Anritsu

MD1230/MP1590Family Option-16

10GbE Link Fault Signaling

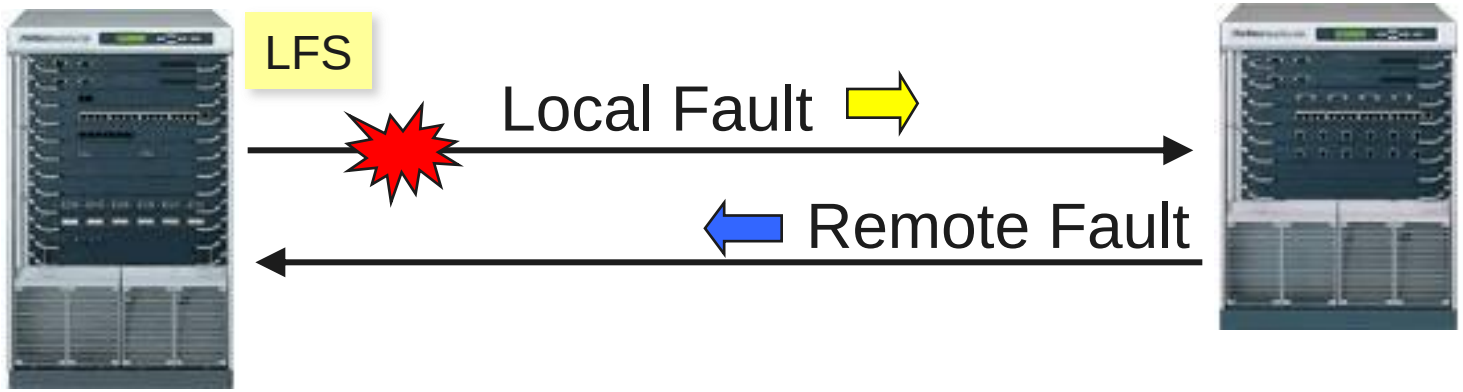
MD1230B/MP1590B (MU120138A-03)

