# TekExpress Automotive Ethernet

## Transmitter Test Report

| Setup Information | | | |
|---|---|---|---|
| DUT ID | DUT001 | TekExpress Automotive-Ethernet | 1.5.3.52 |
| Date/Time | 2026-01-27 16:44:09 | Framework Version | 5.7.0.33 |
| Pre-Recorded Mode | False | Scope Model | MSO64B (4.0GHz ) |
| Compliance Mode | True | Firmware Version | 2.12.5.2206 |
| Suite Name | 1000Base-T1 | DUT Automation | None |
| Overall Execution Time | 0:12:16 | Probing Type | Differential (CH1) |
| Overall Test Result | Fail | Probe1 Model | TDP3500 |
| | | Probe1 Serial Number | B053350 |
| DUT COMMENT: | Automotive Ethernet DUT | | |

| Test Name Summary Table | |
|---|---|
| Transmit Clock Frequency | Pass |
| Transmitter Timing Jitter - MDI Jitter | Fail |
| Transmitter Timing Jitter - Master Jitter | Fail |
| Transmitter Timing Jitter - Slave Jitter | Pass |
| Transmitter Output Droop | Pass |
| Transmitter Power Spectral Density and Power Level | Pass |
| Transmitter Peak Differential Output | Pass |

| Transmit Clock Frequency | | | | | | | |
|---|---|---|---|---|---|---|---|
| Measurement Details | Test Result | Low Limit | Measured Value | High Limit | Units | Margin | Run# |
| Tx Clock Frequency | Pass | 124.9875 | 124.988043 | 125.0125 | MHz | LL: 0.001, HL: 0.024 | 1 |
| Tx Symbol Frequency | Pass | 749.925 | 749.928259 | 750.075 | MHz | LL: 0.003, HL: 0.147 | 1 |
| COMMENTS | Signal Validation : Use signal as is - Don't Check<br>Number of unit Intervals: 54994<br><br>Scope Bandwidth Limiting Filter of 2GHz is applied. | | | | | | |

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| Transmitter Timing Jitter - MDI Jitter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Measurement Details | Test Result | Low Limit | Measured Value | High Limit | Units | Margin | Run# |
| MDI Jitter RMS | Fail | N.A | 9.985 | 5 | ps | LL: N.A, HL: -4.985 | 1 |
| MDI Jitter Pk-Pk | Fail | N.A | 71.157 | 50 | ps | LL: N.A, HL: -21.157 | 1 |
| COMMENTS | Signal Validation : Use signal as is - Don't Check<br>Number of Edges: 129983<br><br>Scope Bandwidth Limiting Filter of 2GHz is applied.<br><br>Band-pass Hamming Filter of Lower cut-off frequency 122.5 MHz and Upper cut-off frequency 127.5 MHz is applied. | | | | | | |

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| Transmitter Timing Jitter - Master Jitter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Measurement Details | Test Result | Low Limit | Measured Value | High Limit | Units | Margin | Run# |
| Master Jitter RMS | Fail | N.A | 6.923 | 5 | ps | LL: N.A, HL: -1.923 | 1 |
| Master Jitter Pk-Pk | Fail | N.A | 70.753 | 50 | ps | LL: N.A, HL: -20.753 | 1 |
| | Signal Validation : Use signal as is - Don't Check | | | | | | |

| | |
|---|---|
| COMMENTS | Number of Edges: 129988<br><br>Scope Bandwidth Limiting Filter of 2GHz is applied.<br><br>Band-pass Hamming Filter of Lower cut-off frequency 122.5 MHz and Upper cut-off frequency 127.5 MHz is applied. |

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| Transmitter Timing Jitter - Slave Jitter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Measurement Details | Test Result | Low Limit | Measured Value | High Limit | Units | Margin | Run# |
| Slave Jitter RMS | Pass | N.A | 7.675 | 10 | ps | LL: N.A, HL: 2.325 | 1 |
| Slave Jitter Pk-Pk | Pass | N.A | 75.712 | 100 | ps | LL: N.A, HL: 24.288 | 1 |
| COMMENTS | Signal Validation : Use signal as is - Don't Check<br>Number of Edges: 129994<br><br>Scope Bandwidth Limiting Filter of 2GHz is applied.<br><br>Band-pass Hamming Filter of Lower cut-off frequency 122.5 MHz and Upper cut-off frequency 127.5 MHz is applied. | | | | | | |

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| Transmitter Output Droop | | | | | | | |
|---|---|---|---|---|---|---|---|
| Measurement Details | Test Result | Low Limit | Measured Value | High Limit | Units | Margin | Run# |
| Positive Output Droop | Pass | N.A | -1.975 | 10 | % | LL: N.A, HL: 11.975 | 1 |
| Negative Output Droop | Pass | N.A | -1.846 | 10 | % | LL: N.A, HL: 11.846 | 1 |
| COMMENTS | Signal Validation : Use signal as is - Don't Check<br><br>Positive droop: Max value = -0.83%, Min value = -3.2%, Count = 199<br>Negative droop: Max value = -0.66%, Min value = -3.14%, Count = 198<br><br>Scope Bandwidth Limiting Filter of 2GHz is applied. | | | | | | |

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| Transmitter Power Spectral Density and Power Level | | | | | | | |
|---|---|---|---|---|---|---|---|
| Measurement Details | Test Result | Low Limit | Measured Value | High Limit | Units | Margin | Run# |
| Tx Power Spectral Density | Pass | N.A | 0 | 0 | Hits | LL: N.A, HL: 0 | 1 |
| Power Level | Pass | N.A | -2.022 | 5.0 | dBm | LL: N.A, HL: 7.022 | 1 |
| COMMENTS | RBW: 100.0kHz, Start frequency: 0.0MHz, Stop frequency: 600.0MHz,<br>Spectral average value: 64, FFT Window type: Gaussian<br><br>Scope Bandwidth Limiting Filter of 2GHz is applied. | | | | | | |

