Orion2 Ethernet to E1 converter Application Note (#20070202)

Summary

The following Orion2 models from FlexDSL Telecommunications AG can also be used as ***Ethernet*** to ***E1*** converter:

FG-PAM-SAN-E1B/Eth, V50
FG-PAM-SA2N-2E1B/Eth, V51
FG-PAM-RAIL2N-2E1B/Eth, V51
FG-PAM-SRL-E1B/4Eth-RP, V60
FG-PAM-SRL-2E1B/4Eth-RP, V62
FG-PAM-SR2L-2E1B/4Eth-RP, V63
FG-PAM-SR2L-4E1B/4Eth-RP, V65
FG-PAM-SR4L-4E1B/4Eth-RP, V66

Please **Note**:
The unit **cannot** be used for E1 over Ethernet transport!!!

Contents

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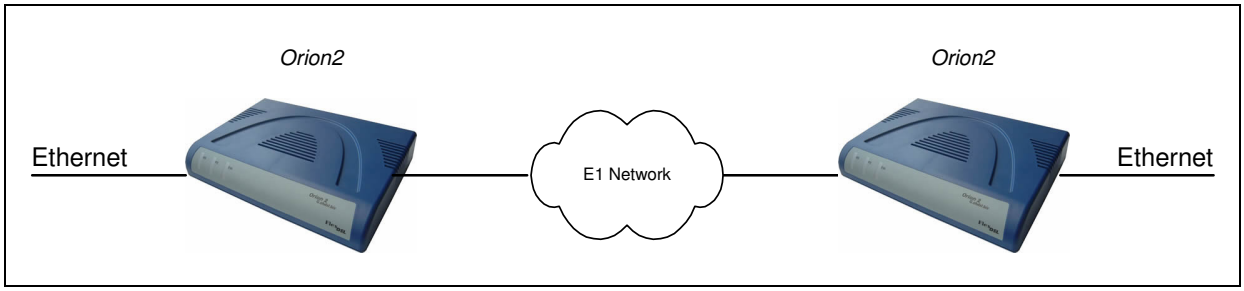
Example 1 „Ethernet over E1“



Setup:
The settings “DSL1, E1-1” below shows the setup for unframed 2048kbps E1 link.
The settings “DSL2, E1-2” below shows the setup for framed 2048kbps E1 link.

```
CP_CM>CONFIG
-------------------------------------------------------------------------------
Running Line Configuration
-------------------------------------------------------------------------------

xDSL                DSL1           DSL2
  Mode          :   Slave(HTU-R)   Slave(HTU-R)
  Line coding   :   PAM32          PAM32
  Baserate      :   89             89
  Annex         :   B              B
  Payload       :   NONE           NONE
  Clock source  :   E1-1,Int       E1-2,Int
  Reserve       :   ---            ---

E1                  E1-1           E1-2
  G.704 framing :   OFF            ON
  CRC4          :   N/A            ON
  AIS Detection :   ON             ON
  AIS Generation:   ON             ON
  TS into DSL   :   NONE           NONE
  TS into WAN   :   0-31           1-31
-------------------------------------------------------------------------------
CP_CM>
```

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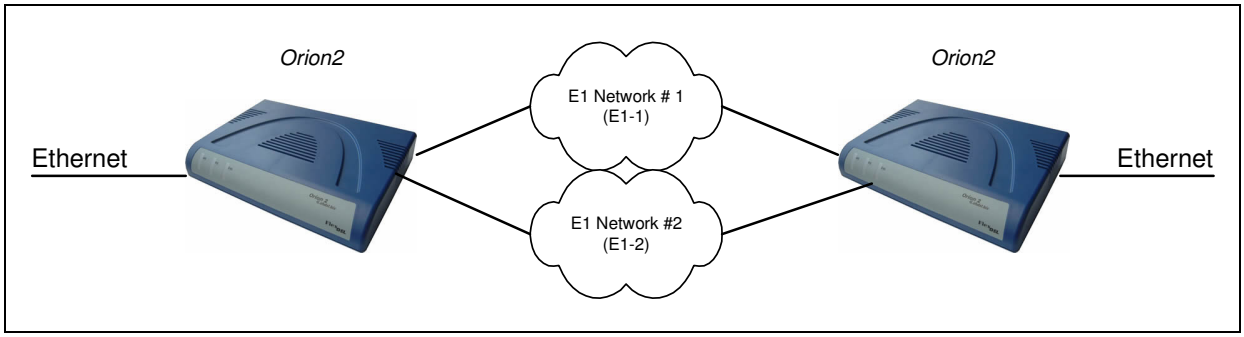
Example 2 „Ethernet over E1 1+1 security mode“

The Ethernet link will continue working in case of a one broken E1 line.



