



- Single / Dual Channel 2.3GS/s,14 Bit waveform generator, configurable as separate or synchronized channels
- Inter-channel control from -3ns to +3ns with 10ps resolution
- · 1GHz sine and 500MHz square waves
- · 16M waveform memory, 32M memory optional
- · 3 selectable output paths:
  - 2Vp-p into 50Ω with 700MHz bandwidth, Differential DC output
  - 4Vp-p into  $50\Omega$  with 350MHz bandwidth, Differential DC output
  - -20 to +10 dBm into  $50\Omega$  with >1GHz bandwidth, RF AC output
- · AM, FM, FSK, PSK, ASK, Amp. Hop, Freq. Hop, Sweep & Chirp
- · Powerful pulse composer for analog, digital and mixed signals

# 2.3GS/s Single/Dual Channel Arbitrary Waveform Generators

- 16 Bit/Ch. LVDS Parallel / Separate Outputs (Option D)
- Smart trigger allows: trigger hold-off, detect <=> pulse width, as well as wait-for-waveform-end or abort waveform and restart
- Advanced sequencer for step, loop, nest and jumps scenarios
- Two differential markers per channel with programmable positions, width and levels
- · Two instrument synchronization to form a four-channel system
- User friendly 4" color LCD display
- · Remote control through LAN, USB and GPIB
- Store/recall capability on disk-on-key or 4GB internal memory
- · LXI Class C compliant

The WX2181/2B, 2.3GS/s Single / Dual Channel Arbitrary Waveform Generator, offers unrivaled performance, even when compared to instruments designed to generate fewer types of signals or higher sampling rates. Its affordable footprint saves space and cost without compromising bandwidth and signal integrity.

### **Universal Waveform Source**

Aside from its natural ability to generate arbitrary shapes with waveform granularity of 1 point, the WX2181/2B can also be used as a full-featured standard, modulation or pulse generator to solve various applications. Equipped with 2.3GS/s 14-bit clock and 16M points (32M optional) memory, the WX2181/2B can generate literally any waveform, short or long, at frequencies up to 1GHz with 8 digits of resolution, resulting in the highest precision signal creation and regeneration without compromising signal fidelity or system integrity.

### **Signal Integrity and Purity**

One of the most important requirement in today's testing and measurement applications is high signal quality. With a typical SSB phase noise of <-115dBc at 100MHz, and <-95dBc at 1GHz, at 10 kHz carrier offset and with exceptionally good SFDR of <-70dBc at 1GHz carrier, Tabor's WX2181/2B unique platform delivers one of the best quality signals available on the market today, answering the ever-growing demand for clear and precise signals.

### **Common or Separate Clocks**

Need a dual channel unit, a single channel unit... why choose? With the new WX2182B you can have it both ways. The WX2182B has two output channels, which can either operate independently, or synchronized to share the same sample clock source. As two separate channels, one has the advantage of having two separate instruments in one box, with each having the ability to be programmed to output different function

shapes, frequency, amplitude levels and/or to operate in different run modes. Alternatively, the advantage of having two synchronized channels with less than 10ps skew and skew control is very significant in applications that require an accurate and controlled phase between the two channels, which is ideal for many X-Y modes and I&Q output applications.

### **DC or AC Coupled Outputs**

Have a requirement for different output paths in your lab? Great! The WX2181/2B offers two single or differential ended DC coupled and one single ended AC coupled output amplifiers: 2Vp-p into  $50\Omega$  with 700MHz bandwidth, for applications demanding optimized transitions and aberrations; 4Vp-p into  $50\Omega$  with 350MHz bandwidth, for applications demanding high voltage or -20 to +10dBm path for applications requiring bandwidth and flatness for frequencies as high as 1GHz.



2.3GS/s Single/Dual Channel Arbitrary Waveform Generators



### Powerful Segmentation and Seguencing

Solving almost every complex application, powerful segmentation and sequencing produces a nearly endless variety of complex waveforms. The waveform memory can be divided into multiple waveform segments and sequenced in user-selectable fashion to create complex waveforms that have repeatable segments, jump and nest, saving you precious memory space. The WX2181/2B also allows you to generate up to 1000 sequence scenarios and sequence between them to generate an even higher level of flexibility in waveform creation.