10GbE Link Fault Signaling Product Introduction

IP Network Measurement Division
Anritsu Corporation

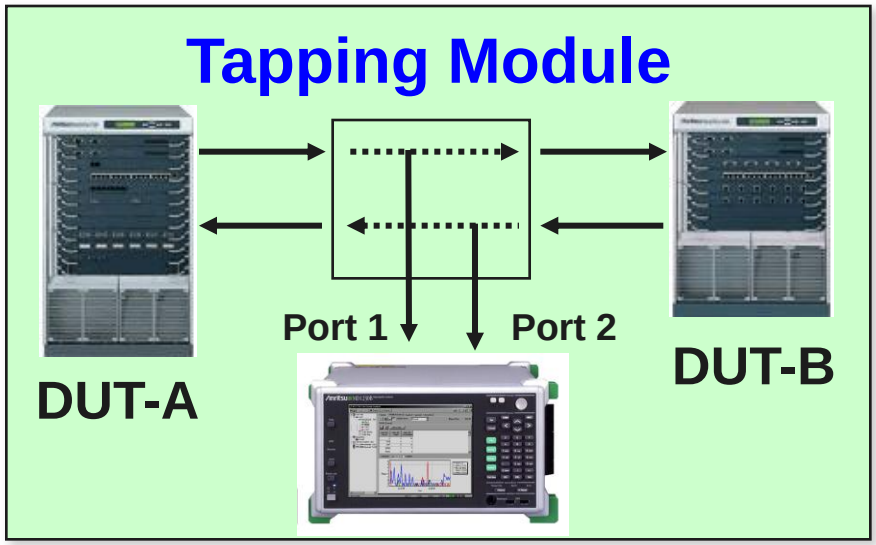
Link Fault Signalling

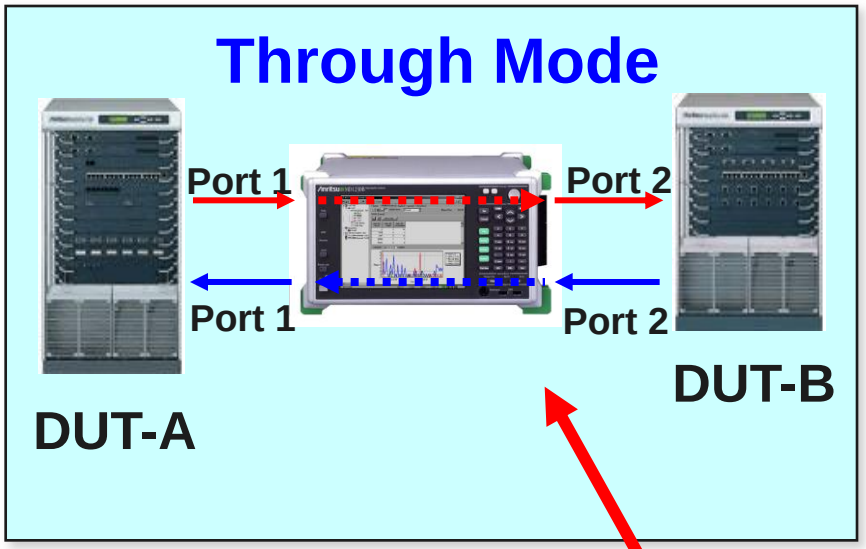
- **Overview**
  - ✓ **Traditional Ethernet has no function for detecting network faults.**
  - ✓ **This issue is important for 10 Gbps WAN applications.**
  - ✓ **10 GbE has a function for detection and notification of physical layer faults.**
    - × **Link Fault Signalling (LFS)**
  - ✓ **Link Fault Signalling (LFS) sends physical layer alarms.**
    - × **LF (Local Fault) signal**
    - × **RF (Remote Fault) signal**
  - ✓ **The MD1230B family measures LFS using software Option-16**

