

# 4xT1/E1 inline probe ASE

## With LinkSafe capabilities

### Key features

- Four management ports
- MLPPP support on IP Transport software
- Inband management capability
- LinkSafe technology
- Power loss detection
- Service Level Agreement (SLA) metrics
- Application analysis capability
- LMI spoofing
- LAN management port
- Realtime events

The Visual UpTime® Select™ 4xT1/E1 inline probe ASE enhances the data analysis functionality of the Visual UpTime Select system for enterprises with two-to-four T1 or E1 circuits terminating at a single location. The ASE provides up to 6.176 Mbps (T-standard) or 8.192 Mbps (E-standard) of detailed network traffic analysis and management, while maintaining full wire speed pass-through of all traffic. In its initial release, the ASE supports IP Transport software over MultiLink Point-to-Point Protocol (MLPPP) T1 links.

The 4xT1/E1 ASE includes LinkSafe™ technology to protect circuit integrity in case of a power outage and it also delivers a notification alarm if there is a power failure.

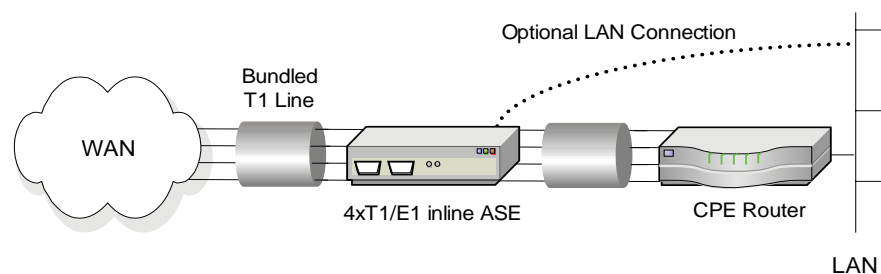
Designed for locations with multiple circuits terminating at a single device, the 4xT1/E1 is typically deployed as an inline probe between the service provider's edge device and the customer's termination equipment. The figure below highlights the multilink deployment for the 4xT1/E1 ASE.



4xT1/E1 inline probe model 807-0115 front



4xT1/E1 inline probe model model 807-0115 rear



4xT1/E1 inline probe model 807-0115 position on network



### 4xT1/E1 inline probe ASE specifications

General	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62"(4.1 cm)
	Weight	7 lbs.
	Data Rate	T1: 1.536 Mbps, E1: 1.984 Mbps
	Timing Mode	Derived externally from the T1 or E1 network, user interface, or internally from the ASE.
Environment	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 80%, noncondensing
Power Requirements	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
T1 Network Interface (Ports 1-4)	Line Rate	1.544 Mbps ±50 bps synchronous
	Line Format	B8ZS line coding
	Framing	ESF framing formats
	Input Signal	0dB to -36dB
	Output Signal	0, -7.5dB, -15dB, -22.5dB LBO
	Pulse Density	AT&T 62411
	Connector	100 ohm 8-pin modular jack—USOC: RJ48C
	Timing	Network or User
	Channel Selection	1 to 24 channels in any combination
E1 Network Interface (Ports 1-4)	Line Rate	2.048 Mbps ±102.4 bps synchronous
	Line Format	HDB3 line coding
	Framing	CRC4 or FAS framing formats
	Time Slot 16	CAS, CCS, or Data
	Input Signal	0dB to -43dB
	Output Signal	0dB
	Connector	120 ohm RJ-48C balanced and 75 ohm BNC unbalanced coaxial
	Channel Selection	1-31 (includes channel 16) or 1-15, 17-31 (does not include channel 16)
Serial Port Interface	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	RJ-45
Ethernet 10/100BaseT Interface	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

## Hardware Warranties

Enhanced Gold, Bronze, and International Gold ASE hardware warranty service programs are available to help you maximize your investment in Visual UpTime Select. For more detailed warranty information, visit: [www.flukenetworks.com/visualcustomercare](http://www.flukenetworks.com/visualcustomercare)