### **Dynamic Segment / Sequence Control**

Working in the real-time world and need fast waveform switching? The WX2181/2B has a rear panel control designed specifically for that. Having the dynamic control feature, in effect, can serve as replacement of the sequence table where the real-time application can decide when and for how long a waveform will be generated. For much more complex applications, this same input may serve as a dynamic switch for complete sequences, creating real-life scenarios for real-time applications.

### Pulse / Pattern Creation

Generating complex pulse trains has never been easier. The Pulse Composer is a powerful built-in tool that converts the WX2181/2B to a very sophisticated Pulse/ Pattern Generator, allowing to create literally any complex pulse train / pattern, whether it's a single pulse, multi-level, linearpoints, initialization or preamble pattern definition, arbitrary bit design, user-defined or even standard random patterns with programmable resolution, so it doesn't matter if your application is radar communications. nanotechnology or serial bus testing, the pulse/pattern composer is the right tool for your application. Moreover, all the WX2181/ 2B advanced trigger modes are applicable. hence one can choose to use the "step" mode to advance every bit independently or the "once" mode to advance a complete data block in one trigger event, enabling even more applications, such as trigger, clock and data protocols.

### Multi-Level and PAM(n) Signals

The WX2181/2B's pulse composer enables up to 2Gbit/s data rate generation, utilizing either NRZ and RZ modes (minimum transition times) which is ideal especially for multi level and PAM(n) applications such as, LED (lightemitting diodes), CAN, QPHY, FlexRay or simulating and testing Ethernet environment, whether it's 100Mbit/s (100BASE-T), the later gigabit Ethernet (1000BASE-T) or even the latest 802.3an standard (10GBASE-T), which utilizes PAM-16.

### **Smart Trigger**

Until now, you've been forced to trigger on a specific event. Tabor's all-new SmarTrigger feature was designed to enhance the trigger capability and facilitate wider flexibility of a specific pulse event. It allows triggering on either a pulse having a larger pulse width than a programmed time value (<time), a pulse having a smaller pulse width than a programmed time value (>time), or even on a pulse having a pulse width between two limits (time). In addition, the SmarTrigger has a hold-off function, in which the output is held idle after the first trigger and starts a waveform cycle only with the first valid trigger after a holdoff interval has lapsed, allowing you to solve endless "negotiation" scenarios.

### **Programmable Deferential Markers**

The WX2181/2B is equipped with two programmable deferential markers for each output channel. Differential simply means outstanding signal integrity for high frequencies, whereas the programmability allows you to set position, width, delay and amplitude for any required peripheral triggering need. While bench usage enables setting only one marker position, you can set multiple markers and program different marker properties for each transition instance remotely, allowing various triggering profiles.

### **Digital Outputs (Option D)**

In today's world, many applications require multiple digital outputs or a parallel digital interpretation of the analog outputs. With the new digital option the WX now offers up to 16 programmable digital outputs per channel, up to extra 32M of digital memory, up to 1.15Gb/s of data rate and controllable skew between outputs. Combined with Tabor's dedicated digital signal amplifier, WXD1, the WX is, by far, the best mixed signal source on the market to meet all of today>s requirements.

### **4-Channel Capability**

Need more than two channels to drive your application? With two WX2182B you can reach up to 4 synchronized channels system using a Master-Slave arrangement, allowing users to benefit from the same high quality performance even for multi-channel needs.

### Easy to Use

Large and user-friendly 4" backlit color LCD display facilitates browsing through menus, updating parameters and displaying detailed and critical information for your waveform output. Combined with numeric keypad, ten quick-link function & run mode buttons, cursor position control and a dial, the front panel controls simplify the often complex operation of an arbitrary waveform generator.

### **Multiple Environments to Write Your Code**

Model WX2181/2B comes with a complete set of drivers, allowing you to write your application in various environments such as: Labview, CVI, C++, VB, and MATLAB. You may also link the supplied dll to other Windows based API's or, use low-level SCPI commands (Standard Commands for Programmable Instruments) to program the instrument, regardless if your application is written for Windows, Linux or Macintosh operating systems.



2.3GS/s Single/Dual Channel **Arbitrary Waveform Generators** 



### Specification

### CONFIGURATION

Output Channels 1/2, Synchronized/fully separated

### STANDARD WAVEFORMS

Type: Sine, triangle, square, ramp, pulse, sin(x)/x, exponential

rise, exponential decay, gaussian, noise and DC.