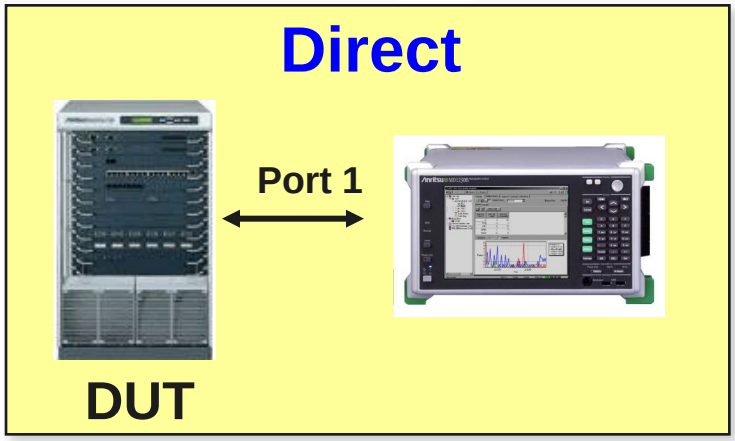


Connection

- **Supports Three Connection Types**







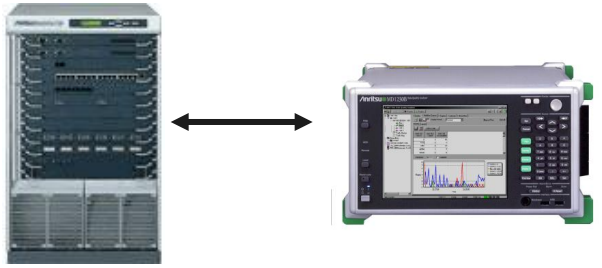
No separate tapping module required

Application

LFS Monitoring

- Check LFS sequence
- Test interoperability
- Troubleshooting

Transmit LF & RF Signals



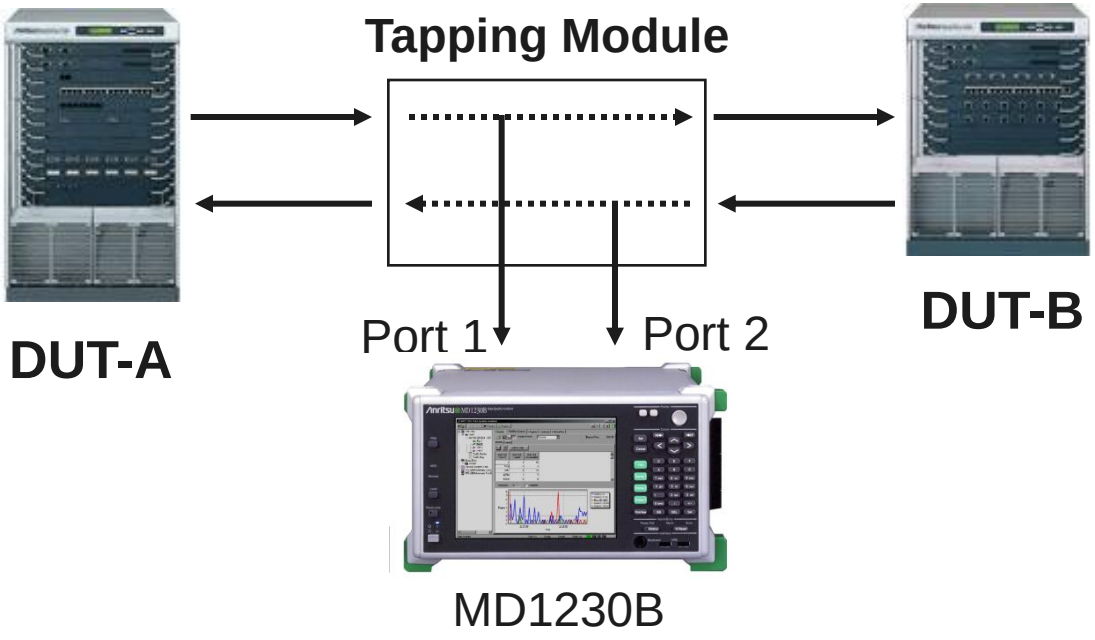
- Check LFS sequence
- Perform abnormality tests