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# T1/E1 inline probe ASE

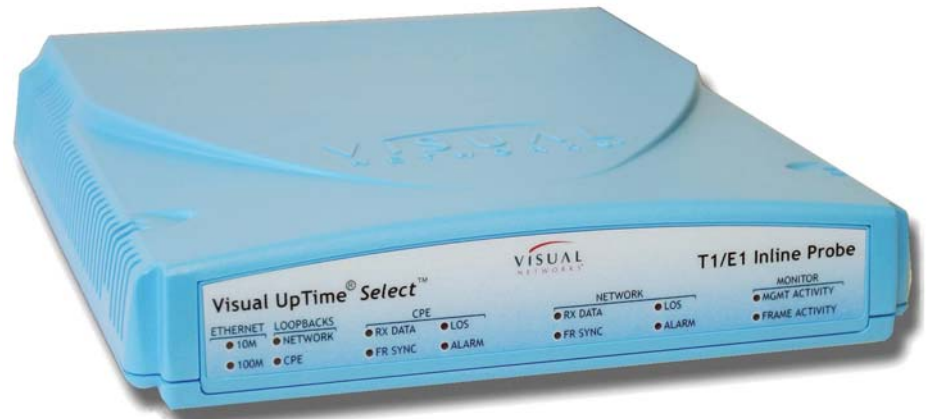
## With LinkSafe capabilities

### Key features

- Inband management capabilities
- LinkSafe technology
- Power loss detection
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Realtime events

The Visual UpTime® Select™ T1/E1 LinkSafe™ inline probe ASE is deployed inline on a T1 or E1 access line, typically between a service provider's edge device and CSU/DSU. This ASE supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and IP Transport software for deployment in frame relay or HDLC-based networks that use IP switching. The ASE also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

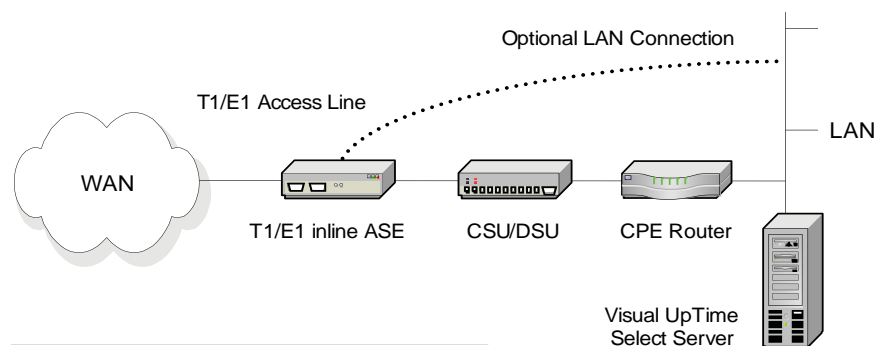
When configured for use on an E1 network, the ASE complies with the physical/electrical characteristics defined by ITU-T G.703 at 2.048 Megabits per second (Mbps). The ASE also complies with the synchronous frame structure specifications defined by ITU-T G.704, including the option to use channel 16 for data or signalling. You can either connect to the E1 network using a 120 ohm balanced cable or BNC coax 75 ohm unbalanced cables.



T1/E1 inline probe model 807-0113 front view



T1/E1 inline probe model model 807-0113 rear view



T1/E1 inline probe model 807-0113 position on network



T1/E1 inline probe ASE specifications		
General	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62" (4.1 cm)
	Weight	2.10 lbs.
	Data Rate	1.544 Mbps synchronous
	Timing Mode	Derived externally from the T1 or E1 network, user interface, or internally from the ASE.
Environment	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 80%, noncondensing
Power Requirements	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
T1 Network Interface	Line Rate	1.544 Mbps ±50 bps synchronous
	Line Format	AMI or B9ZS line coding
	Framing	ESF or D4 framing formats
	Input Signal	0dB to -36dB
	Output Signal	0, -7.5dB, -15dB, -22.5dB LBO
	Pulse Density	AT&T 62411
	Connector	8-pin modular jack—USOC: RJ48C
	Timing	Network, User, or Internal
	Channel Selection	1 to 24 channels in any combination
E1 Network Interface	Line Rate	2.048 Mbps ±102.4 bps synchronous
	Line Format	HDB3 or AMI line coding
	Framing	CRC4 or FAS framing formats
	Time Slot 16	CAS, CCS, or Data
	Input Signal	0dB to -43dB
	Output Signal	0dB to LBO
	Connector	RJ-45 (100 ohm balanced) or BNC (75 ohm unbalanced)
	Channel Selection	1-31 (includes channel 16 or 1-15, 17-31 (does not include channel 16)
Serial Port Interface	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	RJ-45
Ethernet 10/100BaseT Interface	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