Frequency Range:

10kHz to 1GHz Sine Square, Pulse 10kHz to 500MHz All others 10kHz to 250MHz

### SINE

Start Phase: 0 to 360° PhaseResolution: 0.1 Harmonics Distortion (typ.):

 $3Vpp^{HV}$ 0dBm<sup>AC</sup> 1Vpp<sup>t</sup> 375MHz to 500MHz <-35dBc<sup>(1)</sup><-35dBc<sup>(1)</sup><-50dBc 

(1) Measured with 1GHz lowpass fiter

Non-Harmonics Distortion (typ.):

1MHz to 100MHz <-80dBc 100MHz to 250MHz <-75dBc 250MHz to 500MHz <-70dBc 500MHz to 1GHz <-65dBc

SSB Phase Noise (10kHz offset):

1MHz Carrier <-120dBc/Hz 10MHz Carrier <-118dBc/Hz 100MHz Carrier <-115dBc/Hz 250MHz Carrier <-108dBc/Hz 500MHz Carrier <-100dBc/Hz <-95dBc/Hz 1GHz Carrier

Flatness (AC Path):

Cross Range ±0.5dB

### **PULSE**

**Pulse Mode:** Single or double, programmable Polarity: Normal, inverted or complement

Period: 2ns to 1.6s Resolution: 500ps Pulse Width: 1ns to 1.6s

Rise/Fall Time:

Fast DC Path 600ps (typical < 500ps) HV Path 1ns (typical < 900ps) Linear 1ns to 1.6s

Delay: 1ns to 1.6s Double Pulse Delay: 1ns to 1.6s

Amplitude: Range

DC Path 50 mVp-p to 2 Vp-p into  $50 \Omega$ HV Path 100mVp-p to 4Vp-p into  $50\Omega$  Levels

Low Level -2V to +1.95V High Level -1.95V to +2V

### NOTES:

1. All pulse parameters, except rise and fall times, may be freely programmed within the selected pulse period provided that the ratio between the period and the smallest incremental unit does not exceed the ratio of 16,000,000 to 1.

2. Rise and fall times, may be freely programmed provided that the ratio between the rise/fall time and the smallest incremental unit does not exceed the ratio of 1,000,000 to 1.

3. The sum of all pulse parameters must not exceed the pulse period setting.

### **PULSE / PATTERN COMPOSER**

#### **MULTI-LEVEL / LINEAR-POINTS**

Number of Levels: 1 to 1000 **Dwell Time:** 500ps to 10s Memory: 100k Amp. Resolution: 4 digits Time Resolution: 500ps

### **PATTERN**

Pattern Source: PRBS or user-defined

PRBS Type: PRBS7, PRBS9, PRBS11, PRBS15, PRBS23, PRBS31,

**USER** 

Data Rate: 10Bit/s to 500MBit/s

**Number of Levels: 2, 3, 4, 5** High/Low Levels: ±2.5V Resolution: 4 digits Loops: 1 to 1e6 Preamble: 1 to 16e6 Length: 1 to 16e6

### PAM (PULSE AMPLITUDE MODULATION)

Data Rate: 10Mbit/s to 2Gbit/s

**PAM Range:** 2 to 1000 Pattern Memory: 16Mbit Resolution: 1 bit (TBD)

### ARBITRARY WAVEFORMS

Sample Rate: 10MS/s to 2.3GS/s (2.5GS/s typ.)

Vertical Resolution: 14 bits

Waveform Memory: 16M points standard, 32M points optional

Min. Segment Size:

Standard 384 points Option 1 & D 192 points

Resolution: 32 points (16 point with opt. 1 &D)

No. of Segments: 1 to 16k Waveform Granularity: 1 point

Dynamic control: Software command or rear

panel segment control port Jump Timing: Coherent or asynchronous

### SEQUENCED WAVEFORMS

Multi Sequence: 1 to 1,000 unique scenarios

Sequencer Steps: 1 to 16k steps. Segment Duration: 32ns, min.

