Continuous, Trigger, Gate | | | |
| Digitizer (AWT Option) | 12bit, 5.4GS/s Single Channel or 2.7GS/s Dual Channel | | | |
| Display | 9" Touch Color LCD Display | | | |
| Storage | Built-In M.2 Removable SSD | | Built-In M.2 Removable SSD | |
| Remote Programming | Full IVI (C++, CVI, LabView), Python & MATLAB drivers and Wave Design Studio | | | |
| Connectivity | 3 x USB HOST, 1 x 10Gbit LAN Std., Thunderbolt 3, GIPB, 2 x 10Gbit Optical Options | | | |

PXIe Chassis with Embedded Controllers

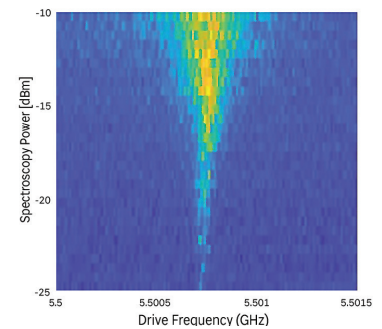
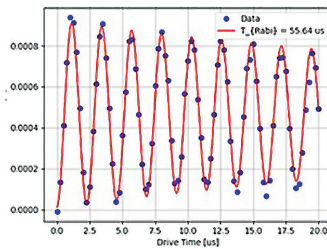
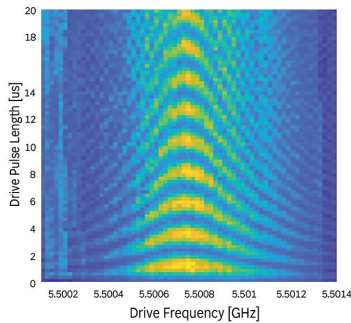
The PXIe Chassis allows you to purchase any Proteus PXIe module or amplifier and later add more channels or upgrade to higher sample rates. The system includes an embedded PC with an internal SSD drive, HDMI connection, and USB interfaces for a mouse and keyboard, as well as control using USB-C and 1000BASE-T LAN.



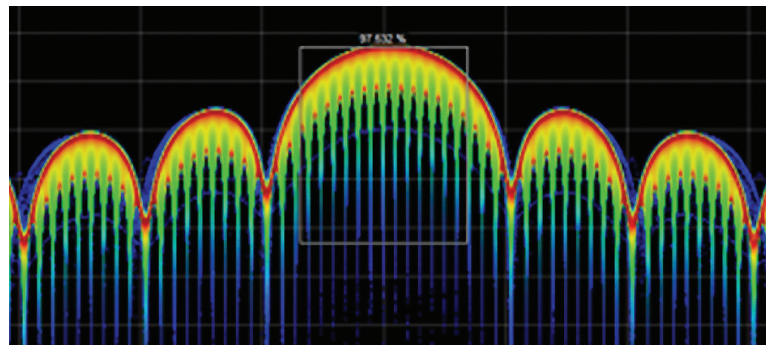
| MODEL | PXE6410 | PXE21100 |
|---------------------|---|---|
| Slots | 6 slots | 21 slots |
| Bus Configuration | Gen 3, x4 Lanes | Gen 4, x8 Lanes |
| Embedded Controller | | |
| CPU | Intel D1508 2 Cores Std. / D1548 8 Cores Opt. | Intel i5-13500E Std. / Intel i9-13900E Opt. |
| Memory | 16G Std. / 64G Opt. | 16G Std. / 128G Opt. |
| Storage | 120GB Std. / 1T Opt. | |
| Ports | 3xUSB A (Host), 1xUSB C (Device), LAN | 4xUSB A (Host), LAN |
| Build-in Graphics | HDMI | Display Port |
| Operating System | Windows 10 IoT Std. | |