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| Transmitter Peak Differential Output | | | | | | | |
|---|---|---|---|---|---|---|---|
| Measurement Details | Test Result | Low Limit | Measured Value | High Limit | Units | Margin | Run# |
| Tx Peak Diff Output | Pass | N.A | 0.984 | 1.3 | VPP | LL: N.A, HL: 0.316 | 1 |
| COMMENTS | Signal Validation : Use signal as is - Don't Check<br><br>Scope Bandwidth Limiting Filter of 2GHz is applied. | | | | | | |

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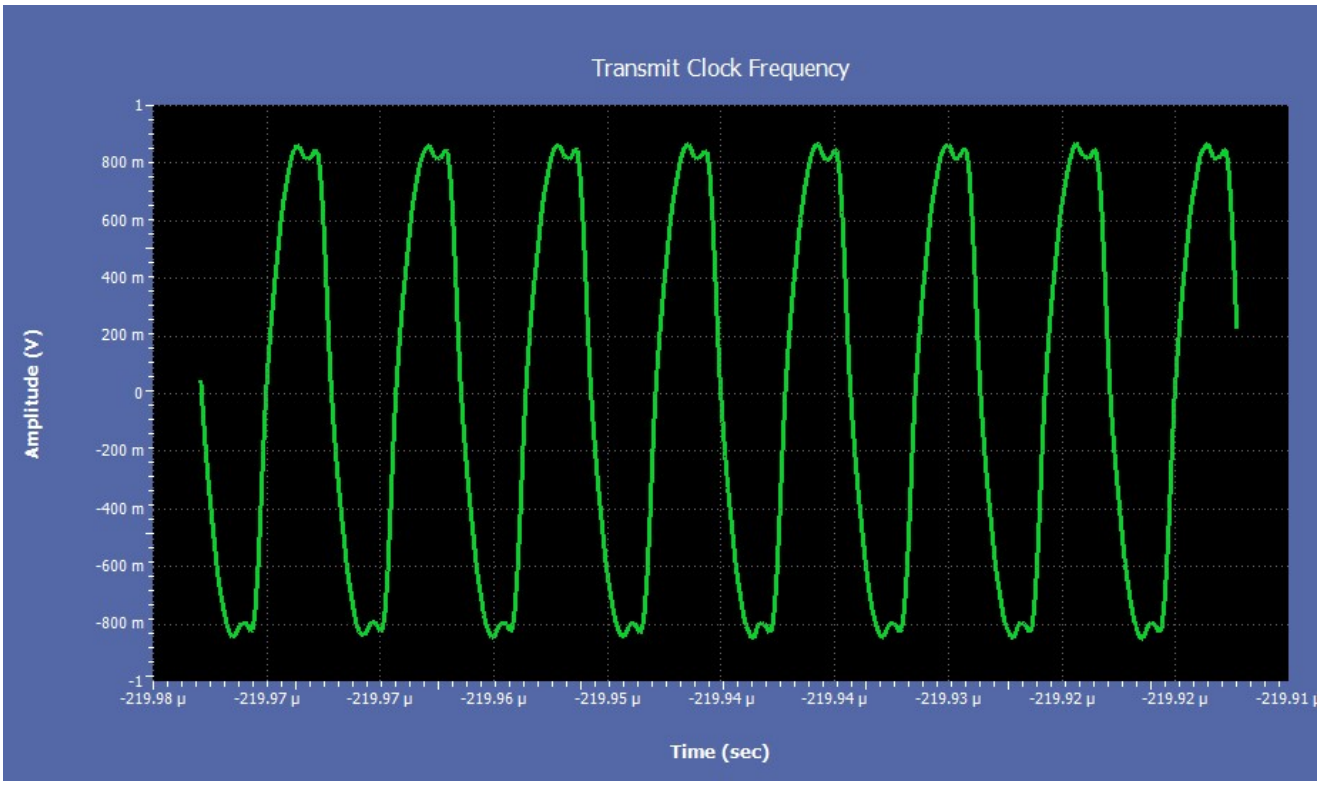
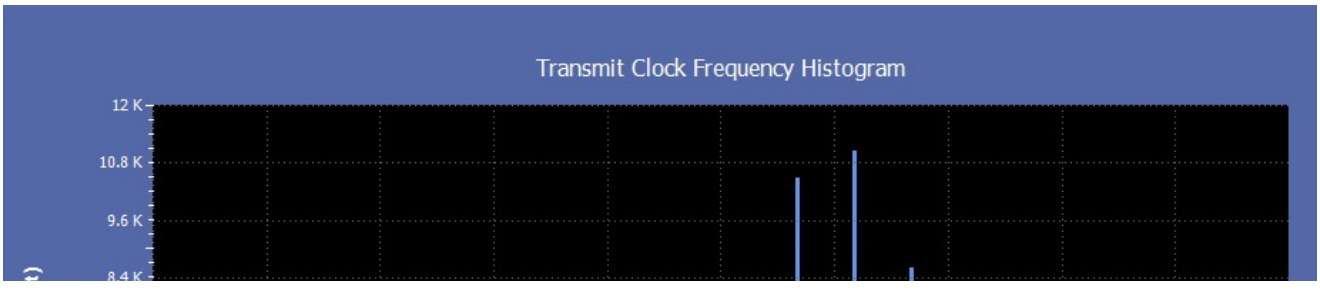
| Transmit Clock Frequency |
|---|
| Transmit Clock Frequency_Run1 Transmit Clock Frequency_Run1 Transmit Clock Frequency Histogram_Run1 |