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# 10/100 Ethernet inline ASE LE

## With LinkSafe capabilities

### Key features

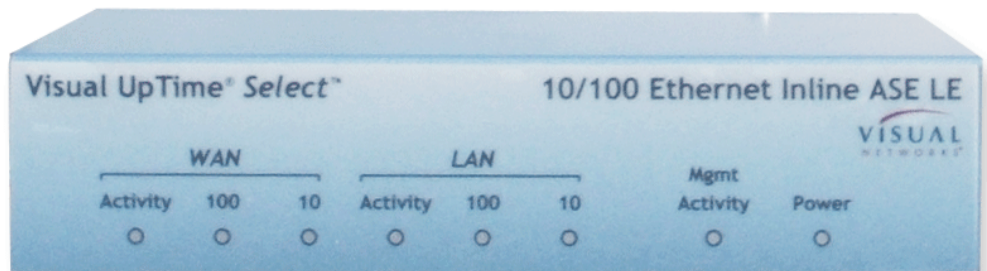
- Inline or SPAN mode deployment
- LinkSafe technology
- IP Transport or LAN Visibility software
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LAN management port
- Power loss detection
- Realtime events

The Visual UpTime® Select™ 10/100 Ethernet inline ASE LE enhances the analysis functionality of the Visual UpTime Select system for Ethernet networks. The ASE provides up to 6 Mbps of detailed network traffic analysis and management, while maintaining full wire speed pass-through of all traffic. It supports both IP Transport and LAN Visibility software. When deployed inline, the ASE includes LinkSafe™ technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

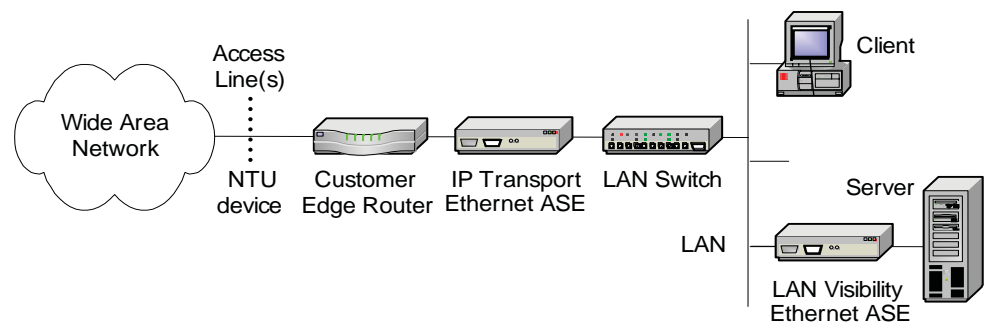
Designed for business class DSL and cable, the 10/100 Ethernet inline ASE LE has a wide variety of deployment options. The IP Transport Ethernet ASE is typically deployed as an inline probe on the access

line between LAN devices, such as the LAN switch and router (see figure). Other options include positioning the ASE on the Ethernet segment between a subscriber's router and a Network Terminating Unit (NTU) such as a DSL modem or a Service Provider switch (Ethernet as WAN access), or connecting the ASE to a router or switch SPAN port.

The LAN Visibility Ethernet ASE is deployed on the LAN. The inline LAN Visibility ASE collects and displays application flow traffic on the LAN between clients and application server. In contrast, the IP Transport ASE is designed to display only traffic to or from the WAN, and ignore local traffic (such as between a client and an Internet or application server).



