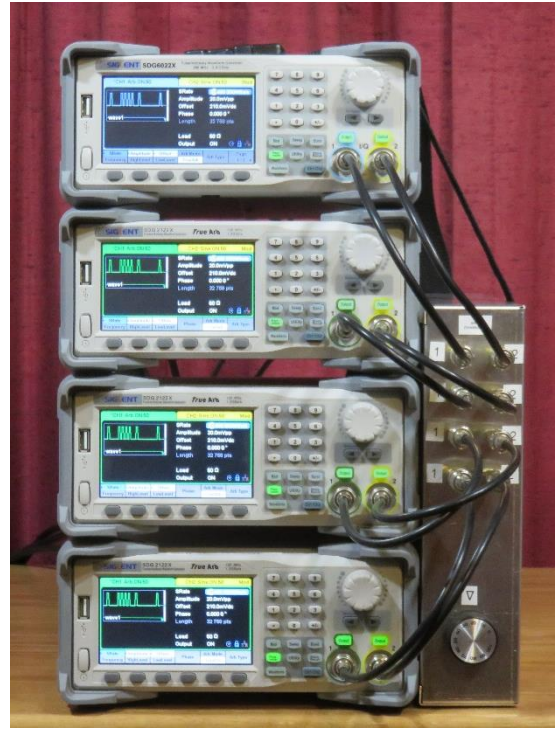


TEMPEST Electromagnetic Simulator (4TES)

Gaul TEMPEST Consulting proudly offers a computer-controlled state machine that creates TEMPEST like signals for the purposes of training and testing TEMPEST professionals.

The TEMPEST Electromagnetic Simulator (Model 4TES) consists of four dual-channel arbitrary waveform generators, four RF mixers, a 4:1 RF combiner, and a rotary attenuator. A laptop PC is included which provides a user interface powered by a custom-designed LabVIEW run-time executable file.



- Four independent RF carriers with user selectable:
 - ✓ Carrier frequencies from 5 to 120 MHz
 - ✓ Serial or parallel emanations
 - ✓ NRZ or RZ data formats
 - ✓ Rd or Rt emanations
 - ✓ Adjustable levels of white Gaussian noise
 - ✓ Adjustable carrier levels
- User can input two ASCII characters from A to Z plus space character, including both upper and lower case.
- Test administrators can hide controls when administering hands-on exams.

For more information, contact Harry Gaul at 480-223-7368 or by email at harry@tabargaul.com.

Type in a frequency between 5 and 100 MHz and press ENTER.

To reduce the carrier level, enter a value between 0 dB (no change) and -10 dB and then press ENTER.

Enter a value for the noise level between 0% (none) and 120% and press ENTER.

Type in one or two characters in the ASCII Pattern box and press ENTER.
 If no character is entered, then TES will default to "OA".
 If one character is entered, then TES will double that character.
 If more than 2 characters are entered, then TES only uses first 2.
 Characters can be upper or lower case A through Z and also the space character.

ASCII Pattern: OA

All data rates are 10 kbps for serial signals and 10 KPIU for parallel signals.
 The RZ signals have a 50% duty cycle.
 All rise and fall times are 1 us.

EUTA (remove RED signal)