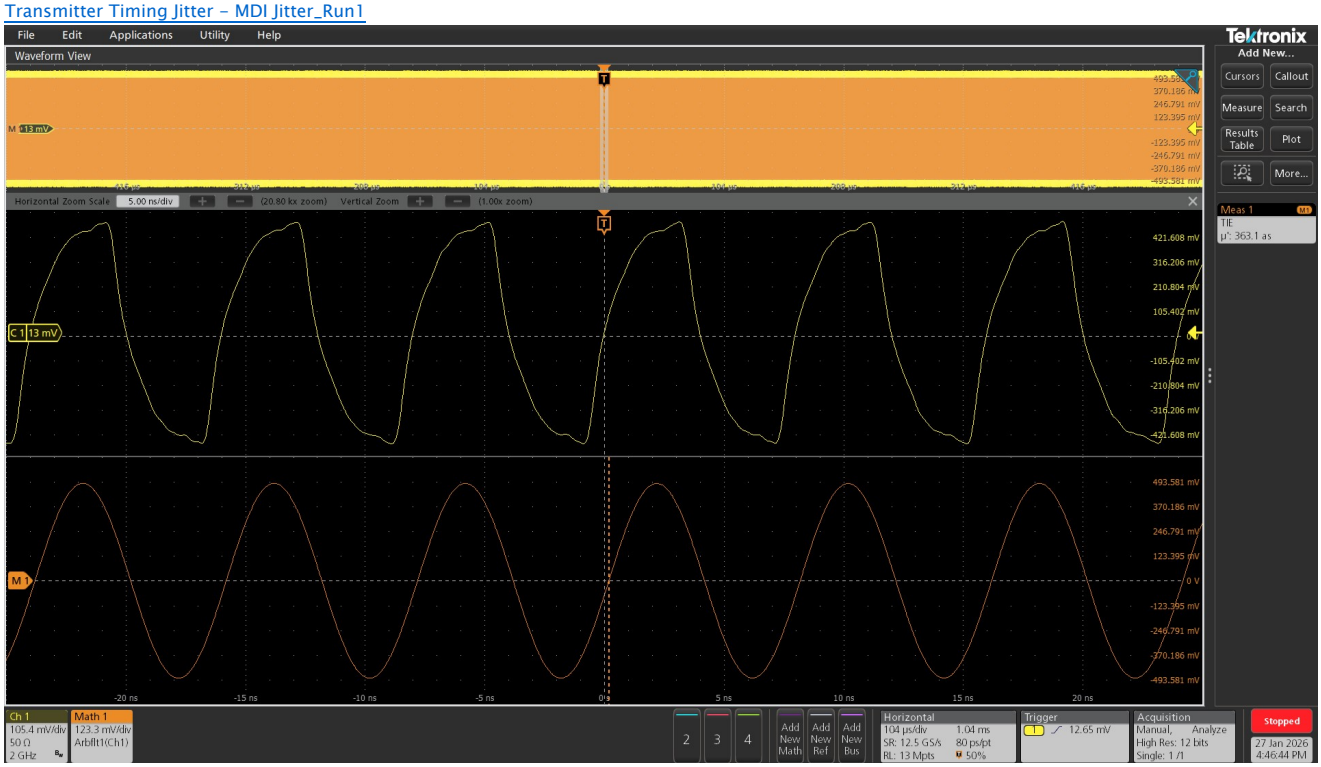

File
Edit
Applications
Utility
Help
Tektronix
Waveform View
Add New...
Cursors
Callout
Measure
Search
Results Table
Plot
More...
Horizontal Zoom Scale 44.00 us/div
(1.00x zoom)
Vertical Zoom
(1.00x zoom)
C 1 10 mV
756.220 mV
567.165 mV
378.110 mV
189.055 mV
-189.055 mV
-378.110 mV
-567.165 mV
-756.220 mV
-176 µs
-132 µs
-88 µs
-44 µs
0 s
44 µs
88 µs
132 µs
176 µs
Ch 1
189.0 mV/div
50 Ω
2 GHz
Add New Math
Add New Ref
Add New Bus
Horizontal
44 µs/div
440 µs
SR: 6.25 GS/s
160 ps/pt
RL: 2.75 Mpts
50%
Trigger
7.56 mV
Acquisition
Manual, Analyze
High Res: 13 bits
Single: 1 /1
Stopped
27 Jan 2026
4:45:07 PM


Transmit Clock Frequency
Amplitude (V)
1
800 m
600 m
400 m
200 m
0
-200 m
-400 m
-600 m
-800 m
-1
-219.98 µ
-219.97 µ
-219.97 µ
-219.96 µ
-219.95 µ
-219.94 µ
-219.94 µ
-219.93 µ
-219.92 µ
-219.92 µ
-219.91 µ
Time (sec)