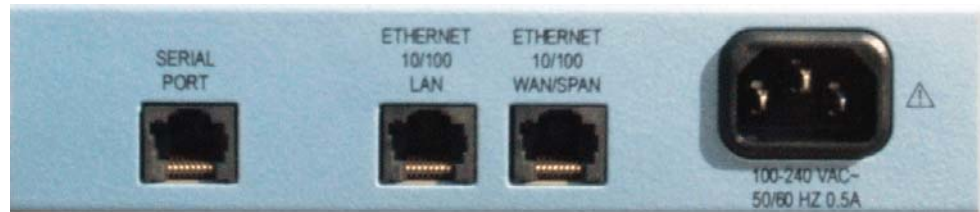
Ethernet inline probe model 807-0120 front view



Ethernet inline probe model 807-0120 deployed inline IP Transport and on LAN in LAN Visibility mode



Ethernet inline probe ASE specifications		
<b>General</b>	Dimensions	7.5" (19.1 cm) x 6" (15.2 cm) x 1.5" (3.8 cm)
	Weight	2.10 lbs.
	Maximum Data Rate	6 Mbps
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>LAN and WAN Ethernet Interface</b>	Bit Rate	10/100 Mbps
	Connector	8-pin modular jack: RJ-45
<b>Serial Port Interface</b>	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	RJ-45



Ethernet inline probe model model 807-0120 rear view

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# 10/100 Ethernet inline ASE

## With LinkSafe capabilities

### Key features

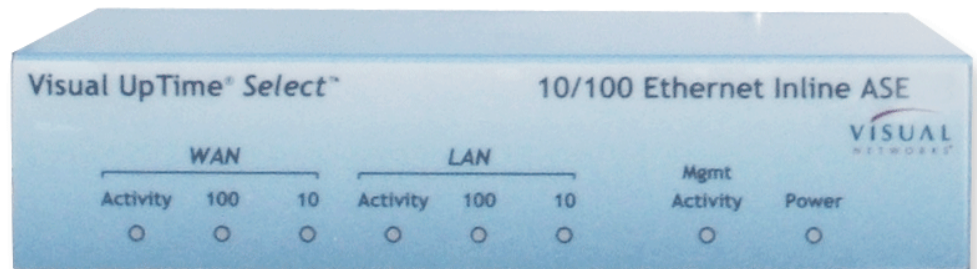
- Inline or SPAN mode deployment
- LinkSafe technology
- IP Transport or LAN Visibility software
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- Power loss detection
- LAN management port
- Realtime events

The Visual UpTime® Select™ 10/100 Ethernet inline ASE enhances the analysis functionality of the Visual UpTime Select system for Ethernet networks. The ASE provides up to 100 Mbps of detailed network traffic analysis and management, while maintaining full wire speed pass-through of all traffic. It supports both IP Transport and LAN Visibility software. When deployed inline, the ASE includes LinkSafe™ technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

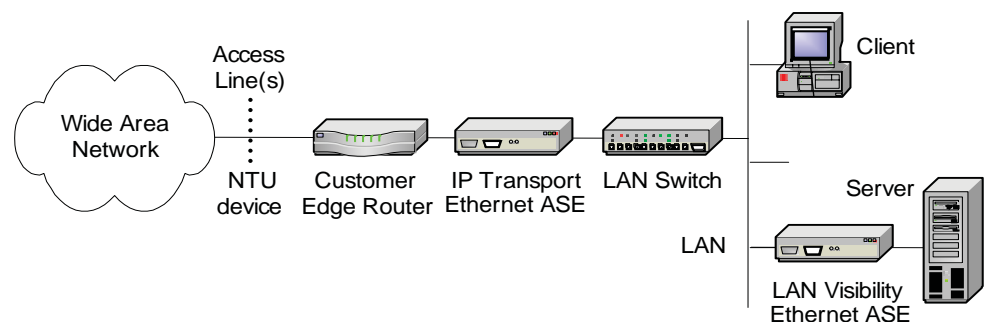
Designed for business class DSL and cable, the 10/100 Ethernet inline ASE has a wide variety of deployment options. The IP Transport Ethernet ASE is typically deployed as an inline probe on the access

line between LAN devices, such as the LAN switch and router (see figure). Other options include positioning the ASE on the Ethernet segment between a subscriber's router and a Network Terminating Unit (NTU) such as a DSL modem or a Service Provider switch (Ethernet as WAN access), or connecting the ASE to a router or switch SPAN port.