LFS Emulation

- Connect to equipment supporting LFS

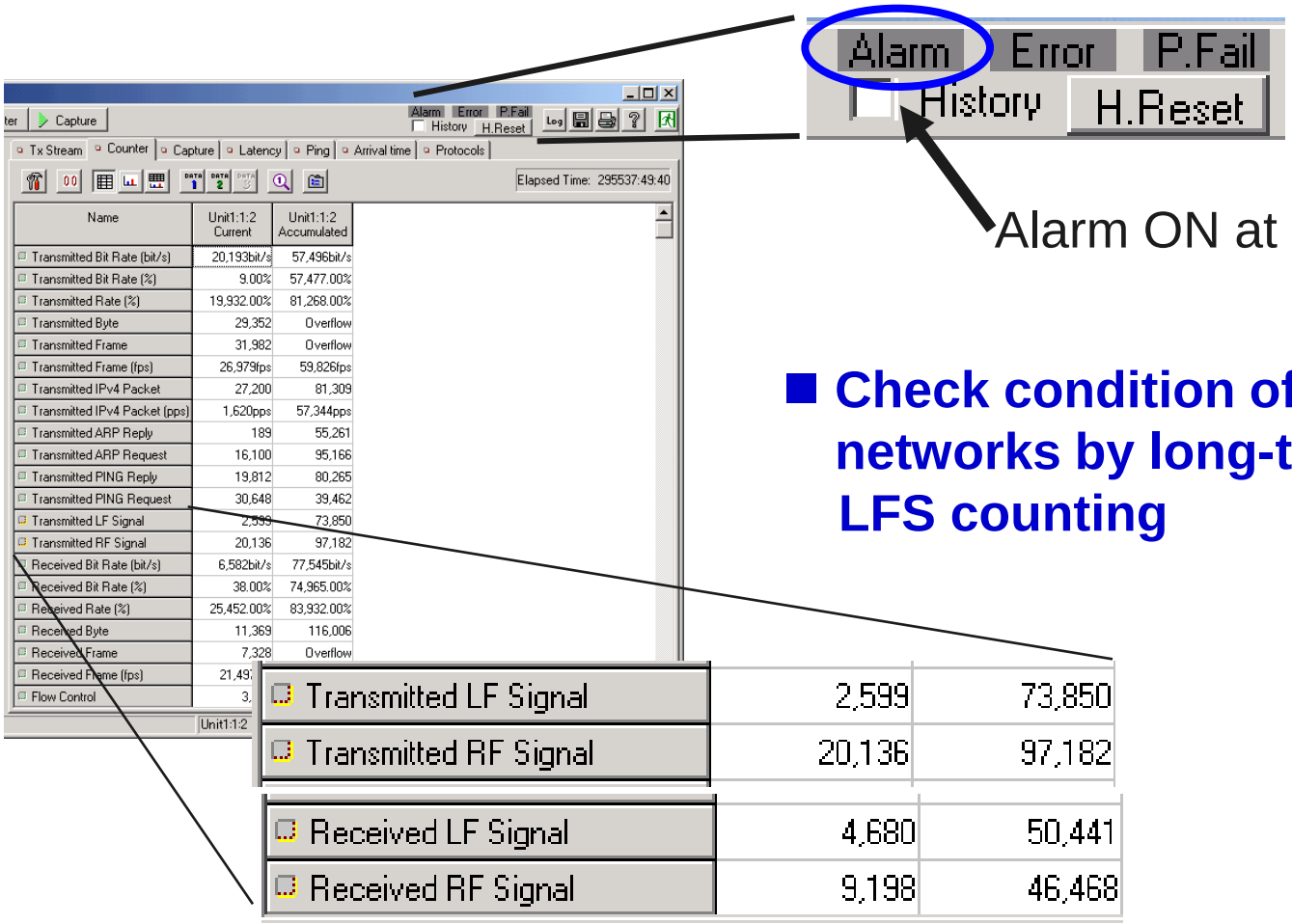
LFS Monitoring

- **Applications**
  - ✓ **Captures and analyzes LFS data**
    - × **Supports both Tapping Module and Through Mode capture**
  - ✓ **Generates and analyzes IP and Ethernet frames simultaneously**