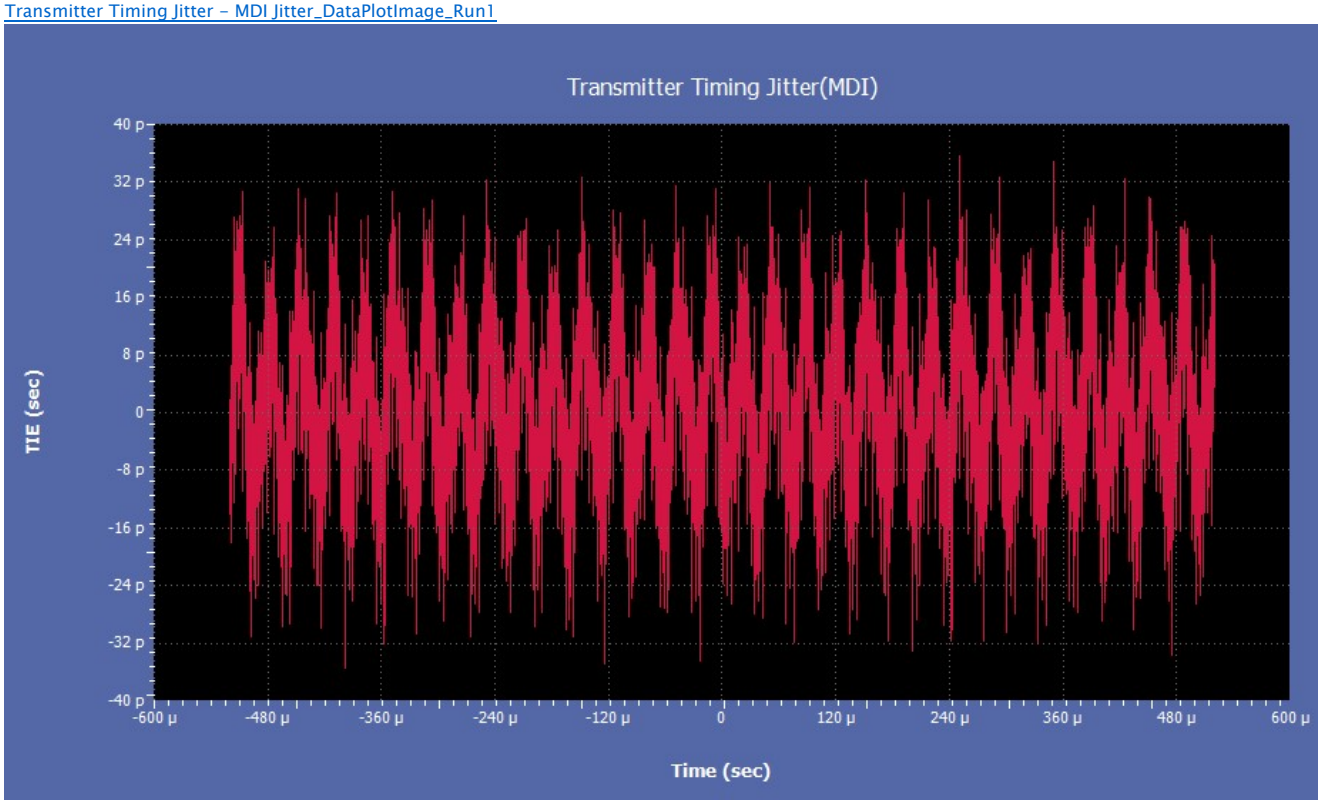

Transmit Clock Frequency Histogram
12 K
10.8 K
9.6 K

Transmitter Timing Jitter – MDI Jitter

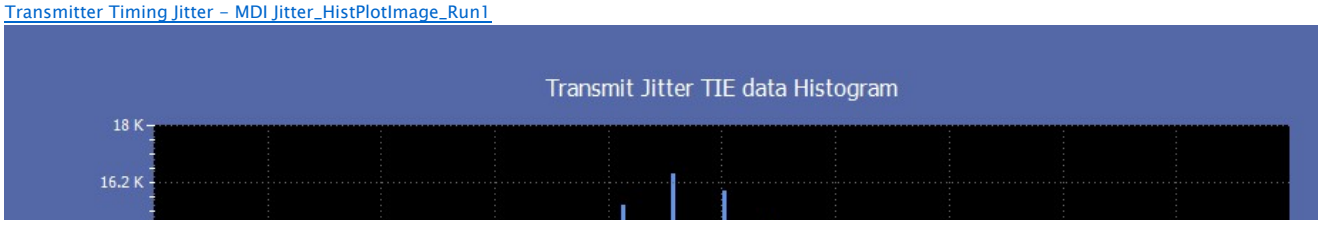
Transmitter Timing Jitter – MDI Jitter_Run1