The LAN Visibility Ethernet ASE is deployed on the LAN. The inline LAN Visibility ASE collects and displays application flow traffic on the LAN between clients and application server. In contrast, the IP Transport ASE is designed to display only traffic to or from the WAN, and ignore local traffic (such as between a client and an Internet or application server).



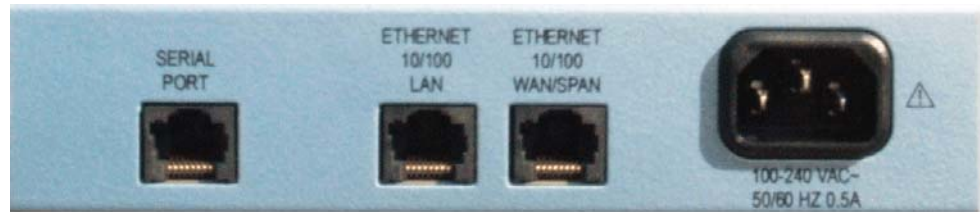
Ethernet inline probe model 807-0122 front view



Ethernet inline probe model 807-0122 deployed inline IP Transport and on LAN in LAN Visibility mode



Ethernet inline probe ASE specifications		
<b>General</b>	Dimensions	7.5" (19.1 cm) x 6" (15.2 cm) x 1.5" (3.8 cm)
	Weight	2.10 lbs.
	Maximum Data Rate	100 Mbps
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>LAN and WAN Ethernet Interface</b>	Bit Rate	10/100 Mbps
	Connector	8-pin modular jack: RJ-45
<b>Serial Port Interface</b>	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	RJ-45



Ethernet inline probe model model 807-0122 rear view

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# 10/100/1000 Ethernet ASE

## With SPAN mode capabilities

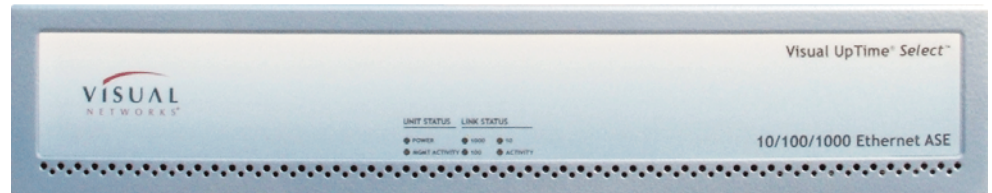
### Key features

- 500 MB of total analysis
- SPAN mode deployment
- Deployable in DS3, NxDS3, Fractional OC3, and Ethernet to Premises topologies
- IP Transport or LAN Visibility software
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LAN management port
- Realtime events

The Visual UpTime® Select™ 10/100/1000 Ethernet ASE enhances the analysis functionality of Visual UpTime Select for Ethernet networks. The ASE provides up to 500 Mbps of detailed network traffic analysis and management, while maintaining full wire speed pass-through of all traffic. It supports both IP Transport and LAN Visibility software

Designed for business class DSL and cable, the 10/100/1000 Ethernet ASE has a wide variety of deployment options. The IP Transport Ethernet ASE is deployed off a LAN switch SPAN port (see figure).

