

7G & 13G Clock Synthesizers



Applications

- Designed to extend the operation of the TG1B1-A BERT for continuous operation from 500Mbps to 13.5Gbps.
- XAUI BERT tester using four TG1B1-A BERT and the TG1C1-A to enable a synchronous four lane BER tester at a fraction of the cost from competitors.
- Stand alone lab clock source for general purpose use.

Features

- Small compact size
- Lower frequency 500MHz to 7.0GHz square wave generator (TG1C1-A)
- Wide tune range 500MHz to 13.5GHz square wave generator (OPT001)
- Jitter injection capability from 1Hz to 100MHz (OPT002)
- Six pairs of differential outputs, 3 pairs (6 single-ended connectors) jittered (OPT002) and 3 pairs (6 single-ended connectors) unjittered.
- One set of differential outputs offer independent delay adjustment relative to the other outputs
- Wide range of amplitude (600mV to 2000mV)
- DC offset adjustable for driving different logic types (-2.0V to 2.0V)
- All GPIB controllable for automated use
- Very low jitter typically <1ps rms

Key Parameters

| | Units | Typical Min | Typical Max |
|--|---------|-------------|-------------|
| OUTPUTS | | | |
| Frequency of Operation (TG1C1-A) | GHz | 0.500 | 7.0 |
| Frequency of Operation (TG1C1-A-OPT001) | GHz | 0.500 | 13.5 |
| Rise/Fall Times 20/80 | pS | - | 40 |
| Jitter (TJ) | | | |
| 0.5 to 2.5GHz | pS | - | 2.0 |
| 2.5 to 13.5GHz | pS | - | 1.0 |
| Amplitude Range (Single Ended Front Outputs) | | | |
| 0.5 to 7.5GHz | V | 0.6 | 2.0 |
| 7.5 to 13.5GHz | V | 0.6 | 1.5 |
| Offset Range (Vcm) | V | -2.0 | 2.0 |
| Output Voltage Step Size (Vamp & Vcm) | mV | 10 | - |
| Reference Phase Adjust (Clock > 500MHz) | Degrees | 0 | 360 |
| Phase Step Size | Degrees | 2 | - |
| Amplitude Range (Single Ended Rear Outputs AC coupled) | | | |
| 0.5 to 7.5GHz | V | 0.2 | 0.8 |
| 7.5 to 13.5GHz | V | 0.2 | 0.6 |
| Source Impedance Return Loss (10GHz) | dB | -10 | - |

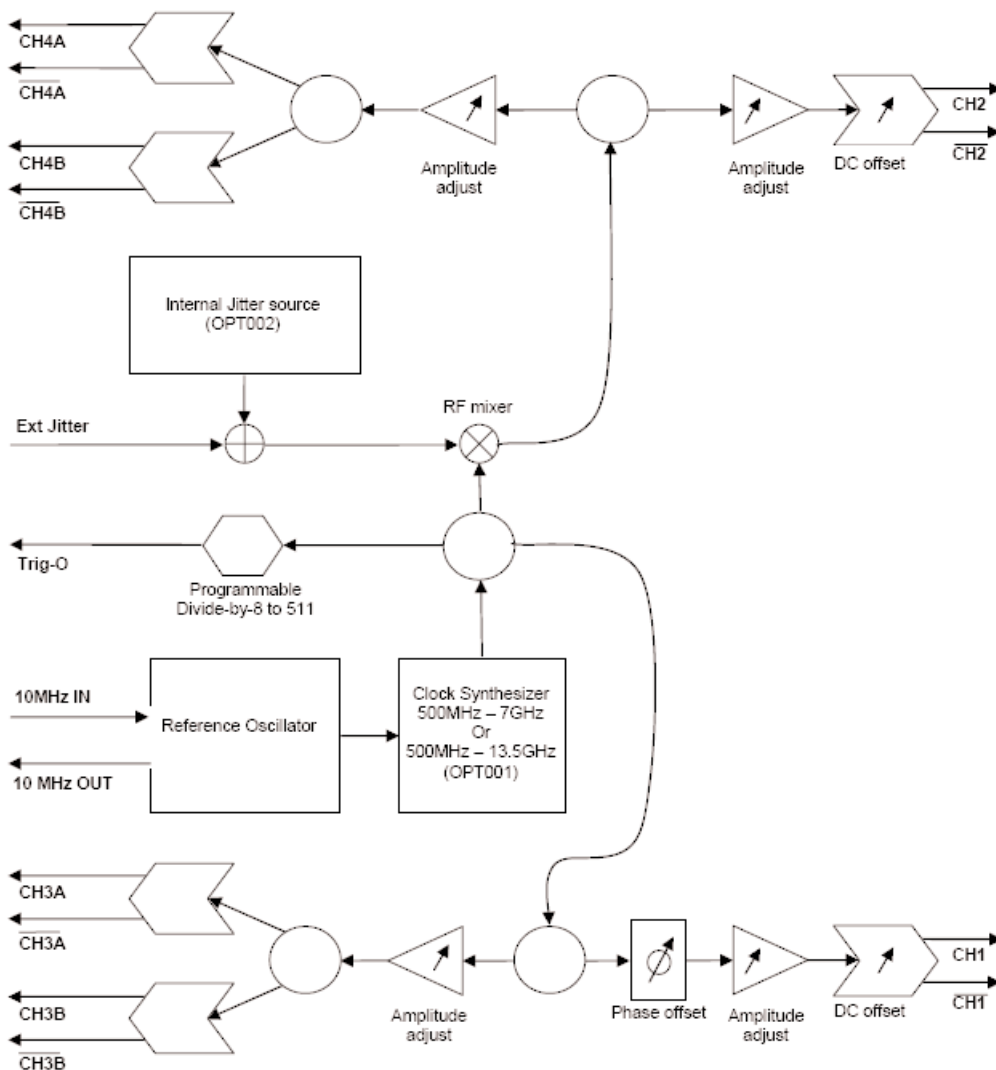
Parameters Continued

| | Units | Typical Min | Typical Max |
|--|--------|----------------|----------------|
| JITTER INSERTION OPTION (OPT002) | | | |
| External/Internal Jitter Generator Frequency | MHz | 0 | 100 |
| Maximum Phase Deviation for Jitter | | | |
| 0 to 100kHz | UI | - | 32 |
| 100kHz to 4MHz (Linear Plot) | UI | 32 | to 1.0 |
| 4MHz to 100 MHz | UI | - | 0.6 |
| TIMEBASE | | | |
| Stability (internal 20MHz Oscillator) | ppm | 3.0 | - |
| Aging @ 40°C | ppm/yr | 1.0 | - |
| External Input (10MHz +/-) | ppm | -10 | +10 |
| External Input Levels (1kΩ) | mVpp | 500 | 2000 |
| Reference Output 10MHz Sine into 50Ω | mVpp | 500 | - |
| Temperature Range | Deg C | 10 | 55 |
| Weight | lbs | | 7.5 |
| Dimension | inches | | 10x10x2.5 |

Rear View of TG1C1-A



Block Diagram



Ordering Information

TG1C1-A **7G Clock Synthesizer (500MHz to 7GHz)**, includes standard 1-year warranty

OPTIONS

OPT001 **13G Clock Synthesizer (500MHz to 13.5GHz)**, includes standard 1-year warranty

OPT002 **High-UI Jitter Injection Capability**

OPT003 **19-inch Rack Mount**

OPT106 **1-year Extended Warranty**