LFS Monitoring

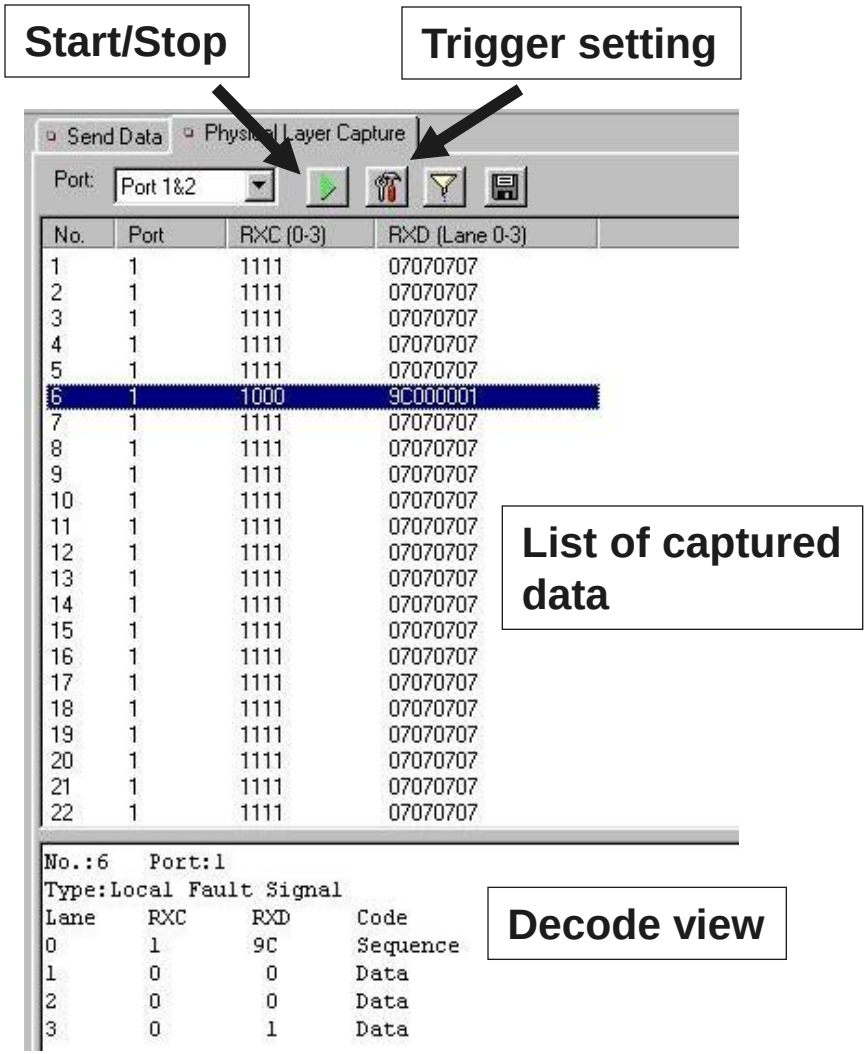
➢ LFS Alarm and Counters



- **Check condition of 10 GbE networks by long-term LFS counting**

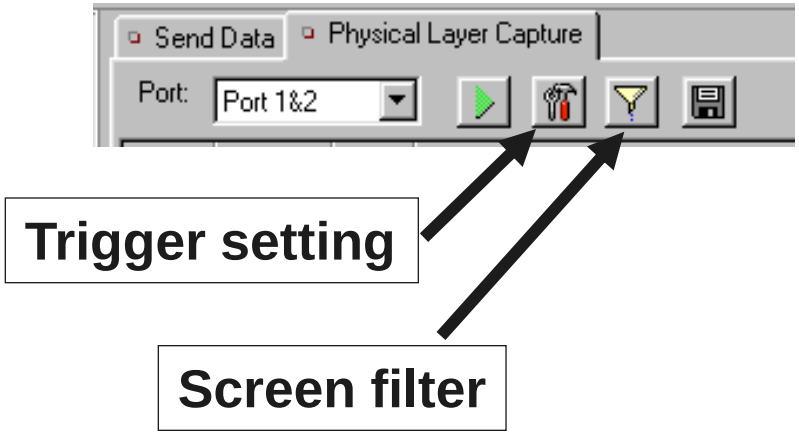
LFS Monitoring

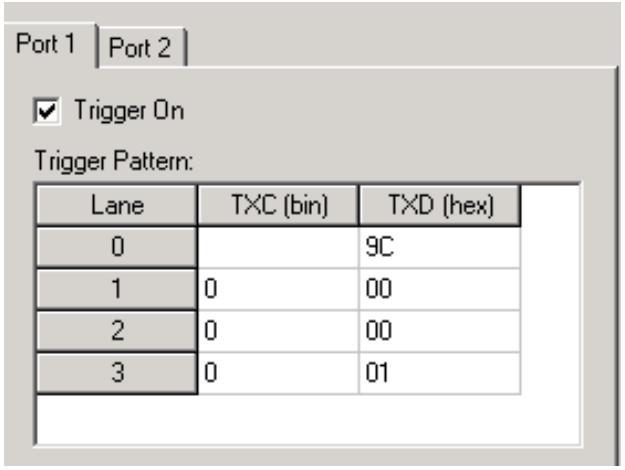
- **Capture and Decode**
  - ✓ **Capture and analyze LFS signals**
  - ✓ **Analyze XGMII data**
    - × **Idle code**
    - × **Start code**
    - × **others …**

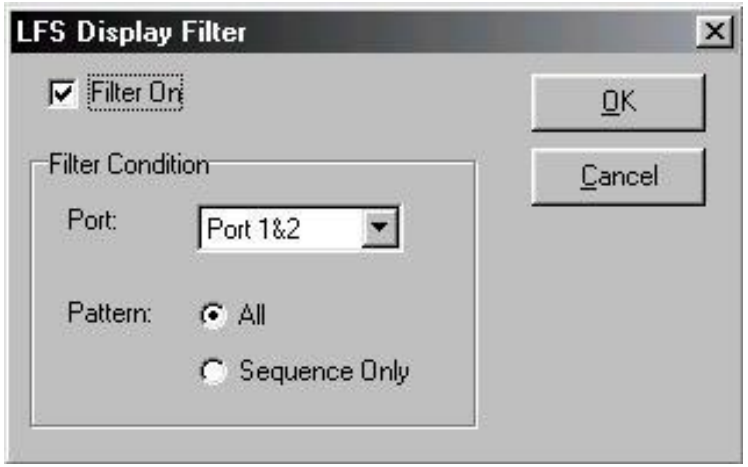


LFS Monitoring

- **Efficient Troubleshooting**
  - ✓ **Trigger and filter functions select important data**
  - ✓ **Solve problems quickly and efficiently**