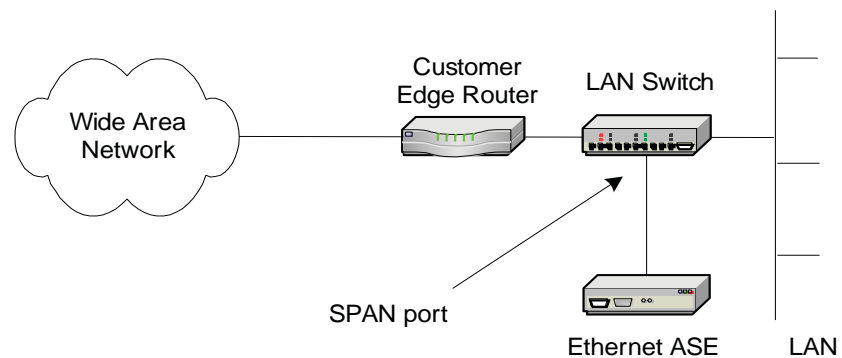
The LAN Visibility Ethernet ASE is deployed on the LAN. The ASE collects and displays application flow traffic on the LAN between clients and application server. In contrast, the IP Transport ASE is designed to display only traffic to or from the WAN, and ignore local traffic (such as between a client and an Internet or application server).



Ethernet inline probe model 807-0220 front view



Ethernet inline probe model model 807-0220 rear view



Ethernet probe model 807-0220 deployed on a LAN switch SPAN port



Ethernet inline probe ASE specifications		
<b>General</b>	Dimensions	17.3" (43.9 cm) x 12" (30.5 cm) x 3.5" (8.9 cm)
	Weight	10.45 lbs.
	Maximum Data Rate	500 Mbps
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>LAN and WAN Ethernet Interface</b>	Bit Rate	10/100/1000 Mbps
	Connector	8-pin modular jack: RJ-45
<b>Serial Port Interface</b>	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	9-pin D, male per EIA-574

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# HSSI inline probe ASE

## *With LinkSafe capabilities*

### Key features

- Inband management capabilities
- LinkSafe technology
- Power loss detection
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Application analysis capability
- LMI spoofing
- LAN management port
- Realtime events

The Visual UpTime® Select™ HSSI LinkSafe™ inline probe ASE is deployed inline on a High Speed Serial Interface (HSSI) access line, typically between a CSU/DSU and customer edge router. It is capable of monitoring traffic flowing through a bi-directional HSSI connection at data rates up to 44.7 Mbps.

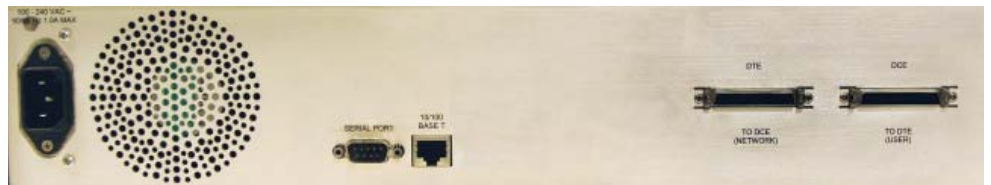
The HSSI ASE supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and IP Transport software for deployment in frame relay or HDLC-based networks that use IP switching.

The ASE also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

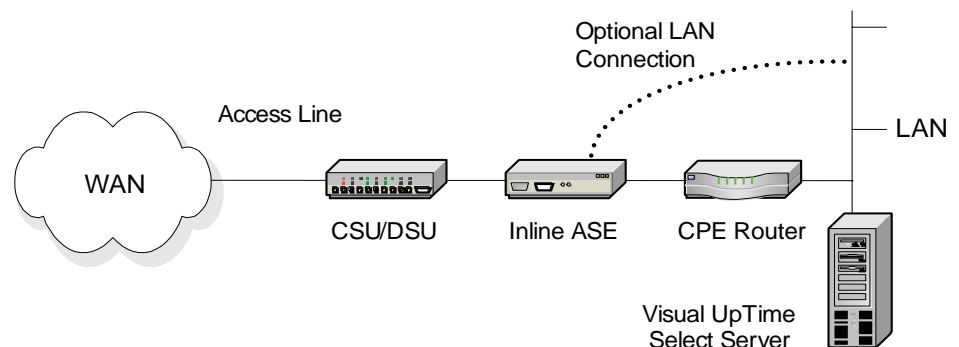
The HSSI ASE has two HSSI interfaces, Data Terminal Equipment (DTE) for monitoring traffic to the network and Data Communication Equipment (DCE) for monitoring traffic from the network. Because of its high speed capabilities, a HSSI ASE can support data passed through the CSU/DSU from NxT1 and DS3 lines.