Waveform pattern active

RED Signal #1

Carrier Frequency 1 (MHz): 31

Carrier Level 1 (dB): 0

Noise Level 1 (%): 0

Waveform Selection 1

Rd Serial RZ

Rt Serial RZ

Rd Serial NRZ

Rt Serial NRZ

Rd Parallel RZ

Rt Parallel RZ

Rd Parallel NRZ

Rt Parallel NRZ

RED Signal #2

Carrier Frequency 2 (MHz): 51

Carrier Level 2 (dB): 0

Noise Level 2 (%): 0

Waveform Selection 2

Rd Serial RZ

Rt Serial RZ

Rd Serial NRZ

Rt Serial NRZ

Rd Parallel RZ

Rt Parallel RZ

Rd Parallel NRZ

Rt Parallel NRZ

RED Signal #3

Carrier Frequency 3 (MHz): 81

Carrier Level 3 (dB): 0

Noise Level 3 (%): 0

Waveform Selection 3

Rd Serial RZ

Rt Serial RZ

Rd Serial NRZ

Rt Serial NRZ

Rd Parallel RZ

Rt Parallel RZ

Rd Parallel NRZ

Rt Parallel NRZ

RED Signal #4

Carrier Frequency 4 (MHz): 91

Carrier Level 4 (dB): 0

Noise Level 4 (%): 0

Waveform Selection 4

Rd Serial RZ

Rt Serial RZ

Rd Serial NRZ

Rt Serial NRZ

Rd Parallel RZ

Rt Parallel RZ

Rd Parallel NRZ

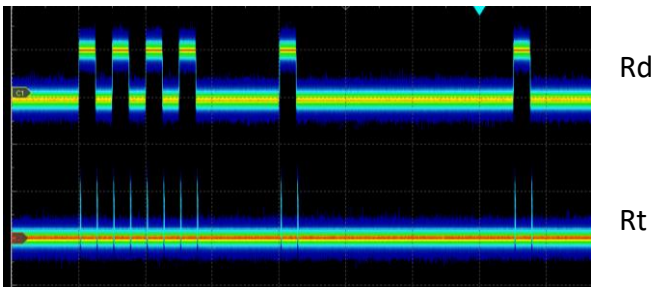
Rt Parallel NRZ

Select the ASCII code for RED Signal #4. ASCII Code #4: Standard

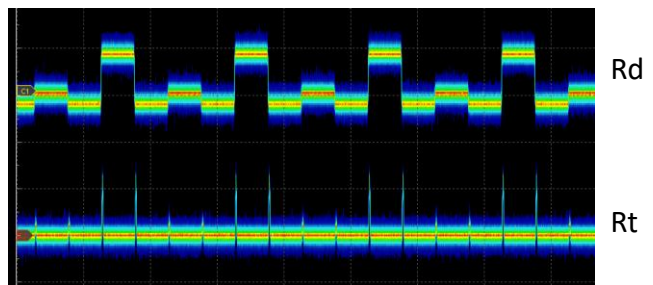
To Hide Controls: Erase the password and click the ENTER button. *****

To Reveal Controls: Type in the password and click the ENTER button.

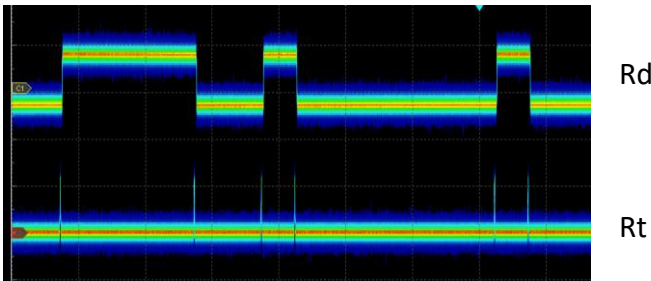
Serial RZ Pattern of "O Sp ..."



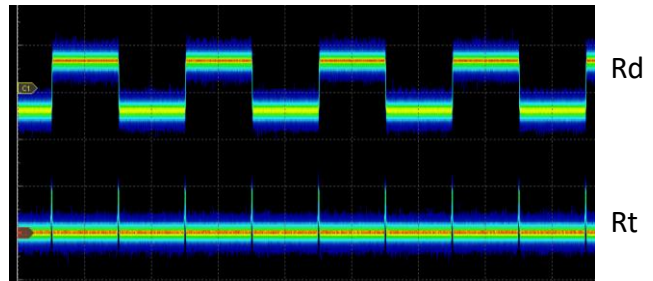
Parallel RZ Pattern of "O Sp ..."



Serial NRZ Pattern of "O Sp ..."



Parallel NRZ Pattern of "O SP ..."



A fully-configured four-channel Model 4TES is available at \$24,900. Gaul TEMPEST Consulting can accept company or government purchase orders. Prices include free shipping.

Gaul TEMPEST Consulting Services LLC
 1241 W. Lobster Trap Drive
 Gilbert, AZ 85233
 480-223-7368