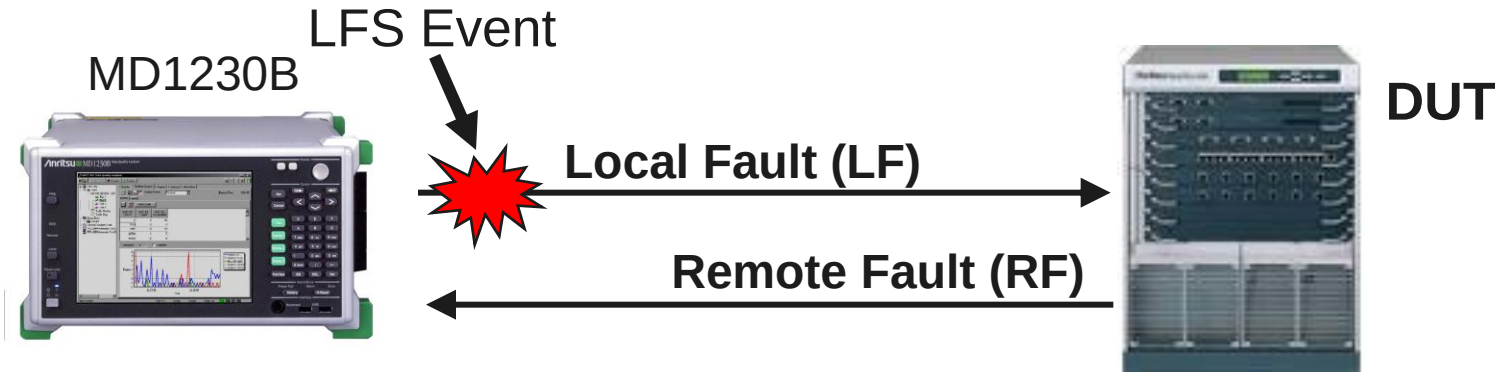






XGMII Code Transmission

- **Functions**
  - ✓ **Complete LFS event by transmitting LF or RF signals**
  - ✓ **Check functionality by transmitting edited XGMII code sequence**