Applications

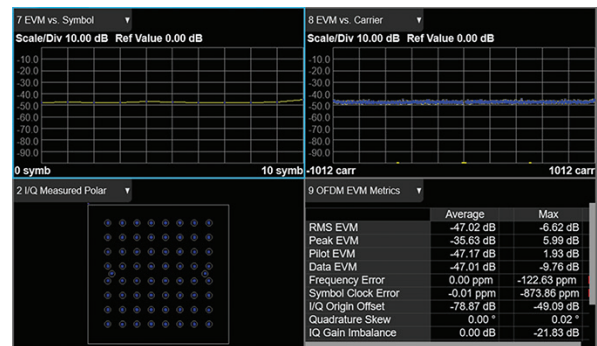
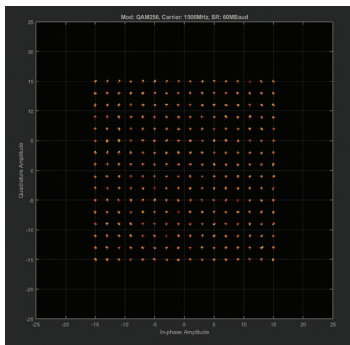
Quantum Physics - Proteus plays a part in many quantum physics experiments. Its unique AWT architecture allows for the generation and analysis of pulses in real time, with fast measurement response and feedback provided with its FPGA-based decision-block architecture. Applications include NMR/EPR, device characterization, computing, communications, and sensing. With direct to RF/u W capability, it eliminates the need for complicated up/down converting units and requires no IQ alignments. It can be scaled to thousands of coherent channels, and its advanced signal processing engine has the capability of analyzing up to 10 frequency multiplexed readout lines.



Radar and Electronic Warfare - The Proteus is an ideal tool for real-time waveform generation and analysis up to and including X-band. The transceiver allows for real-time closed loop analysis for fast feedback systems such as radar target generation and adaptive electronic warfare systems. The scalable, multi-channel, coherent, deterministic waveform playout capability allows for the generation of multiple active emitters, while its 2GHz of bandwidth allows for the easy creation of background electromagnetic emissions.



Next Generation Wireless Communications Systems - When designing, developing, and manufacturing new wireless systems - based on technologies such as multiple-input and multiple-output (MIMO) antenna matrices and orthogonal frequency-division multiplexing (OFDM) - we built the Proteus on a scalable, wide bandwidth (2GHz) architecture, with high-performance RF DAC/ADC (EVM better than -50dBc) that is compatible with MATLAB. This allows you to create, model, then transfer waveforms or sequences of waveforms to the Proteus for real world testing.



Generate any Imaginable Scenario - Proteus has an innovative hardware-based, task-oriented programming system for complex waveform sequences. You can generate and download waveforms simultaneously and stream data directly to the FPGA (bypassing the memory) at speeds of up to 4GS/s. A full and easy-to-program digital subsystem of up and down converters along with finite impulse response filters and FFT and multiple real-time averaging blocks make the Proteus AWT one of the most comprehensive measurement solutions available.

Modular RF Amplifiers

These amplifiers, combined with Tabor's RF arbitrary waveform generators or Lucid Signal Generators can provide output power of up to 28dBm. With a very small footprint, these ultra-wideband (20GHz) amplifiers are designed for high-frequency, high-power signal amplifications. They are an ideal amplifier to compliment any signal source that needs an extended power boost for demanding applications.



| MODEL | TE3201 | TE3202 | A10200 |
|-----------------|--------------|--------------|-----------------|
| Channels | 1 | 2 | 1 |
| Frequency Range | 100kHz-20GHZ | 100kHz-20GHZ | 100kHz-20GHZ |
| Gain | 10dB | 10dB or 20dB | 20 |
| P1dB | 27dBm | 27dBm | 27dBm |
| Noise Figure | 9dB | 9dB | 9dB |
| Psat | 30dBm | 30dBm | 30dBm |
| Connectivity | PXI Hybrid | | In-Line Snap-On |

PXI & PCI Signal Amplifiers

Tabor Electronics' amplifiers produce high voltages by converting the supply rails to voltage suitable for signals up to 180Vp-p. They operate in conjunction with Tabor's Waveform Generators thus providing the ultimate solution for PXI, PCI and bench, high-voltage, wideband applications.



