

- Range: 50mS/Sec to 100MS/s
- Time: 1mS to 1000 Sec, 7 digits, $\pm 0.1\%$
- Advance: Automatic, triggered, gated or software command
- Marker
 - Output and Level: Same as SYNC output.
 - Position: Programmable for selected frequency

Operating Modes

- Normal: Continuous waveform is generated
- Triggered: Each input cycle generates a single output cycle
- Gated: External signal enables generator. First output cycle synchronous with the active slope of the triggering signal. Last cycle of output waveform always completed
- External Burst: Preset number of up to 128K cycles stimulated by an internal, or external. This mode is not available in Sequencer mode

Trigger Sources

- External
 - Input: Front panel BNC
 - Level: TTL
 - Slope Positive or negative, programmable
 - Frequency: 5 MHz to DC
- Internal
 - Range: 100 mHz to 2 MHz
 - Resolution: 7 digits
 - Accuracy: 0.1%
- Backplane: TTL Trig0 through TTL Trig7, STAR
- Software: SCPI command

System Delay

- Trigger to waveform out: 1 Sample Clock +120 ns

Standard Waveforms Library

- Waveforms: Sine, Triangle, Square, Pulse, Ramp, Sinc, Gaussian Pulse, Exponential decay/ Rise Pulse, Noise, DC
- Frequency Range: Waveform dependent

Arbitrary Waveform

- Waveform Memory: 1 M points, 2 M points optional
- Memory Segmentation
 - Number of Segments: 1 to 64K (128K with 2Mb option)
 - Min Segment Size: 16 points
 - Memory Interleave: 4 (All trace lengths must be multiples of 4)
 - Vertical Resolution: 14 bits (16,384 points)
- Sine Wave Performance

Sine wave performance is measured using the maximum sample clock rate, at 5Vp-p, the maximum amplitude resolution of the DAC (14-bit) and without filters. Spectrum analyzer settings: Start frequency =0 MHz; stop frequency =50 MHz (Nyquist frequency)
- Sine wave Total Harmonic Distortion: 0.3% to 1 MHz

- Harmonics and non-related spurious
 - Below 10 MHz
 - ≤ -55 dBc for carrier frequencies <1 MHz
 - ≤ -40 dBc for carrier frequencies <5 MHz
 - ≤ -25 dBc for carrier frequencies <25 MHz

Sequenced Arbitrary Waveform

- Operation: Permits division of the memory bank into smaller segments. Segments may be linked, and repeated in user-selectable fashion to generate extremely long waveforms
- Advance Modes
 - Automatic Sequence Advance: No triggers required to step from one segment to the next. Sequence is repeated continuously through a pre-programmed sequence table.
 - Stepped Sequence Advance: Current segment is sampled continuously, external trigger advances to next programmed segment. Control input is TRIG IN connector
 - Single Sequence Advance: Current segment is sampled to the end of the segment including repeats and idles there. Next trigger advances to next segment. Control input is TRIG IN connector
 - Mixed Sequence Advance: Each step of a sequence can be programmed to advance either a) automatically (Automatic Sequence Advance) ,or b) with a trigger (Stepped Sequence Advance)
- Advance Source: External, Internal, or soft trigger
- Sequencer steps From: 1 to 4096
- Segment loops From: 1 to 128 K

Outputs

- Waveform Output
 - Connector: Front panel BNC
 - Stand-by: Output Off or Normal
 - Impedance: 50 Ω , $\pm 1\%$
 - Protection: Protected against temporary short to case ground
 - Amplitude:
 - ◆ Range: 80 mVpp to 8 Vpp, at 50 Ω load; 160 mVpp to 16 Vpp, for open circuit
 - ◆ Resolution: 3.5 digits
 - ◆ Accuracy (1 KHz):
 - ◇ $\pm(1\%+25$ mV), 1.000 V to 10 Vpp
 - ◇ $\pm(1\%+5$ mV), 80 mV to 999.9 mVpp
 - Offset: Offset is attenuated with amplitude
 - ◆ Range: 0 to ± 3.6 V, amplitude dependent
 - ◆ Resolution: 22 mV
- Accuracy
 - ± 4 V window $\pm(1\%$ of reading +1% if amplitude +2 mV)
 - ± 400 mV window $\pm(1\%$ of reading +1% if amplitude +200 μ V)
 - Filters: 25 MHz and 50 MHz, 7-pole elliptic

Square Wave, Pulse

- Rise/Fall time: <10 ns, 10% to 90% of amplitude
- Aberration: < 5%

- SYNC/Marker Output

Description: Provides dual functionality. All functions and modes, this output generates sync pulse, which is synchronous with the output waveform. In FM and sweep modes only, this output generates a marker having properties similar to the sync pulse output

 - Connector: Front panel BNC
 - Impedance: 50 Ω , $\pm 1\%$
 - Level: >2V into 50 Ω , 4 V nominal into 10K.
 - Protection: Protected against temporary short to case ground
 - Position: Point 0 to n, Programmable with 4-point resolution

Sine Output

- Description: An output that is directly derived from the sample clock generator and has an output frequency equal to the programmed sample clock frequency. This output generates sine waveforms that corresponds to sample clock setting, including modulated waveform, such as FM, sweep and FSK
- Connector: Front panel SMB
- Impedance: 50 Ω , $\pm 1\%$
- Level: 1 V into 50 Ω
- Protection: Protected against temporary short to case ground
- Source: Sample clock frequency
- Frequency Range and Resolution: Same as Sample clock
- Flatness: -3 dB at 100 MHz
- Total Harmonic Distortion: <40 dBc to 1 MHz
- Harmonics & non-related spurious:
 - ≤ 50 dBc to 10 MHz
 - ≤ 38 dBc to 100 MHz

Trigger Input

- Connector: Front panel BNC
- Impedance: 10 K Ω , $\pm 5\%$
- Threshold Level: TTL
- Minimum Pulse Width: 20 ns
- Slope: Positive or negative going edge

10 MHz Reference Input

- Connector: Front panel SMB
- Impedance: 10 K Ω , $\pm 5\%$
- Threshold Level: TTL
- Duty Cycle: 50%, $\pm 5\%$

Ordering Information

- **TE-5201**
100 MS/s Arbitrary Waveform Generator for PXI