Transmitter Timing Jitter – MDI Jitter_DataPlotImage_Run1

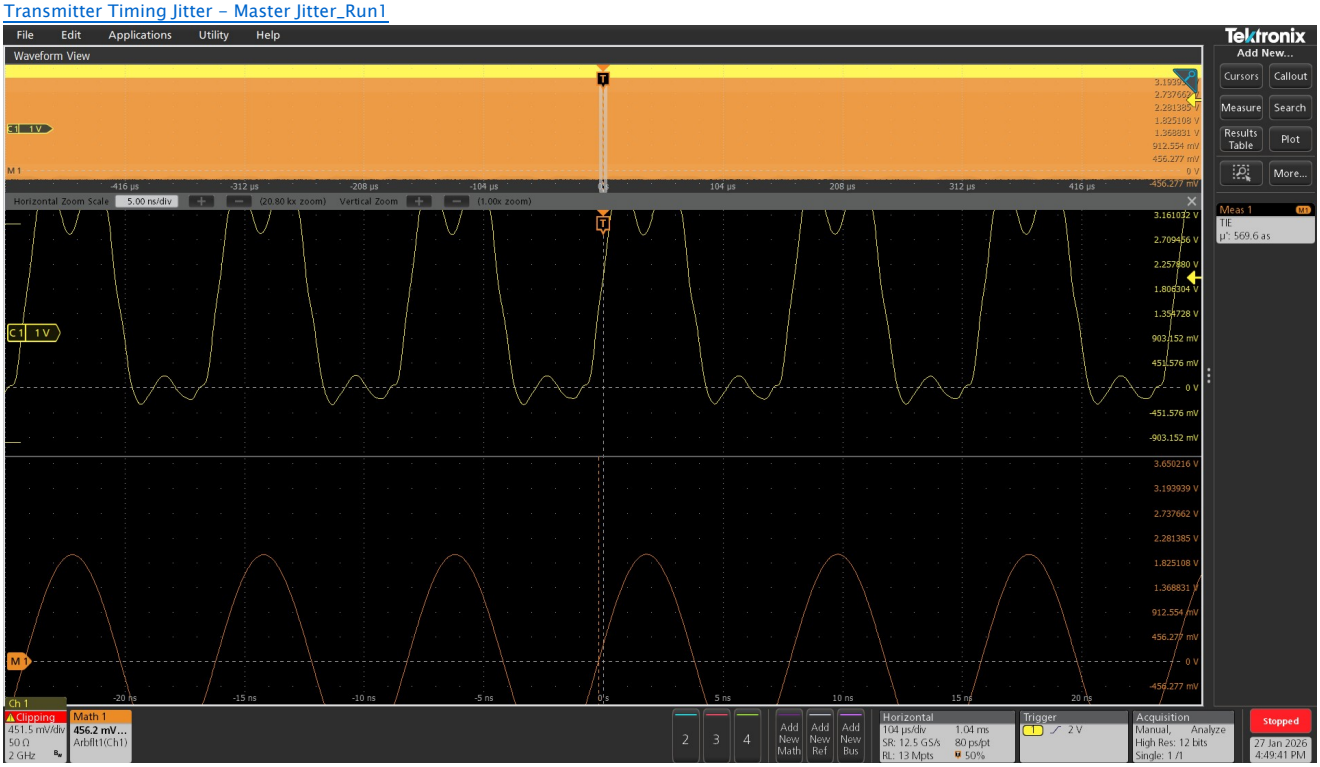



Transmitter Timing Jitter – MDI Jitter_HistPlotImage_Run1

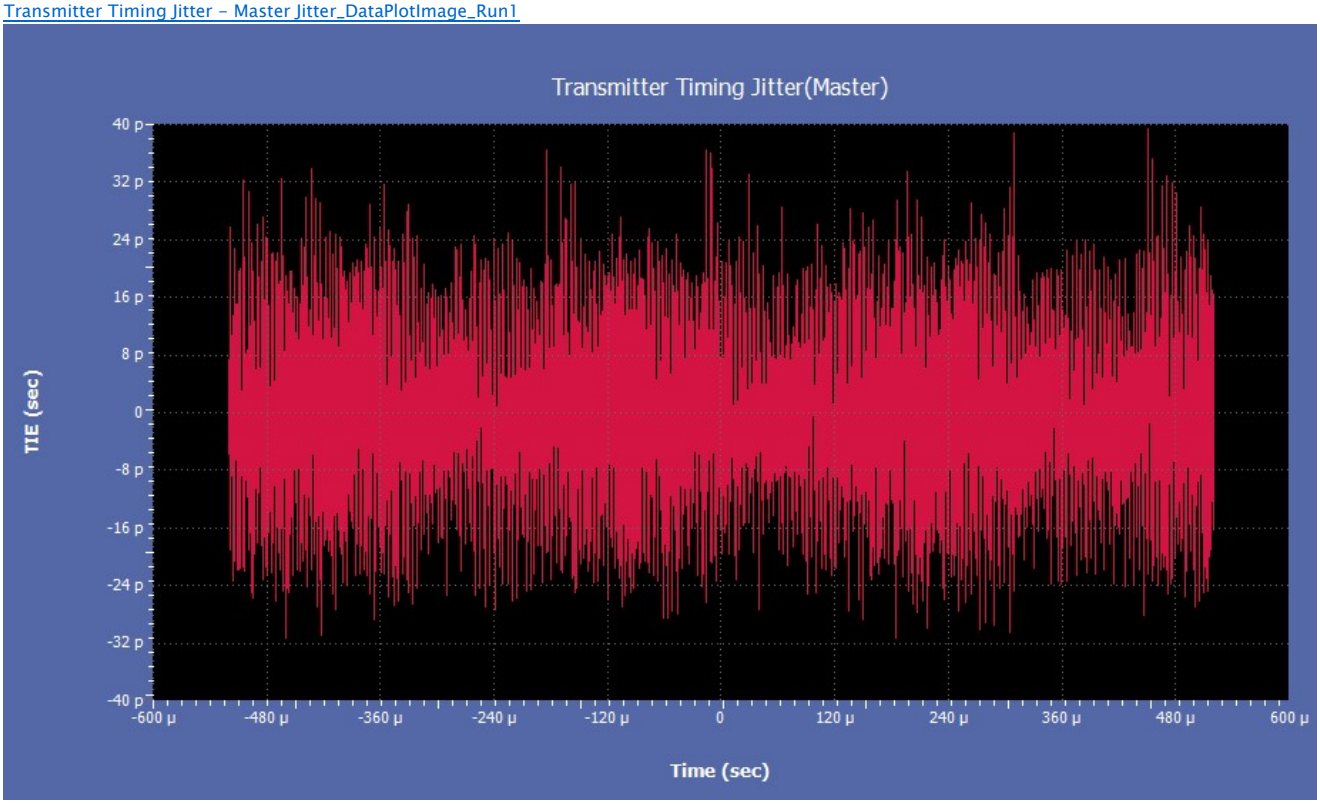


Transmitter Timing Jitter – Master Jitter

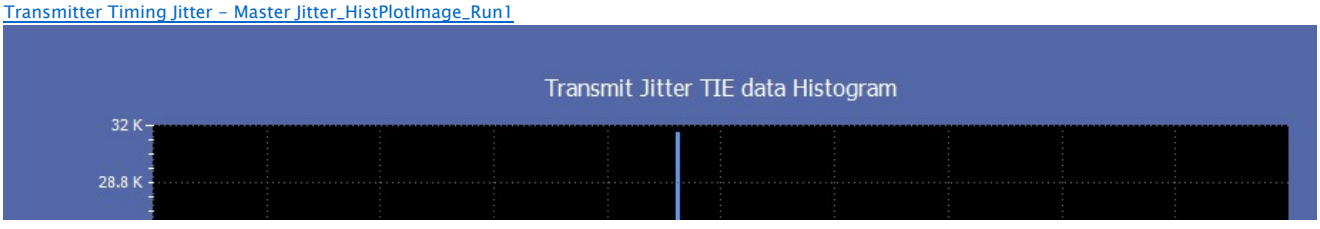
Transmitter Timing Jitter – Master Jitter_Run1




