



LINMON SHARED LINE

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Revision:
A

Using LINMON on a Shared Line

1.1 Introduction

LINMON (Line Monitoring) is a MISER tool that monitors communications on the NCC data line. It can be used to monitor communication messages coming from two NCCs on the same physical line. These NCCs can use different communication protocols, such as the HSQ RTU protocol and DNP3 protocol.

1.2 Procedure

This program is accessed through the MISER command, **TOOLS**. At the prompt, enter `TOOLS` and press <Return> and then enter `LINMON` and press <Return>.

```
DEMUSA$ TOOLS  
DEMUSA$ LINMON
```

The following prompt displays:

```
Enter NCC id, or Q for Quit [Default = 1]:1  
Enter R (Monitor RTU), L (Monitor Line), or Q for Quit: [Default = R]L  
Enter line #, or Q for Quit [Default = 1]:1  
Enter H(HEX) or A(ASCII) [Default = H ]:H  
Enter File Name or C/R for Only the Terminal:
```

In order to monitor two NCCs on the same line, specify two NCC numbers at the “Enter NCC ids, or Q for Quit [Default = 1]” prompt. For instance, 1,3.

If two NCCs are monitored, the fourth line (from above) will change to:

```
Enter First NCC H(HEX) or A(ASCII) [Default = H ]:R  
Enter Second NCC H(HEX) or A(ASCII) [Default = H ]:D
```

To enable the HSQ RTU display format, use option “R” (not listed) at the “Enter H(HEX) or A(ASCII)” prompt. These messages start with a number.

To enable the DNP3 display format, use option “D” (not listed) at the “Enter H(HEX) or A(ASCII)” prompt. All messages sent to the DNP3 device start with “X”. All messages received from the DNP3 device start with “R”.

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1.3 Example

```
DEMVSA$ linmon
Enter NCC ids, or Q for Quit [Default = 1]:1,3
Enter R (Monitor RTU), L (Monitor Line), or Q for Quit: [Default = R]L
Enter line #, or Q for Quit [Default = 1]:
Enter First NCC H(HEX) or A(ASCII) [Default = H ]:R
Enter Second NCC H(HEX) or A(ASCII) [Default = H ]:D
Enter File Name or C/R for Only the Terminal:
X0564 <014> (C4=UUD) To:15 From:1024 {45D0}
  [TT,SEQ:24] CF 01 3C 02 06 3C 03 06 {EC7C}
xAPDU:FIR FIN SEQ:15 READ
CLASS 1  Obj:60 Var:2 Qualifier=6 Nobj=0
CLASS 2  Obj:60 Var:3 Qualifier=6 Nobj=0

R0564 <010> (44=UUD) To:1024 From:15 {1DE2}
  [TT,SEQ: 0] CF 81 00 00 {CBD9}
rAPDU:FIR FIN SEQ:15 RESPONSE

0240<-0000 <0010> (CyQ,2) {074C}
X0564 <005> (C0=RLS) To:196 From:1024 {3598}

0242<-0000 <0010> (CyQ,2) {DECD}
X0564 <005> (C0=RLS) To:210 From:1024 {863D}

0242<-0000 <0010> (CyQ,2) {DECD}
X0564 <005> (C0=RLS) To:216 From:1024 {BBBB}

0242<-0000 <0010> (CyQ,2) {DECD}
X0564 <005> (C0=RLS) To:233 From:1024 {DD43}

0242<-0000 <0010> (CyQ,2) {DECD}
X0564 <005> (C0=RLS) To:239 From:1024 {C9C1}

0245<-0000 <0010> (CyQ,2) {388C}
X0564 <005> (C0=RLS) To:241 From:1024 {8F4B}

0245<-0000 <0010> (CyQ,2) {388C}
X0564 <005> (C0=RLS) To:244 From:1024 {9188}

0245<-0000 <0010> (CyQ,2) {388C}
X0564 <014> (C4=UUD) To:15 From:1024 {45D0}
  [TT,SEQ:25] C0 01 3C 02 06 3C 03 06 {E053}
xAPDU:FIR FIN SEQ: 0 READ
CLASS 1  Obj:60 Var:2 Qualifier=6 Nobj=0
CLASS 2  Obj:60 Var:3 Qualifier=6 Nobj=0

R0564 <010> (44=UUD) To:1024 From:15 {1DE2}
  [TT,SEQ: 1] C0 81 00 00 {CB9A}
rAPDU:FIR FIN SEQ: 0 RESPONSE
```

