



TT-10188 Digital Pulse Distribution Amplifier



Key Features

- DC – 20 MHz Frequency Range
- 16 digital outputs
- Can be used as a 1 pps distribution amplifier
- Alarm indicators for each channel
- Output level TTL or 2.5 V p-p into 50 Ω .
- Input Impedance adjustable from 50 Ω to 2 k Ω
- Output to output skew < 150 ps
- AC and DC power supplies

General Description

The TT-10188 is a digital distribution amplifier designed for digital signals. An input signal is distributed to sixteen output channels. The outputs channels are all isolated from each other, as well as protecting the input signal from any shorts or load changes applied to the outputs. The frequency range extends down to DC. Thus, this amplifier is ideal for 1 pps (pulse per second) signals. It can be used to synchronize up to sixteen instruments to a frequency reference input. The reference input will typically be a 1 pps signal or an OXCO, Rubidium, Cesium or Hydrogen Maser Frequency Standard. Typical frequencies are 1 pps, 5 and 10 MHz, but any frequency from DC to 20 MHz can be used.

Alarms

Every output has LED alarm monitoring. Should the RF level drop on any output, a LED alarm will be raised.

Applications

The TT-10188 Distribution Amplifier is ideal for use in calibration or standard laboratories, space research, satellite systems, communication systems or anywhere where good performance is needed.

Miscellaneous Information

The TT-10188 is a highly reliable unit. The TT-10188 is housed in a fully screened 19" rack mount case and operates from a 115 / 230 VAC supply. The TT-10188 is CE marked for sale within the EEC.

Matched Propagation Delay times

The TT-10188 is ideal for pulse distribution since every output is matched to each other to within a 150 ps Deviation. So the TT-10188 can be used in timing distribution with the satisfaction of knowing the timing parameters will be preserved.

Fast Rise / Fall Times

TT-10188 has very fast rise and fall times of < 1 ns. The TT-10188 will improve the rise time of slow rise-time inputs. For example an input rise time of 25 ns will result in output rise times of < 1 ns (800 ps).

Other Distribution Amplifiers

Precision Test Systems also manufactures the PTS50 and DA series of distribution amplifiers operating from 1 to 100 MHz. The series includes our ultra low phase noise DA1-100-10 distribution amplifier.

TT-10188 SPECIFICATIONS

Specification Parameter	Specification	Comments
Input		
Frequency	DC to 20 MHz	1 pps signals accepted
Impedance	50 Ω to 2 k Ω adjustable	
Input Level	0VDC min, 10 VDC max	
Trigger level	Adjustable from 0.6 V to 5V	+ve trigger. -ve trigger on request
Pulse Outputs		
Number of outputs	16	BNC Sockets
Output Level	TTL (unloaded), 2.5 V p-p (50 Ω)	
Output Impedance	50 Ω	
Significant Slope	Signal is non-inverted	
Pulse Duration	Same as input	20 us minimum pulse width
Rise / Fall Time	< 1 ns	<800 ps typical
Output to Output Time Matching	< 150 ps	< 100 ps typical
Delay Variation	< 3 ps	
Overall propagation delay	20 \pm 2 ns	
Output Jitter	< 10 ps typical	
Temperature Coefficient	10 ps / $^{\circ}$ C	10 $^{\circ}$ C to 50 $^{\circ}$ C
Option 01: 10 MHz Input / 1 pps Output		
Input Frequency	10 MHz \pm 100 kHz	Other frequencies available upon request
Input Level	-20 dBm to +20 dBm	AGC Controlled
Output Frequency	1 pulse per second (1 pps)	Other frequencies available upon request
Output type	Squarewave, 50:50 duty cycle	
Output level	TTL (unloaded), 2.5 V p-p (50 Ω)	
Output Jitter	< 10 ps typical	
General		
Power (AC)	100 - 240 VAC (usable 90 - 260 VAC)	15 Watts max
Power DC	18 to 36 VDC isolated	AC Supply is dominant. Auto switchover
Size and weight	483 x 448 x 44 mm and 2.8 kg	Width x Depth x Height
Ambient Operating Temperature	-10 $^{\circ}$ C to +50 $^{\circ}$ C	
Alarm Output	Alarm LEDs on front panel	
Precision Test Systems		
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Full specifications available from www.ptsyst.com. Specifications and features subject to change without notice (250811)