Transmitter Timing Jitter – Master Jitter_DataPlotImage_Run1

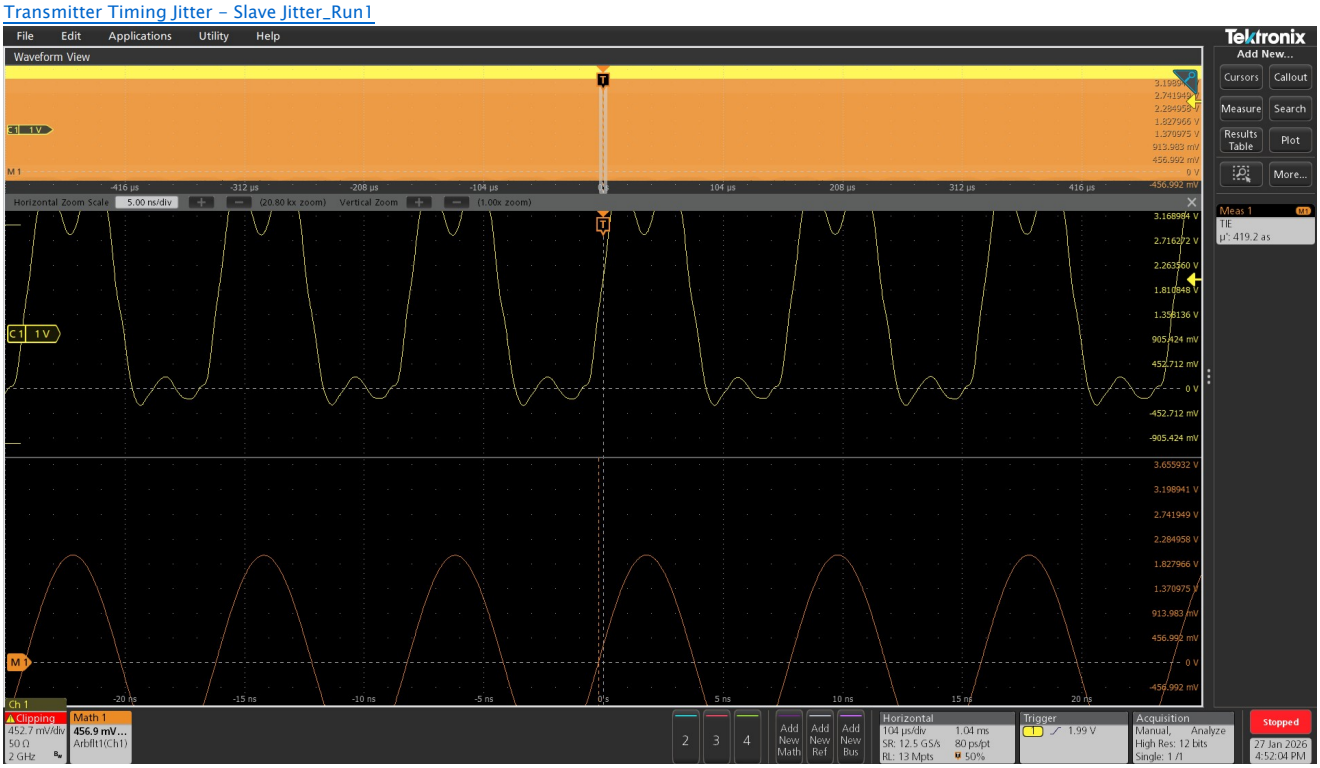



Transmitter Timing Jitter – Master Jitter_HistPlotImage_Run1

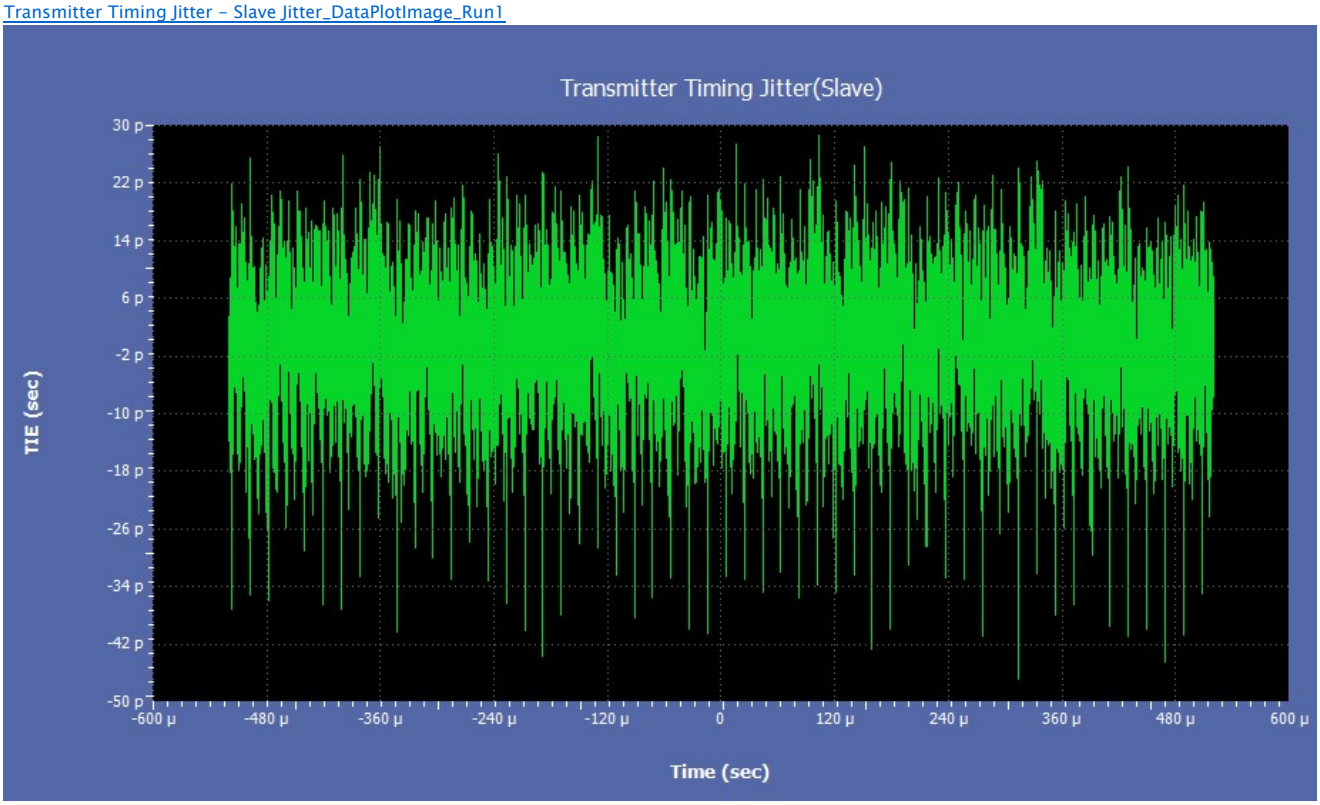


Transmitter Timing Jitter – Slave Jitter

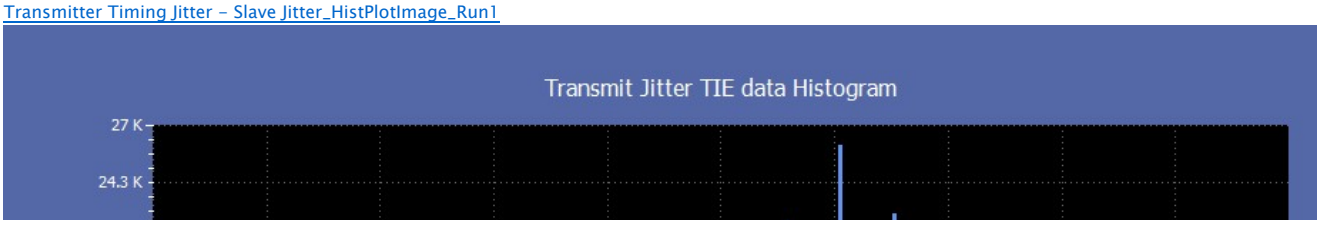
Transmitter Timing Jitter – Slave Jitter_Run1