Segment Loops: 1 to 1M cycles, each segment Sequence Loops: 1 to 1M ("Once" mode only) Step Advance Modes: Continuous, once (x "N") and

stepped

#### **SEQUENCED SEQUENCES**

Sequence Scenarios: 1 Scenario

**Dynamic Control:** Software command or rear

panel sequence control port

Table Length: 1 to 1k steps

Advance Control: Continuous, once and stepped

Sequence Loops: 1 to 1,000,000 cycles

### **MODULATION**

### **COMMON CHARACTERISTICS**

Carrier Waveform: Sine

Carrier Frequency: 10kHz to 1GHz

Modulation Source: Internal

Modulation Shape: Sine, square, triangle, ramp Modulation Freq.:  $(CW/6) > (M.F) > (30e^{-6}xCW)$ 

**Deviation Range: CW/2** 

### **FSK / FREQUENCY HOPPING**

2 to 10,000 (<CWx10.24e<sup>-3</sup>) Hop Table Size:

Hop Type: Fast or Linear

Dwell Time Mode: Fixed or programmable per step

**Dwell Time:** 2ns to 10s 2ns

**Dwell Time Res.:** 

### SWEEP / CHIRP

Sweep Type: Linear or log Sweep Direction: Up or down

Sweep Time: (9/High Freq.)>(S.T)>(50e<sup>3</sup>/High Freq.)

Modulation Shape: Pulse

**Pulse Repetition:** 

Range 100ns to 2s Resolution 3 digits Accuracy 100ppm

AM

Modulation Shape: Sine, square, triangle, ramp **Modulation Freq.:**  $(CW/9) > (M.F) > (CW/50e^3)$ Modulation Depth: 0.1 to 100%

**ASK / AMPLITUDE HOPPING** 

Hop Table Size: 2 to 10,000 (<CWx10.24e<sup>-3</sup>) Resolution Maximum amplitude/4096 Fast or Linear

Hop Type:

**Dwell Time Mode:** Fixed or programmable per step

**Dwell Time:** 2ns to 10s Resolution 2ns



2.3GS/s Single/Dual Channel **Arbitrary Waveform Generators** 



### Specification

(n)PSK and (n)QAM

Modulation Type: PSK, BPSK, QPSK, OQPSK,

PI/4 DQPSK, 8PSK, 16PSK, 16QAM, 64QAM, 256QAM

and User Defined On/Off

**Carrier Control:** Carrier Frequency: 100kHz to 65MHz

Symbol Rate Range:

Carrier On 100kHz to 65MHz Carrier Off 100kHz to 500MHz

Symbol Accuracy:1ppm Table Size: 2 to 10,000

**I-Q Parameters:** 

TRD Gain imbalance Offset imbalance **TBD** TBD Phase imbalance

### **COMMON CHARACTERISTICS**

**FREQUENCY** 

Resolution: 8 digits

Accuracy/Stability: Same as reference

### **ACCURACY REFERENCE CLOCK**

Internal 1 ppm from 19°C to 29°C; 1ppm/°C below 19°C or

above 29°C; 1 ppm/year

aging rate

External Same as accuracy and stability of the external ref.

### **OUTPUTS**

### **MAIN OUTPUTS**

Coupling: DC-coupled, or AC-coupled Connectors: Front panel SMAs Impedance: 50Ω nominal, each output Protection: Protected against temporary short to case ground

### **DC-COUPLED**

Type: Single-ended or differential

Resolution: 4 digits

Accuracy:  $\pm$ (3% +5 mV), offset = 0V

Overshoot: 5%, typical

DC PATH

Rise/Fall Time: <600ps (typical <500ps)

**Amplitude Range:** 

50mVp-p to 2Vp-p<sup>2</sup> Single-ended Differential 100mVp-p to 4Vp-p

### **HV PATH**

Rise/Fall Time: 1ns (typical < 900ps)

**Amplitude Range:** 

50mVp-p to 4Vp-p. Single-ended 100mVp-p to 8Vp-p Differential

\* Double into high impedance

### **OFFSET**

Offset Range: -1.5V to + 1.5V into  $50\Omega$ 

Offset Resolution: 4 digits Offset Accuracy:  $\pm (5\% + 5\text{mV})$ 

### RF, AC-COUPLED

Type: Single-ended

Amplitude Range: -20dBm to +10dBm into 50Ω,

Resolution: 4 digits

(3% + 0.5 dBm)Accuracy: Bandwidth: 1GHz

### **MARKER OUTPUTS**

Number of Markers: Two markers per channel Type: Differential (+) and (-) outputs

Connectors:

Skew Between Markers: 100ps, typical

Impedance: 500 Amplitude Voltage:

OV to 1.25V, single-ended; Window 0V to 2.5V, differential

Low level 0V to 0.8V, single-ended; 0V to 1.6V, differential

High level 0.5V to 1.25V, single-ended; 0V to 2.5V, differential

Resolution: 10mV

Accuracy: 10% of setting

Width control: 4 SCLK to segment length; 2 SCLK with option 1

### Position control:

Range 0 to segment length Resolution 4 points (2 point with option 1) 4ns±1/2 clock (Output to marker)

Initial delay: Variable delay:

Separate for each channel Control

Range

0 to 3ns

Resolution 10ps

 $\pm (10\% \text{ of setting } +20\text{ps})$ Accuracy

Rise/Fall Time: <1ns, typical

### **DIGITAL OUTPUTS (OPTION D)\*\***

Number of Bits: Up to 32 (16 per analog channel) Type: Differential (+) and (-) outputs Connectors: High speed I/O receptacle,

68-pin VRDPC Source: Channel 1 or channel 2

Skew Between Bits: 100ps, typical

Level: IVDS Impedance: 1000 Max. Data Rate: 1.15Gb/s

Pattern Memory:

Up to 16MWord per channel Dedicated Up to 16MWord per channel Parallel

arbitrary memory

\*\* Replaces the markers

### SYNC OUTPUT

Connector: Front panel SMA Channel 1 or channel 2 Source: Single ended

Type: Waveform Type:

32 points width: Pulse 16 points with opt. 1/D

**WCOM** Waveform complete Impedance: 500

Amplitude: 1V; doubles into high impedance

Variable Position Control:

Range 0 to segment length

Resolution 32 points (16 point with opt. 1/D)

Rise/Fall Time 2ns, typical

Variable Width control:

32 points (16 points with opt. Range

1/D) to segment length 32 points (16 point with opt, 1/D)

**INPUTS** 

Resolution

### TRIGGER INPUT

Connector: Front panel SMA

Input Impedance: 10k0

Polarity: Positive, negative, or both

Damage Level: ±20Vdc Frequency Range: 0 to 15MHz **Trigger Level Control:** -5V to 5V Range

Resolution 12 bit (2.5mV) Accuracy  $\pm$ (5% of setting + 2.5mV)

Sensitivity 0.2Vp-p Min. Pulse Width: 10 ns

### **EVENT INPUT**

Connector: Rear panel BNC

Input Impedance: 10kΩ

Polarity: Positive, negative or either

Damage Level: ±20Vdc Frequency Range: 0 to 15MHz **Trigger Level Control:** 

-5V to 5V Range Resolution 12 bit (2.5mV)

Accuracy  $\pm$ (5% of setting + 2.5mV) Sensitivity 0.2 Vp-p minimum

Min. Pulse Width: 10 ns

### SEQUENCE/SEGMENT CONTROL INPUT

Connectors: Rear panel D-sub, 8 bit lines Input Impedance: 10kΩ

Input Level: TTI

### **EXTERNAL REFERENCE INPUT**

Connector: Rear panel BNC 10MHz to 100MHz Input Frequency:

Input Impedance: 50Ω

Voltage Swing: -5dBm to 5dBm Damage Level: 10dBm



2.3GS/s Single/Dual Channel **Arbitrary Waveform Generators** 



### Specification

### **EXTERNAL SAMPLE CLOCK INPUT**

Connector: Rear panel SMA

Input Impedance:  $50\Omega$ 

Voltage Swing: Input Frequency:

OdBm to 10dBm 1GHz to 5GHz (Double the

**Clock Divider:** 

internal clock) 1/1, 1/2, 1/4, 1/256, separate for each channel

Damage Level: 15dRm

**RUN MODES** 

Continuous:

A selected output function shape is output continuously. Self Armed: No start commands are

Armed:

required to generate waveforms. The output dwells on a DC level and waits for an enable command and then the output waveform is output continuously; An abort command turns off

the waveform.

Triggered:

A trigger signal activates a single-shot or counted burst of output waveforms and then the instrument waits for the next

trigger signal.

**Normal Mode** 

The first trigger signal activates the output; consecutive triggers are ignored for the duration of the output waveform.