Setup:

The settings below show the setup for unframed 2048kbps E1 link for units that have to work in the 1+1 security mode.

```
CP_CM>CONFIG
--------------------------------------------------------------------------------
Running Line Configuration
--------------------------------------------------------------------------------

xDSL                DSL1          DSL2
  Mode           :  Slave(HTU-R)  Slave(HTU-R)
  Line coding    :  PAM32         PAM32
  Baserate       :  89            89
  Annex          :  B             B
  Payload        :  NONE          NONE
  Clock source   :  E1-1,Int      E1-2,Int
  Reserve        :  ---           ---

E1                  E1-1          E1-2
  G.704 framing :  OFF           OFF
  CRC4          :  N/A           N/A
  AIS Detection :  ON            ON
  AIS Generation:  ON            ON
  TS into DSL   :  NONE          NONE
  TS into WAN   :  0-31          0-31
--------------------------------------------------------------------------------
CP_CM>
```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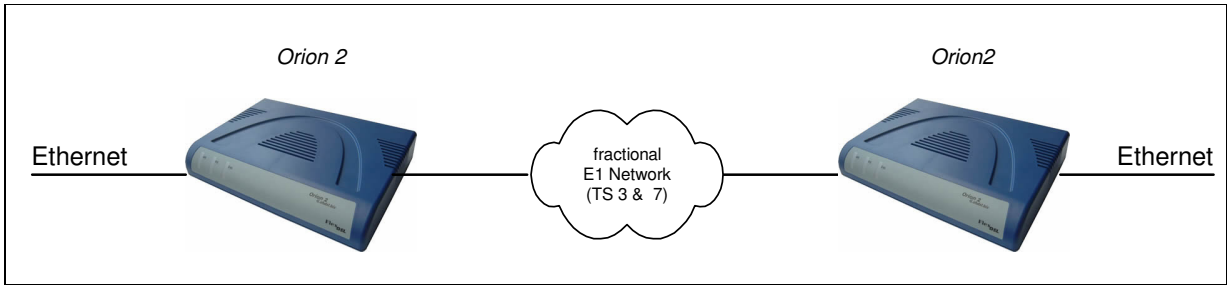
Example 3 „Ethernet over fractional E1“

The settings below show the setup for an Ethernet over fractional framed 128kbps E1 link.
In this sample, time slots 3 and 7 in the E1 are used for Ethernet transport.