Transmitter Timing Jitter – Slave Jitter_DataPlotImage_Run1

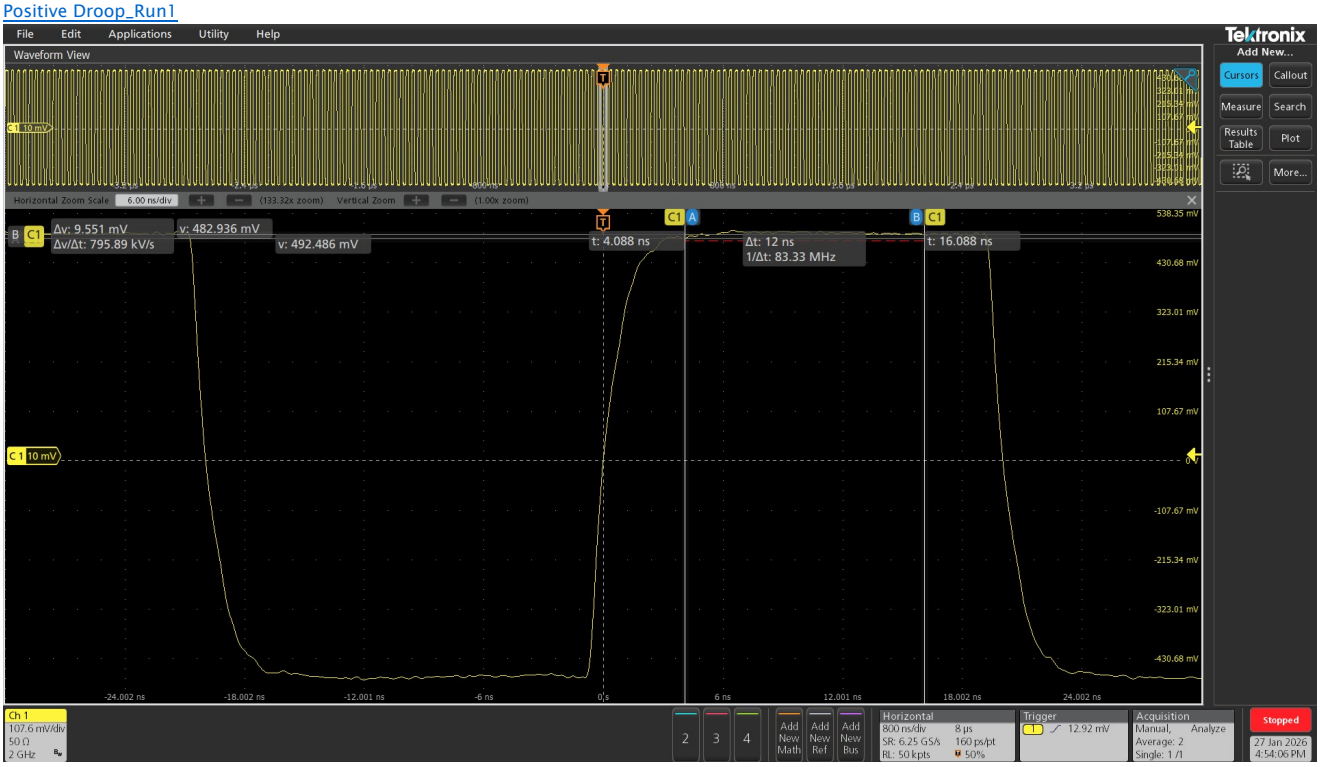



Transmitter Timing Jitter – Slave Jitter_HistPlotImage_Run1

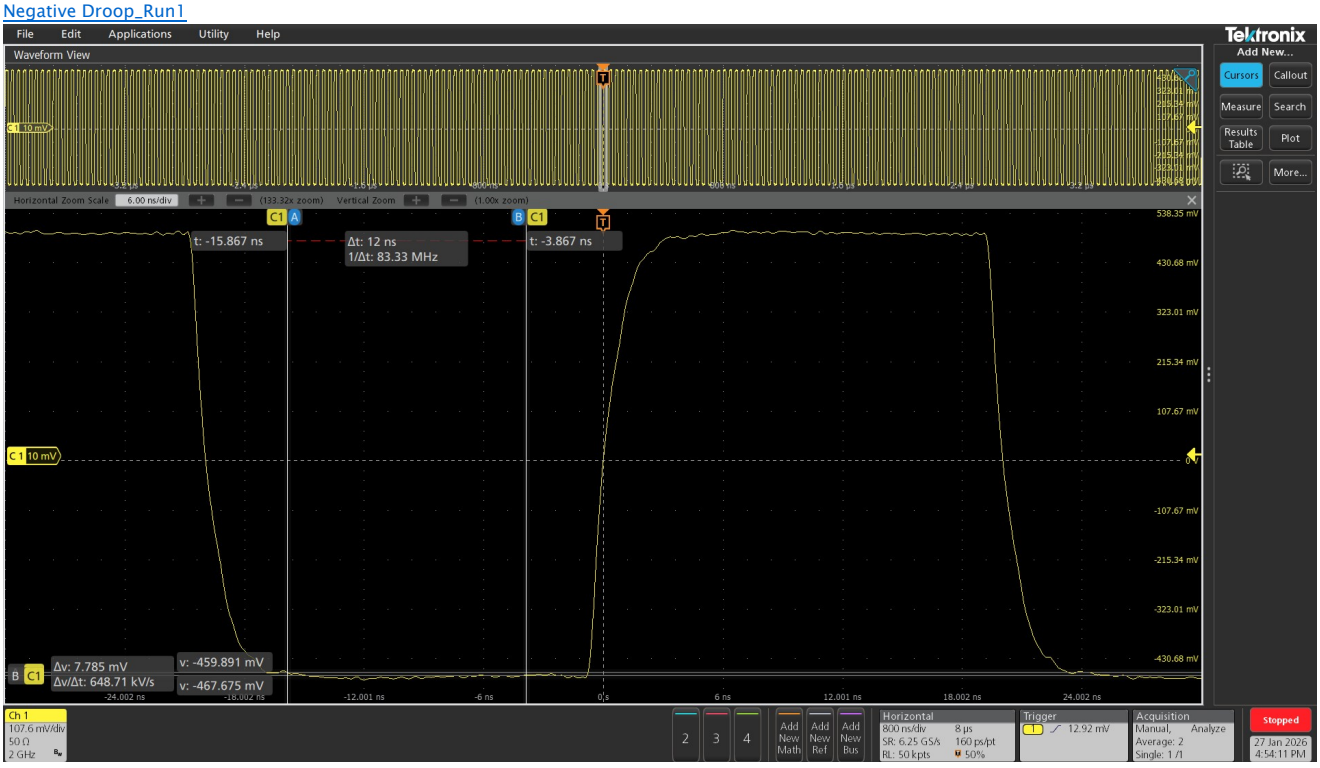


## Transmitter Output Droop

Positive Droop_Run1

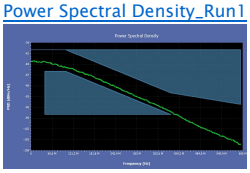