The first trigger signal activates

**Override Mode:** 

Gated:

the output; consecutive triggers restart the output waveform regardless if the current waveform has been completed or not. A waveform is output when a gate signal is asserted. The waveform is repeated until the gate signal is de-asserted. Last

period is always completed. **Burst:** Upon trigger, outputs a Dual or multiple pre-programmed

number of waveform cycles from 1 through 1M.

### TRIGGER CHARACTERISTICS

### **EXTERNAL**

Source: Channel 1, channel 2, or both Connector: **SMA** 

Input Impedance: 10kΩ

Positive, negative, or both Polarity:

Damage Level: ±20Vdc Frequency Range: 0 to 15MHz **Trigger Level Control:** Range -5V to 5V

Resolution 12 bit (2.5mV)

 $\pm$ (5% of setting + 2.5mV) Accuracy 0.2Vp-p

Sensitivity 10 ns, minimum Pulse Width:

System Delay: 200 SCLK periods + 50ns Trigger Delay: Separate for each channel 0 to 8,000,000 SCLK periods Range Resolution 8 points (4 point with opt. 1/D) Same as SCLK accuracy Accuracy Smart Trigger: Detects a unique pulse width Conditioned Trigger: < pulse width, > pulse width

or <>pulse width Pulse Width Range 50ns to 2s

Resolution 2ns

Accuracy

±(5% of setting +20ns) Trigger Hold-off: Ignores triggers for a hold-off

Hold-off range 100ns to 2s Resolution

±(5% of setting +20ns) Accuracy Trigger jitter: 8 SCLK periods;

4 SCLK periods with opt. 1/D

### **INTERNAL**

Source: Common or separate Modes: Timer Waveform start to waveform start Delaved Waveform stop to waveform start Timer:

Range 400ns to 2s Resolution 3 digits Accuracy 100ppm

Delay Range

152 to 8,000,000 SCLK periods Even numbers, divisible by 8 Resolution (4 with opt. 1/D)

### **MANUAL**

Source: Soft trigger command from the front panel or remote

### **INTER-CHANNEL SKEW CONTROL**

### **COURSE TUNING**

Initial skew: Control:

200ps

Range 0 to waveform-length points Resolution 8 points (4 point with opt. 1/D) Same as SCLK accuracy Accuracy:

### **FINE TUNING**

Initial skew: Control: Range

200ps

-3ns to +3ns Resolution 10ps

(10% of setting + 20ps) Accuracy:

### TWO INSTRUMENTS SYNCHRONIZATION

Initial Skew: 20ns + 0 to 16 SCLK

(8 SCLK with opt. 1/D)

0 to Waveform length Offset Control: Offset Resolution: 8 SCLK increments (4 SCLK with opt. 1/D)

**Skew Control:** 5ns to 5ns Skew Resolution: 10ps

#### **GENERAL**

Voltage Range: 100VAC to 240VAC Frequency Range: 50Hz to 60Hz

Power Consumption: 150VA

Display Type: TFT LCD, 4 ", 320 x 240 pixels

Interfaces:

**USB** 1 x front, USB host, (A type); 1 x rear, USB device, (B type)

LAN 1000/100/10 BASE-T **GPIB** IEEE 488.2 standard interface

Segment control 2 x D-sub, 9 pin

**Dimensions:** 

315 x 102 x 395 mm (WxHxD) With Feet Without Feet 315 x 88 x 395 mm (WxHxD)

Weight:

Without Package 4.5kg Shipping Weight 6kg

Temperature:

0°C to 40°C Operating Storage -40°C to 70°C

**Humidity:** 85% RH, non condensing Safety: CE Marked, IEC61010-1 EMC: IEC 61326-1:2006

Calibration: 2 years

Warranty (1): 5 years standard

### **ORDERING INFORMATION**

MODEL	DESCRIPTION
WX2181B	2.3GS/s Single Channel Arbitrary Waveform Generator
WX2182B	2.3GS/s Dual Channel Arbitrary Waveform Generator
OPTIONS	
Option 1 <sup>(2)</sup> : Option D <sup>(2)</sup> :	32M Memory (per channel) 16 Bit/Ch. Digital Outputs
(2) Improves timing characteristics as well	

### **ACCESSORIES**

Sync Cable:	Multi-instrument synchronization
S-Rack Mount:	19" Single Rack Mounting Kit
Case Kit:	Professional Carrying Bag
Note:	Options and Accessories must be specified at the time



of your purchase.

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<sup>(1)</sup> Standard warranty in India is 1 year.