| MODEL | TE3180 | TE3222 | TE3322 |
|------------------------|----------------|------------------|------------------|
| Channels | 1 | 1 | 1 |
| Max Amplitude | 180Vp-p | 20Vp-p | 20Vp-p |
| Large Signal Bandwidth | 300kHz | 20MHz | 20MHz |
| Small Signal Bandwidth | 1MHz | 50MHz | 50MHz |
| Max. Output Current | 150mA | 200mA | 200mA |
| Input Impedance | 50Ω | 50Ω 1MΩ | 50Ω 1MΩ |
| Output Impedance | 0.1Ω | 50Ω 1MΩ 600Ω | 50Ω 1MΩ 600Ω |
| Gain | 20 (or custom) | 10 (or custom) | 10 (or custom) |
| Transition Time | <1.5μs | <22ns | <22ns |
| Connectivity | PXI Hybrid | PXI Hybrid | PCI |

Modular Signal Amplifiers

Tabor Electronics' amplifiers produce high voltages by converting the supply rails to voltage suitable for signals up to 180Vp-p. They operate in conjunction with Tabor's Waveform Generators thus providing the ultimate solution for PXI, PCI and bench, high-voltage, wideband applications.



| MODEL | A10150 | A10160 |
|------------------------|-----------------|----------------|
| Channels | 1 | 1 |
| Max Amplitude | 16Vp-p 20Vp-p | 34Vp-p |
| Large Signal Bandwidth | 150MHz | 30MHz |
| Small Signal Bandwidth | 200MHz | 45MHz |
| Max. Output Current | 250mA | 750mA |
| Input Impedance | 50Ω | 50Ω |
| Output Impedance | 50Ω | 2.5Ω |
| Gain | 5 (or custom) | 10 (or custom) |
| Transition Time | <2.6ns | <10ns |
| Connectivity | Snap-On | Snap-On |

Arbitrary Waveform Generators

Wonder Wave Series

This series combines two technologies. While being a true, memory-based AWG device, with all the memory management capabilities needed to create complex waveforms, it also implements a direct digital synthesizer (DDS), enabling many standard modulation types and frequency agility capabilities.



| MODEL | WW5064 | WW1074 | WW2074 |
|------------------------------------|---|-----------------------|----------------------------------|
| Channels | 4 | 4 | 4 |
| Waveform Type | Standard, Arbitrary, Pulse, Modulated and Sequenced | | |
| Max. Sample Clock Rate | 50MS/s | 100MS/s | 200MS/s |
| Memory Size | 512k (1M option) | 1M (2M/4M option) | 1M (2M/4M option) |
| Memory Management | 2k Segments; 4k Steps; 1M Loops | | 10k Segments; 4k Steps; 1M Loops |
| Vertical Resolution | 16 bits | | |
| Max Frequency (Sine/Square/others) | 25MHz / 15MHz / 7.5MHz | 50MHz / 25MHz / 15MHz | 80MHz / 50MHz / 25MHz |
| Max Amplitude (into 50Ω) | 10Vp-p | | |
| Transition Time (typ.) | <4ns | | |
| Display | User Friendly 3.8" color LCD Display | | |
| Remote Programming | Full IVI driver (C++, CVI, LabView), MATLAB and ArbConnection | | |
| Connectivity | LAN, USB, GPIB | | |

Pulse Arbitrary Generators

Pulse Master Series

Tabor Electronics' single or dual-channel pulse and waveform generators offer a complete array of pulse, standard, arbitrary, sequenced, and modulated waveforms with unmatched performance. Their smart, compact, 2U half-rack-width footprint allows you to save substantial benchtop or rack space, while benefiting from high performance, bandwidth, signal integrity, and reliability, with the flexibility to adapt to a full spectrum of applications.

