CDA-2990 Specifications

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Contents

CDA-2990 Specifications

These specifications apply to the CDA-2990 Clock Distribution Device and the CDA-2990 Clock Distribution Device with GPSDO. When not otherwise specified, the specifications for the CDA-2990 in this document refer to both the CDA-2990 and the CDA-2990 with GPSDO.

Note For more detailed specifications of the CDA-2990, refer to the ***OctoClock CDA-2990 KnowledgeBase***.

Related information:

- OctoClock CDA-2990 KnowledgeBase

Definitions

Warranted specifications describe the performance of a model under stated operating conditions and are covered by the model warranty.

Characteristics describe values that are relevant to the use of the model under stated operating conditions but are not covered by the model warranty.

- ***Typical*** specifications describe the performance met by a majority of models.
- ***Nominal*** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.

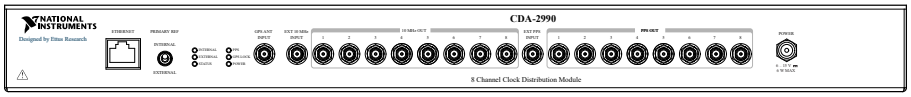
Specifications are ***Characteristics*** unless otherwise noted.

Conditions

Specifications are valid at 25 °C unless otherwise noted.

Hardware Front Panel

Figure 1. Clock Distribution Accessory Front Panel



Input

Table 1. Reference Clock Input

Frequency	10 MHz
Power range	0 dBm to 20 dBm (0.632 V_{pk-pk} to 6.325 V_{pk-pk} into 50 Ω)
Coupling	AC
Impedance	50 Ω

Table 2. PPS Input

Voltage, recommended minimum	2.5 V
Voltage, recommended maximum	5 V
Voltage, operating maximum	5.3 V
Voltage, absolute maximum	6.8 V
Voltage, maximum logic level low (V_{IL})	0.74 V
Voltage, minimum logic level high (V_{IH})	1.8 V
Compatible logic families	TTL, CMOS, LVTTL, LVCMOS

Output

Note In addition to the ability to distribute external sources, the CDA-2990 with GPSDO can also generate clock and PPS signals internally. To activate the GPSDO, move the switch on the front panel to INTERNAL.

Table 3. Clock Output

Frequency	10 MHz

Frequency accuracy without GPSDO	Dependent on input
Frequency accuracy with GPSDO, unlocked	25 ppb
Power	10 dBm, typical
Voltage	1.4 V_{pk-pk}
Waveform	Square wave
Impedance	50 Ω
Coupling	AC

Table 4. PPS Output

Voltage, maximum	5 V
Positive duty cycle	20%, typical
Period	1 s, typical
Waveform	Logic-level pulse

Table 5. Accuracy

Without GPSDO	Dependent on input
With GPSDO, unlocked	<±20 µs
With GPSDO, locked	50 ns

Note Accuracy wwith GPSDO, unlocked is measured over a 3-hour period at 25 °C (OCXO, no motion).

GPS Disciplined Oscillator (GPSDO)

Table 6. Active antenna

Voltage	5 V
Power	0.7 W
GPS Frequency	L1, C/A 1,574 MHz
GPS Antenna	Active or passive

Table 7. Sensitivity

Acquisition	-142 dBm
Tracking	-158 dBm

Table 8. GPS TTFF

Cold start	<45 s
Warm start	1 s
Hot start	1 s
Allan deviation (ADEV)	1×10^{-12}
Warm-up/stabilization time (To 1×10^{-8} accuracy)	<5 min

Note Allan deviation measured at 10 ks (OCXO, GPS locked, no motion).

Note NI recommends periodically locking the GPS for at least 1 hour to recalibrate the GPSDO module accuracy.

Power Supply

Table 9. Power Supply

Input voltage	6 V to 15 V DC
Input power	6 W maximum

Physical Characteristics

Table 10. Physical Characteristics

Dimensions (L × W × H)	4 in. × 17.19 in. × 1.75 in. (10.16 cm × 43.66 cm × 4.45 cm)
Weight	2.6 lb (1.18 kg)

Note For detailed information about connectors and key components, refer to the ***OctoClock CDA-2990 KnowledgeBase***.

Related information:

- OctoClock CDA-2990 KnowledgeBase

Environment

Table 11. Environmental Characteristics

Operating temperature	23 °C ± 5 °C, room temperature.
Operating relative humidity range	10% to 90%, noncondensing (tested in accordance with IEC 60068-2-56)
Maximum altitude	2,000 m (800 mbar) (at 25 °C ambient temperature)
Pollution Degree	2

Indoor use only.

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