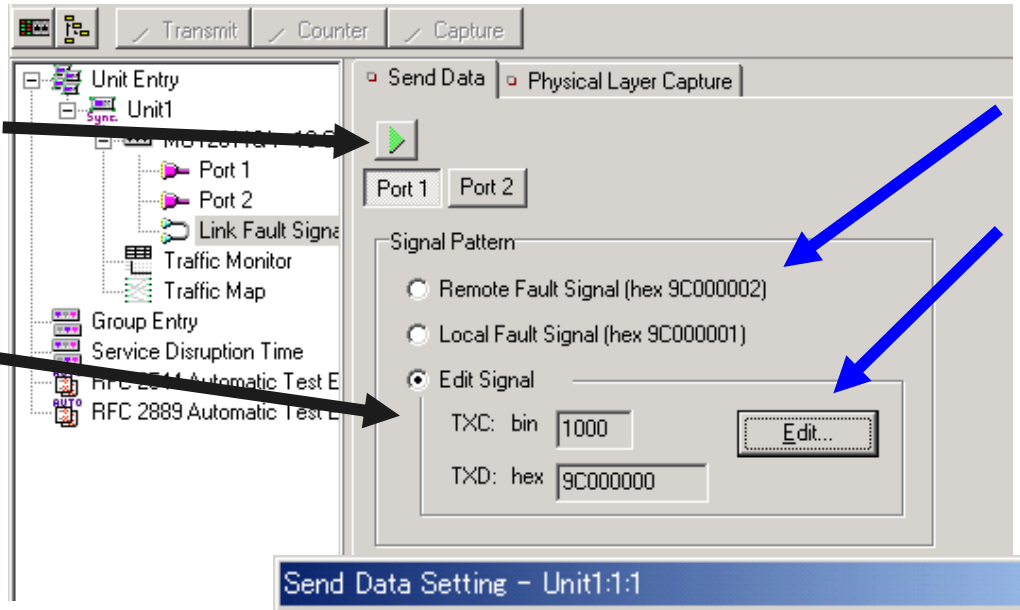


- **Check LFS sequence**
- **Perform abnormality tests**

XGMII Code Transmission

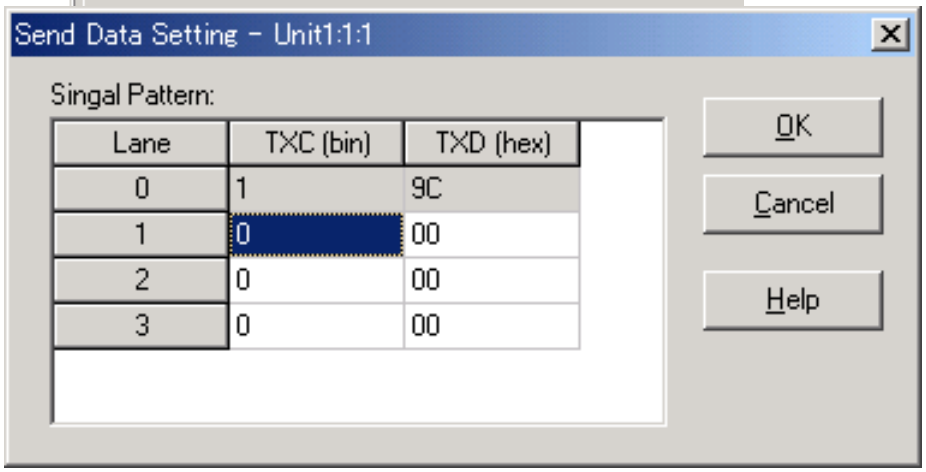
Transmit On/Off

Choose transmit codes



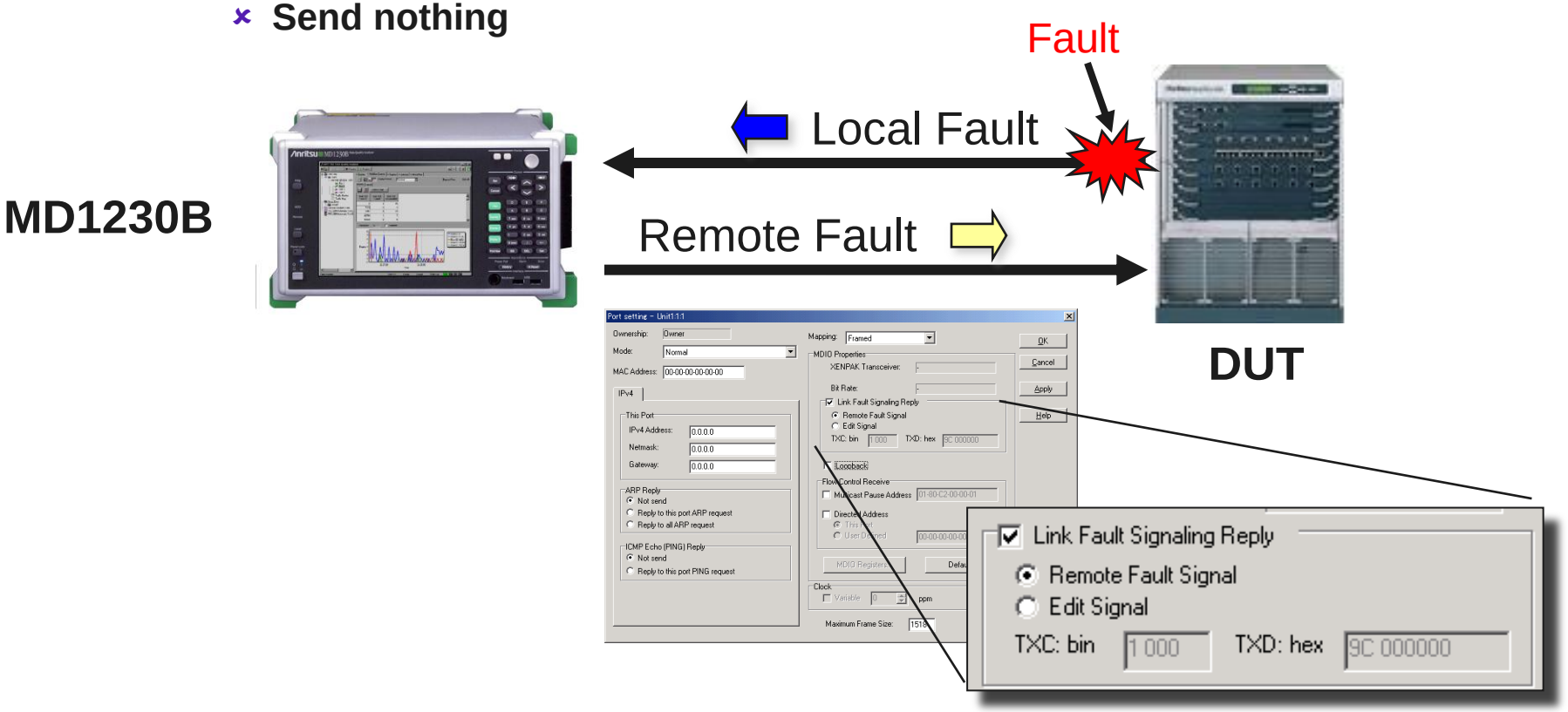
- **Choose LF or RF signal**
- **Select "Edit Signal" to edit any code sequence**

