

SunSet E20 Application Series:

Dual BERT



SUNRISE TELECOM
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... a step ahead

1. Introduction

When normally configuring and testing E1 lines, a single transmitter and receiver is required to send a test pattern and perform a Bit Error Rate Test (BERT) on the test pattern with additional results for other errors, alarms, signal level, frequency, ITU-T G.821, ITU-T G.826, ITU-T M.2100/550, and more. For out-of-service and in-service tests, an E20 with Dual BERT capability can perform two simultaneous tests and measurements thus saving time and allowing the user to be more

efficient. Unavailable in test sets that have a single (or even two) transmitter(s) and two receivers, the E20's Dual BERT capability is an effective tool in testing multiple applications including out-of-service installation, bi-directional drop and insert testing, non-intrusive bi-directional monitoring, and testing multiplex equipment. Some of the applications and the associated benefits/measurements for Dual BERT capability are shown as follows:

2. Out-of-Service Dual BERT

2.1 Benefits

Test 2 E1 lines simultaneously on installation. Transmit the same test pattern on both Line 1 and Line 2 Tx and perform a BERT on Line 1 Rx and Line 2 Rx, respectively.

2.1 Measurement Results

:Line 1&2 Status
Line 1&2 Summary
Line 1 or Line 2 Frequency (dependent on XMT CLOCK selection)
Line 1&2 G.821
Line 1&2 Alm/Sig
Line 1&2 M.2100/550
Line 1&2 G.826

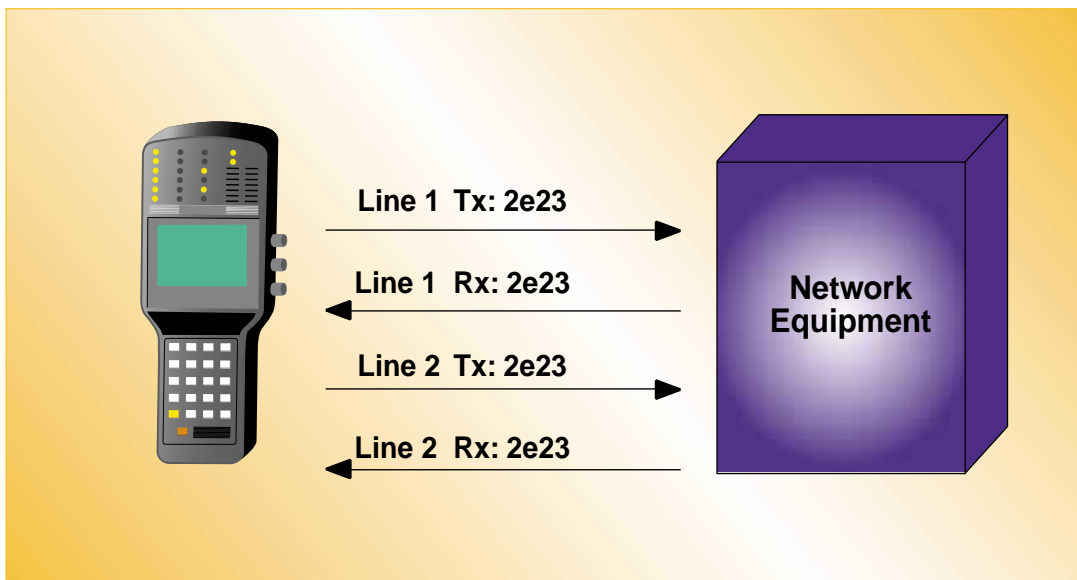


Figure 1 Out-of-Service Dual BERT installation of 2 E1 lines

3. In-Service Dual BERT Bi-directional Drop/Insert

3.1 Benefits

Transmit and receive the same test pattern for both directions simultaneously (i.e. perform a test towards the Customer Equipment and another towards the Network Equipment). In a THRU mode configuration Nx64K channels can be testing without disrupting other channels.

3.2 Measurement Results

Line 1&2 Status
Line 1&2 Summary
Line 1 or Line 2 Frequency(dependent on XMT CLOCK selection)
Line 1&2 G.821
Line 1&2 Alm/Sig
Line 1&2 M.2100/550
Line 1&2 G.826

