



DPA-10-20: 0 to 10 MHz Sine, Squarewave, Pulse or IRIG Distribution Amplifiers



Key Features

- 0 - 10 MHz Main Input
- 5,10,15 or 20 outputs
- Outputs drive 50 ohm loads
- Good channel isolation
- Available in other frequencies from 1 to 100 MHz.
- Ethernet Interface option
- Various models (see below).
- Many input signals accepted such as Sinewave, Squarewave, Pulse, IRIG-A, IRIR-B etc.
- Many output formats available such as Sinewave, Squarewave, Pulse, IRIG-A, IRIG-B etc.
- Output either the same frequency as the input, or output frequency can be a multiplication or division of the input

General Description

The DPA-10-20 series are distribution amplifiers available in different formats. They can be used to synchronize up to twenty instruments to a frequency reference input. The reference input frequency is either a sinewave, squarewave at 0 to 10 MHz (depending upon amplifier type) or various time codes (IRIG-B).

Outputs

There are 5, 10, 15 or 20 outputs in a 1U case or 40 outputs in a 2U case. Each output is isolated from the input and each other. Therefore, the reference oscillator connected to the DPA-10-20 is protected against load variations, short circuits etc. that may be applied to the outputs.

The output frequency is normally exactly the same as the input. Or the output can be set by the factory to be a division of the input. For example, a 10 MHz input can produce 10, 5, 2, 1 MHz, 100 kHz or 1 pps outputs.

Amplifier types (if a different format is needed, contact the factory):

- A DPA-10-20-A accepts a 10 MHz sinewave input and outputs sinewave outputs. The output frequency is typically 10 MHz, but other output frequencies such as 1 MHz or 5 MHz can be made.
- A DPA-10-20-B accepts a 10 MHz sinewave input and outputs squarewave outputs. The output frequency is typically 10 MHz, but other output frequencies such as 1 MHz or 5 MHz can be made.
- A DPA-10-20-C accepts a 100 kHz to 10 MHz sinewave input and has switchable TTL squarewave outputs. The output frequency has a division ratio of 1, 2, 5, 10, 100 or 10 million as set by front panel switches.
- A DPA-10-20-D accepts a 10 MHz sinewave input and outputs 1 pps squarewave TTL outputs. The output frequency is exactly the input divided by 10 million (10 MHz in, 1 pps out).

- A DPA-10-20-E accepts a 0 - 10 MHz TTL input and has TTL squarewave outputs. The output frequency is exactly the same as the input frequency.
- A DPA-10-20-F accepts a 5 MHz sinewave input and outputs 5 MHz sinewave outputs. There are up to 20 outputs.
- A DPA-10-20-G accepts a 0 - 10 MHz LVDS input and has TTL squarewave outputs. The output frequency is exactly the same as the input frequency.
- A DPS-10-20-H accepts either one or two-time code inputs and outputs 6 or 12 outputs. Input type can be IRIG-B (AM or DC) plus many other types of time codes.
- A DPA-10-20-J accepts a 10 MHz sinewave input. There are five outputs at 10 MHz and five outputs At 100 kHz.
- A DPA-10-20-K accepts a 10 MHz sinewave input. The output is a 100 kHz squarewave with TTL levels (0-3.2V into 50 ohm).
- A DPA-10-20-L accepts a 1 pps input. There are ten x 1 pps outputs. Input and output levels are differential ($\pm 2V$ in 50 Ω). Output skew is < 1 ns.

Options

Various options are available. If the option you require is not shown, just email us your requirements and we will advise whether it can be designed. Not all products can have these options.

- Option 01: Increased squarewave output level. 0 to $> 4.6V$ into 50 ohms.
- Option 02: G703 compliant outputs. Outputs levels are -1.2V to +1.2V into a 75 Ω load.
- Option 03: Internal DDS, 0-80 MHz in 1 μ Hz steps. Adjusted by RS232. This option is usually fitted along with option 02 to give 2.048 MHz G703 outputs from a 10 MHz squarewave input.

Applications

The DPA-10-20: 10 MHz Pulse Distribution Amplifier is ideal for use in calibration or standard laboratories, radio repair workshops or production facilities. By using the rear slave output, many DPA-10-20 's can be connected together to give multiple outputs. Over 1000 outputs can be derived from one reference input.

Miscellaneous Information

The DPA-10-20 is a highly reliable unit with an MTBF of over 60 years. The DPA-10-20 is housed in a fully screened 19" rack mount case and operates from a 100 - 240 VAC supply (usable 90 – 260 VAC) or external 12 V DC. The DPA-10-20 is CE marked for sale within the EEC.

DPA-10-20 SPECIFICATIONS

Specification Parameter	Specification	Comments
Input		
Frequency Range	0 to 10 MHz sinewave, squarewave, pulse or time code	Depending on amplifier type
Input Impedance (sinewave)	50 Ω 10 k Ω	Depending on amplifier type
Input Level	+20 dBm to -5 dBm (sinewave) 0 – 3V min (TTL) LVDS (1.075 - 1.425 V)	Type A, B, C, D, F, J, K Type E Type G
Outputs (20)		
Output Waveform	Sinewave, squarewave or timecode	Depending on amplifier type
Number of Outputs	5, 10, 15 or 20	40 in a 2U case
Output Frequency	Exactly the same as the input frequency	Divided output optionally available
Output level	Typically, +10 dBm (sinewave) or 0 to 3.2 V squarewave into 50 Ω	Outputs specified into a 50 ohm load. TTL is 0 to 5V into an open circuit.
Jitter (1 second, Allan Deviation)	< 0.8 ps	Typical
Risetime	< 10 ns (typical < 7 ns)	Squarewave Outputs
Delay Match between outputs (1 pps)	< 1 ns typical (5 or 10 outputs)	< 4ns typical for 15 or 20 outputs
General		
Power: AC / DC	100 - 240 VAC / 11-13 VDC @ 1.4 A	50 Watts max / 1.6Amps with opt 03
Size and weight	483 x 300 x 44 mm and 4.6 kg	Width x Depth x Height
Ambient Operating Temperature	-10°C to +50 °C	

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Specifications subject to change without notice (030817)