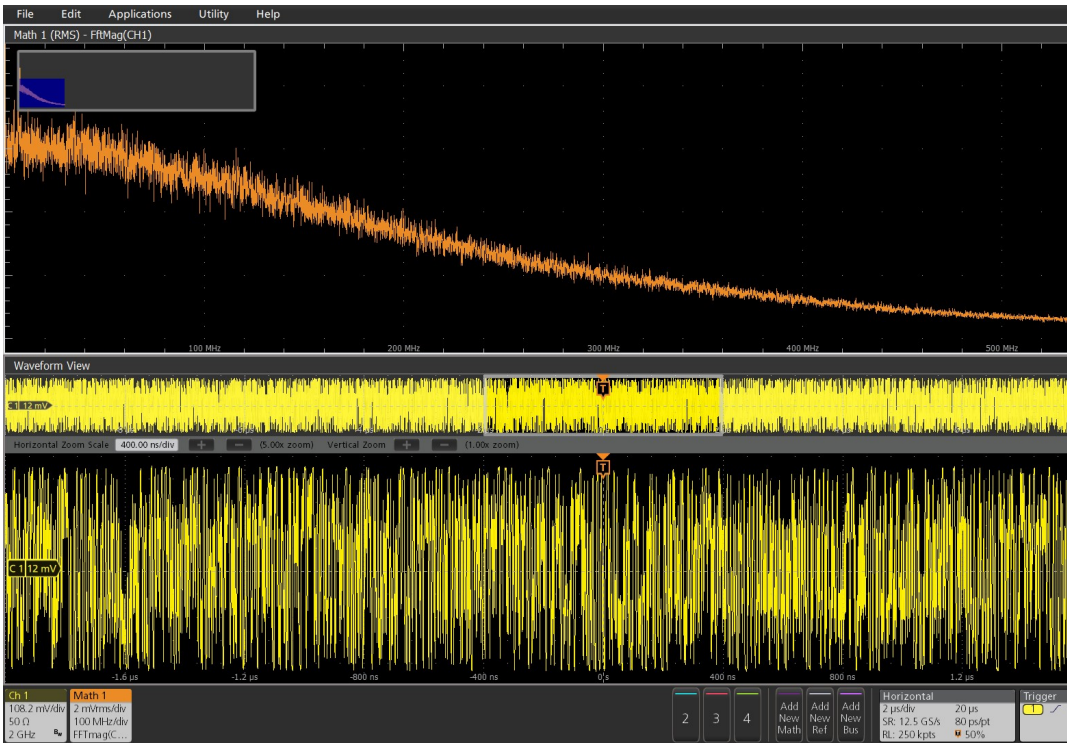

Negative Droop_Run1




## Transmitter Power Spectral Density and Power Level

Power Spectral Density_Run1 Transmitter Power Spectral Density_Run1






Transmitter Peak Differential Output

Transmitter Peak Differential Output_Run1