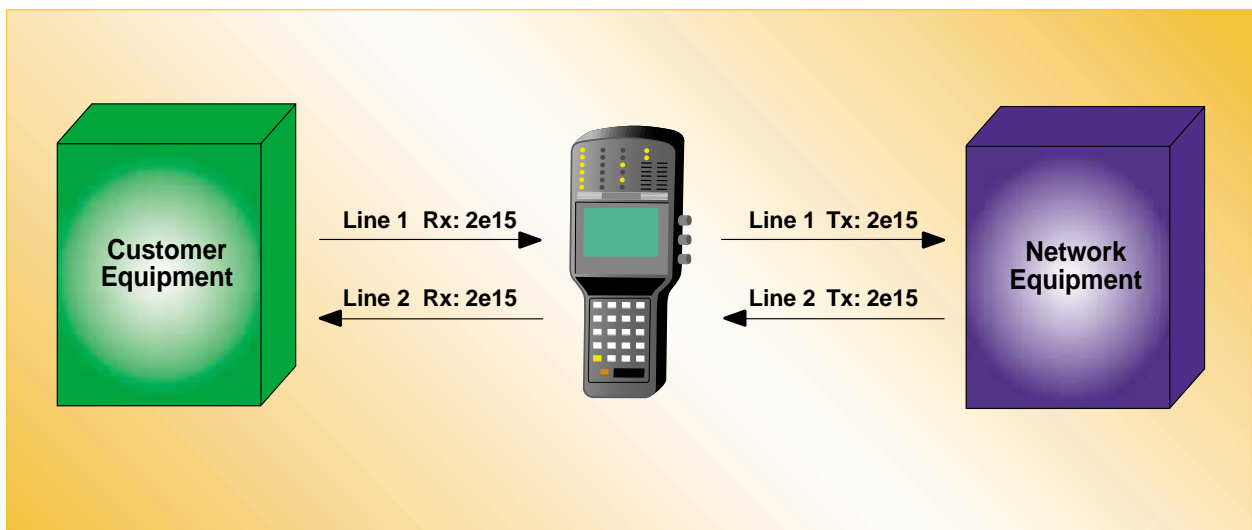


Figure 2 In-Service Dual BERT Bi-directional Drop/Insert

4. In-Service Dual BERT Datacom Y-Monitor

4.1 Benefits

Bi-directional non-intrusive monitor of DTE and DCE test pattern (requires the same test pattern for both DTE and DCE for pattern synchronization on E20).

4.2 Measurement Results

Datacom Status
Datacom Summary (for DTE & DCE)
DTE & DCE G.821
DTE & DCE Block Error Measurements

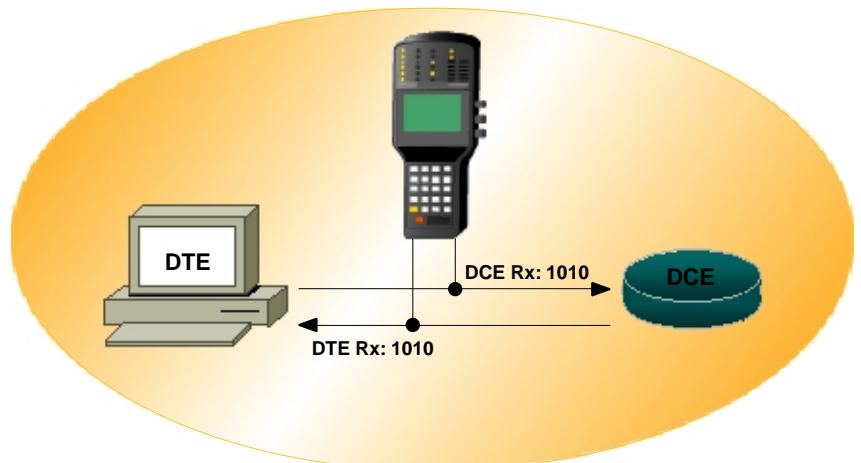


Figure 3 In-Service Dual BERT Datacom Y-Monitor

5. In-Service Dual BERT E1-Mux Emulation

5.1 Benefits

Transmit and receive the same test pattern for Datacom and E1 side simultaneously or monitor both E1 and Datacom interfaces

5.2 Measurement Results

Line 1 or 2 Status (dependent on Rx/Drop selection)

Datacom Status

Line 1 or 2 Summary (dependent on Rx/Drop

selection)

Datacom Summary

Line 1 or Line 2 Frequency (dependent on XMT CLOCK selection)

Line 1 or Line 2 G.821 (dependent on Rx/Drop selection)