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Example (cont.)

```
0245<-0000 <0010> (CyQ,2) {388C}
X0564 <005> (C0=RLS) To:27 From:1024 {BB48}

0390<-0000 <0010> (CyQ,2) {C9DB}
0000<-0390 <0010> (3) {4561}
X0564 <005> (C0=RLS) To:215 From:1024 {98FE}

0390<-0000 <0014> (NAK,2)
      [004] (Req,63=STR) 00128 {DAA5}
0000<-0390 <0010> (3) {4561}
X0564 <014> (C4=UUD) To:15 From:1024 {45D0}
      [TT,SEQ:26] C1 01 3C 02 06 3C 03 06 {D87B}
xAPDU:FIR FIN SEQ: 1 READ
CLASS 1  Obj:60 Var:2 Qualifier=6 Nobj=0
CLASS 2  Obj:60 Var:3 Qualifier=6 Nobj=0

R0564 <010> (44=UUD) To:1024 From:15 {1DE2}
      [TT,SEQ: 2] C1 81 00 00 {6C78}
rAPDU:FIR FIN SEQ: 1 RESPONSE

X0564 <005> (C0=RLS) To:239 From:1024 {C9C1}

0390<-0000 <0024> (6)
      [014] (Req,60=SRT) 00390 30-OCT-2020 13:59:46.000 FRI S {1930}
0000<-0390 <0010> (7) {8563}
0390<-0000 <0016> (0)
      [006] (45=STA) ID:390 00000 {74FA}
0000<-0390 <0018> (1)
      [008] (2=RSR,7=US) 00390 9000 00005 {BE94}
0390<-0000 <0016> (2)
      [006] (Req,51=FLU) ID:390 00000 {60D2}
0000<-0390 <0055> (3)
      [007] (8=IRV,1=DI) (07177=5EB4-BP05-OKAY 000000(0,0,0,0,0,0,0,0)
      [007] (8=IRV,1=DI) (07178=9AB1-AC-AUTO 000000(0,0,0,0,0,0,0,0)
      [007] (8=IRV,2=AI) (07180=9AB1-AC-TRIP 000000(0,0,0,0,0,0,0,0)
      [007] (8=IRV,2=AI) (07181=9AB1-BP01-AUTO 000000(0,0,0,0,0,0,0,0)
      [007] (8=IRV,4=DV) (07179=9AB1-AC-LOC 000000(0,0,0,0,0,0,0,0)
      [010] (F=EIN,7=US) 000 000 00390 9000 00005 {E499}
0015<-0000 <0010> (CyQ,2) {0303}
0115<-0000 <0010> (CyQ,2) {7204}
0240<-0000 <0010> (CyQ,2) {074C}
0242<-0000 <0010> (CyQ,2) {DECD}
X0564 <014> (C4=UUD) To:15 From:1024 {45D0}
      [TT,SEQ:27] C2 01 3C 02 06 3C 03 06 {3C8C}
xAPDU:FIR FIN SEQ: 2 READ
CLASS 1  Obj:60 Var:2 Qualifier=6 Nobj=0
CLASS 2  Obj:60 Var:3 Qualifier=6 Nobj=0

R0564 <010> (44=UUD) To:1024 From:15 {1DE2}
      [TT,SEQ: 3] C2 81 00 00 {453F}
rAPDU:FIR FIN SEQ: 2 RESPONSE

0245<-0000 <0010> (CyQ,2) {388C}
Enter NCC ids, or Q for Quit [Default = 1, 3]:q
```