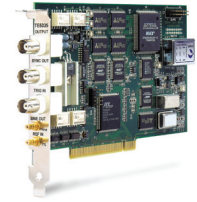


| MODEL | PM8571A | PM8572A |
|------------------------------------|---|---------------------------------------|
| Channels | 1 | 2 |
| Waveform Type | Standard, Arbitrary, Pulse and Modulated | Standard, Pulse, Modulated, Arbitrary |
| Period Range | 20ns to 1000s | 20ns to 1000s |
| Pulse Width Range | 8ns to 10s | 8ns to 10s |
| Timing Resolution | 10ps | 10ps |
| Trigger Jitter | <100ps | <100ps |
| Max Frequency (Sine/Square/others) | 100MHz / 62.5MHz / 31.25MHz | 100MHz / 62.5MHz / 31.25MHz |
| Max. Sample Clock Rate | 250MS/s (typ 300MS/s) | 250MS/s |
| Memory Size | 1M (2M/4M option) | 1M (2M/4M option) |
| Vertical Resolution | 16 bits | 16 bits |
| Modulation | AM, FM, FSK, ASK, PSK, Amplitude and Frequency Hop, (n)PSK, (n)QAM, PWM and Sweep | |
| Max Amplitude (into 50Ω) | 16Vp-p (20Vp-p option) | 16Vp-p (20Vp-p option) |
| Transition Time (typ.) | <4ns | <4ns |
| Display | User Friendly 3.8" color LCD Display | |
| Remote Programming | Full IVI driver (C++, CVI, LabView), MATLAB and ArbConnection | |
| Connectivity | LAN, USB, GPIB | |

PXI & PCI Arbitrary Waveform / Function Generators

TE-AWG Series

The 5000 Series offers excellent performance in the PXI, cPXI, and PCI class. It combines two technologies (DDS&ARB), making use of the best qualities from each of these technologies to create complex waveforms on one hand while generating all the standard functions and modulation formats on the other.



| MODEL | TE5200 TE5325 | TE5201 TE5300 | TE5251 TE5351 |
|------------------------------------|---|-----------------------|---|
| Channels | 1 | 1 | 1 |
| Waveform Type | Standard, Arbitrary, Pulse, Modulated and Sequenced | | |
| Max. Sample Clock Rate | 50MS/s | 125MS/s | 250MS/s |
| Memory Size | 1M | 2M | 2M |
| Memory Management | 4k Segments; 4k Steps; 128k Loops | | 10k Segments; 4k Steps; 1M Loops |
| Vertical Resolution | 14 bits | 14 bits | 16 bits |
| Modulation | AM, FM, Arbitrary FM, FSK, Sweep | | AM, FM, FSK, ASK, Freq. & Amp. Hop, Sweep |
| Max Frequency (Sine/Square/others) | 25MHz / 15MHz / 7.5MHz | 50MHz / 30MHz / 15MHz | 100MHz / 62.5MHz / 31.25MHz |
| Max Amplitude (into 50Ω) | 8Vp-p 10Vp-p | 8Vp-p 10Vp-p | 10Vp-p |
| Transition Time (typ.) | <8ns | <6ns | <4ns |
| Remote Programming | Full IVI driver (C++, CVI, LabView), MATLAB and ArbConnection | | |
| Connectivity | PXI Hybrid PCI | PXI Hybrid PCI | PXI Hybrid PCI |

Signal Amplifiers

Tabor Electronics' designed a line of wideband amplifiers to operate in conjunction with its series of waveform generators, thus providing the ultimate solution for high-voltage, wideband applications – enabling both complex signals as well as high-voltage throughput.



| MODEL | 9250A | 9260A | 9100 9200 | 9100A 9200A 9400A |
|------------------------|--------------------------|--------------------------|----------------|-----------------------|
| Channels | 2 Single or Differential | 2 Single or Differential | 1 2 | 1 2 4 |
| Max Amplitude | 20Vp-p | 34Vp-p | 300Vp-p | 400Vp-p |
| Large Signal Bandwidth | 15MHz | 30MHz | 500kHz | 500kHz |
| Small Signal Bandwidth | 30MHz | 45MHz | 1.5MHz | 1.5MHz |
| Max. Output Current | 200mA | 750mA, 1A Peak | 150mA 100mA | 120mA 100mA 50mA |
| Input Impedance | 50Ω 75Ω 1MΩ | 50Ω 75Ω 1MΩ | 1MΩ | 1MΩ |
| Output Impedance | 50Ω 75Ω 600Ω | 2.5Ω 50Ω 75Ω | 0.1Ω | 0.1Ω |
| Gain | 10 (or custom) | 10 (or custom) | 50 (or custom) | 50 (or custom) |
| Transition Time (typ) | <22ns | <10ns | <1.5μs | <1μs |
| Connectivity | Bench | | | |



Simulate, Stimulate, Test...

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