Line 1 & 2 Alm/Sig

Line 1 & 2 M.2100/550

Datacom Block Error Measurement

Line 1 & 2 G.826

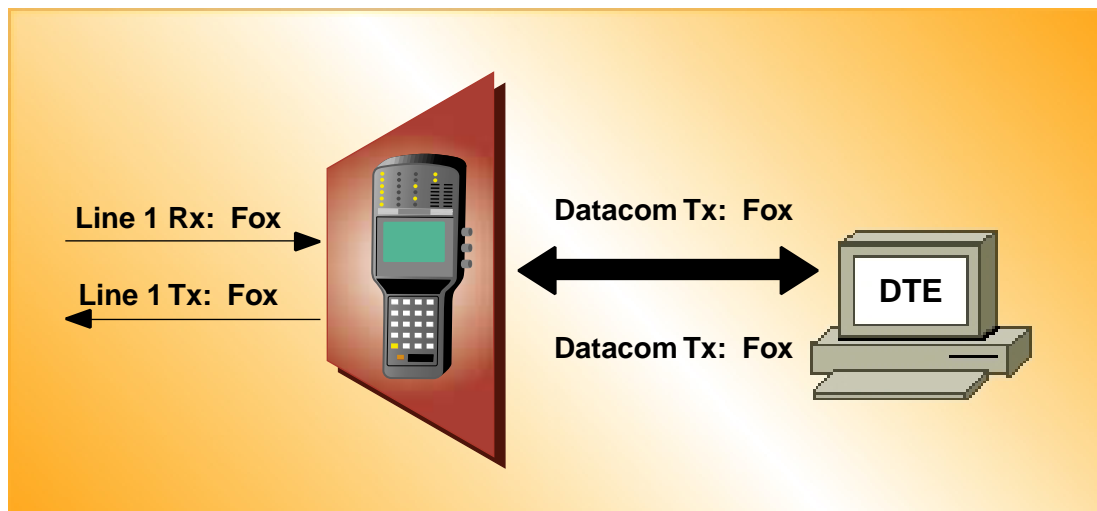


Figure 4 In-Service Dual BERT E1-Mux Emulation

6. MuxTest

6.1 Benefits

Transmit and receive the same test pattern from Datacom to E1 side and from E1 to Datacom side simultaneously.

6.2 Measurement Results

Line 1 or 2 Status(dependent on Rx/Drop selection)
Datacom Status
Line 1 or 2 Summary(dependent on Rx/Drop selection)

Datacom Summary
Line 1 or Line 2 Frequency(dependent on XMT CLOCK selection)
Line 1 or Line 2 G.821(dependent on Rx/Drop selection)
Datacom Bit Error(dependent on Rx/Drop selection)
Line 1 or 2 Alm/Sig(dependent on Rx/Drop selection)
Line 1 or 2 M.2100/550(dependent on Rx/Drop selection)
Datacom Block Error Measurement
Line 1 or 2 G.826(dependent on Rx/Drop selection)

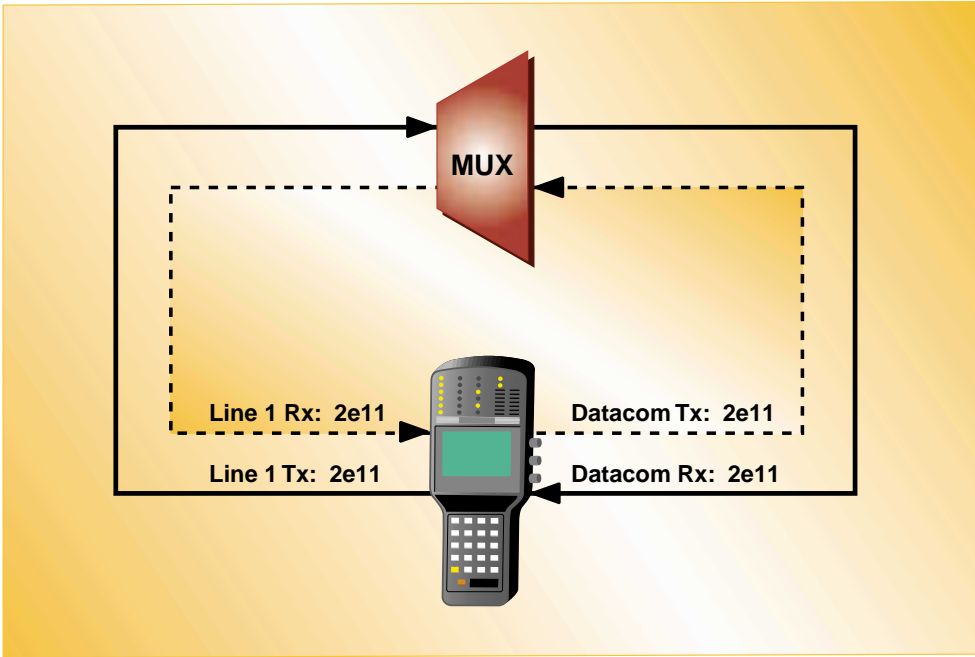


Figure 5 MuxTest

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