Setup:

```
CP_CM>CONFIG
-------------------------------------------------------------------------------
Running Line Configuration
-------------------------------------------------------------------------------

xDSL                DSL1
  Mode          :   Slave(HTU-R)
  Line coding   :   PAM32
  Baserate      :   89
  Annex         :   B
  Payload       :   E1-1
  Clock source  :   E1-1,Int

E1                  E1-1
  G.704 framing :   ON
  CRC4          :   ON
  AIS Detection :   ON
  AIS Generation:   ON
  TS into DSL   :   NONE
  TS into WAN   :   3,7
-------------------------------------------------------------------------------

CP_CM>
```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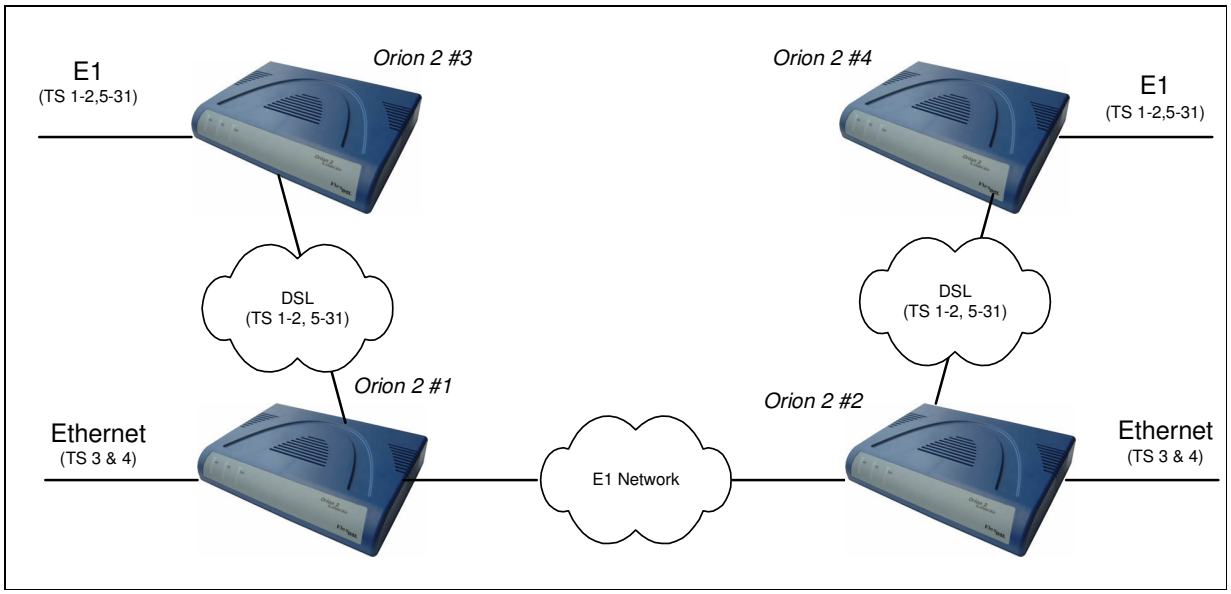
Example 4 „Mixed Ethernet / E1 over E1 & DSL“

The settings below show the setup for an Ethernet over framed E1 Network (2Ts = 128kpbs) and a fractional E1 (29Ts = 1856kpbs) over DSL and framed E1 Network.



Setup #1

```
xDSL                DSL1
  Mode          :   Master (HTU-C)
  Line coding   :   PAM32
  Baserate      :   89
  Annex         :   B
  Payload       :   E1-1
  Clock source  :   E1-1,Int

E1                  E1-1
  G.704 framing :   ON
  CRC4          :   ON
  AIS Detection :   ON
  AIS Generation:   ON
  TS into DSL   :   1-2,5-31
  TS into WAN   :   3-4
```

Setup #2

```
xDSL                DSL1
  Mode          :   Master (HTU-C)
  Line coding   :   PAM32
  Baserate      :   89
  Annex         :   B
  Payload       :   E1-1
  Clock source  :   E1-1,Int

E1                  E1-1
  G.704 framing :   ON
  CRC4          :   ON
  AIS Detection :   ON
  AIS Generation:   ON
  TS into DSL   :   1-2,5-31
  TS into WAN   :   3-4
```

Setup #3

```
xDSL                DSL1
  Mode          :   Slave (HTU-R)
  Line coding   :   PAM32
  Baserate      :   89
  Annex         :   B
  Payload       :   E1-1
  Clock source  :   E1-1,Int

E1                  E1-1
  G.704 framing :   ON
  CRC4          :   ON
  AIS Detection :   ON
  AIS Generation:   ON
  TS into DSL   :   1-2,5-31
  TS into WAN   :   NONE
```

Setup #4

```
xDSL                DSL1
  Mode          :   Slave (HTU-R)
  Line coding   :   PAM32
  Baserate      :   89
  Annex         :   B
  Payload       :   E1-1
  Clock source  :   E1-1,Int

E1                  E1-1
  G.704 framing :   ON
  CRC4          :   ON
  AIS Detection :   ON
  AIS Generation:   ON
  TS into DSL   :   1-2,5-31
  TS into WAN   :   NONE
```

For details about other possible configurations please refer to your FlexDSL representative, or call FlexDSL on +41 44 741 5290, or send an e-mail to info@flexdsl.ch.

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