Transmit code edit screen



LFS Emulation

- **Connect to Equipment Supporting LFS**
  - ✓ **Respond to received LF signal**
    - × **Send RF**
    - × **Send edited signal**
    - × **Send nothing**



Others

➢ Save and Load

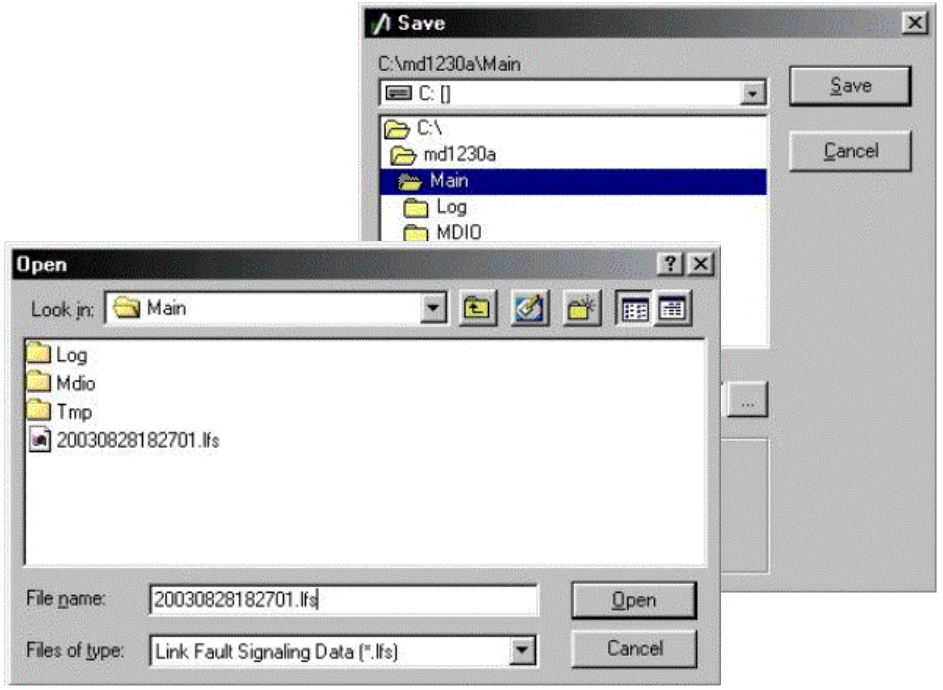
Microsoft Excel - sample_of_LFS.csv

ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) ツール(T) データ(D)

F97

	A	B	C	D
1	Title: MU120118A 10 Gigabit Ethernet LFS Capture Re			
2	Unit: MU120118A 10 Gigabit Ethernet			
3	Port No.: 1 and 2			
4	Save Date: 2003			
5	Start Time: 2003			
6	No.	Port	RXC (0-3)	RXD (Lane 0-3)
83	77	1	0	FF83DF17
84	78	1	0	32094ED1
85	79	1	0	E7CD4EC2
86	80	1	0	9DC635C0
87	81	1	0	B8362589
88	82	1	0	2AE44656
89	83	1	1111	FD070707
90	84	1	1111	07070707
91	85	1	1111	07070707
92	86	1	1000	FB555555
93	87	1	0	555555D5
94	88	1	0	00000000
95	89	1	0	00000000
96	90	1	0	00000000
97	91	1	0	08004500
98	92	1	0	00000002
99	93	1	0	40004000
100	94	1	0	3CCE7F00
101	95	1	0	00017F00
102	96	1	0	0001F6F6
103	97	1	0	2828000C
104	98	1	0	FF83DF17
105	99	1	0	32094ED1
106	100	1	0	E7CD3C41

Excel sample



- **"Capture Summary" saved as .csv file**
- **Easy import into Excel for reports**

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Specifications are subject to change without notice.

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