*HSSI inline probe model 807-0106 front view*



*HSSI inline probe model model 807-0106 rear view*



*HSSI inline probe model 807-0106 position on network*



HSSI inline probe ASE specifications		
<b>General</b>	Dimensions	17.3" (43.9 cm) x 12" (30.5 cm) x 3.5" (8.9 cm)
	Weight	10.45 lbs.
	Data Rate	0 to 44.736 Mbps synchronous
	Timing Mode	RD: Always synchronous with SCR SD: Synchronous with SCT or SCTE
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 80%, noncondensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	1 amp
<b>HSSI Interface</b>	Configuration	Two HSSI interfaces: one DTE and one DCE for monitoring to-network and from-network traffic.
<b>Serial Port Interface</b>	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	9-pin D, male per EIA-574
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

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# V.35 inline probe ASE

## With LinkSafe capabilities

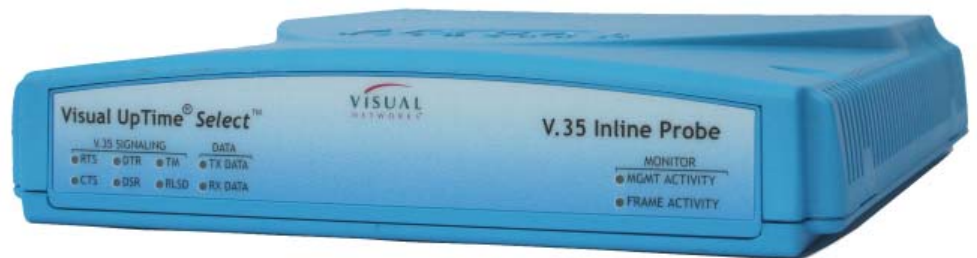
### Key features

- Inband management capabilities
- LinkSafe technology
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Power loss detection
- Realtime events

The Visual UpTime® Select™ V.35 LinkSafe™ inline probe ASE is deployed inline on a T1 access line, typically between a CSU/DSU and customer premises equipment. This ASE supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and IP Transport software for deployment in frame relay or HDLC-based networks that use IP switching.

The V.35 inline probe ASE supports V.35 connectivity through a V.35 Data Terminal Equipment (DTE) interface on the network side and Data Communications Equipment (DCE) interface on the user side.

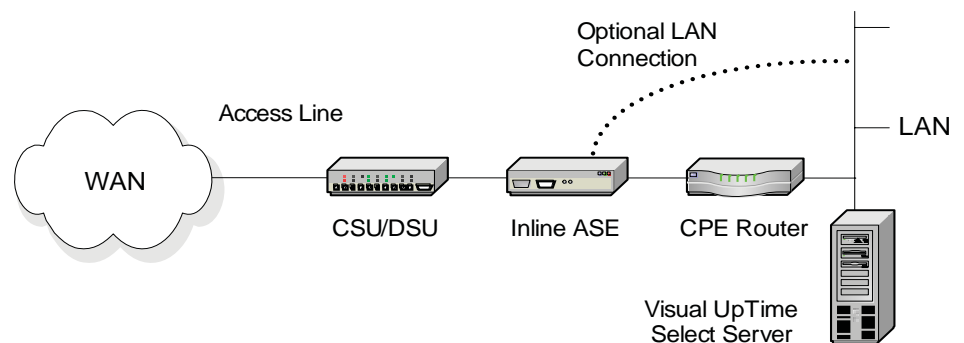
The ASE operates at data rates up to 2.048 Mbps, deriving timing from the network-side and sourcing timing on the user side. It also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.



V.35 inline probe model 807-0104 front view



V.35 inline probe model model 807-0104 rear view



V.35 inline probe model 807-0104 position on network



V.35 inline probe ASE specifications		
<b>General</b>	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62" (4.1 cm) Plastic case with internal power supply
	Weight	2.10 lbs.
	Data Rate	0 to 2.048 Mbps synchronous
	Timing Mode	RD: Always synchronous with SCR SD: Synchronous with SCT or SCTE
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 80%, noncondensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>V.35 User Interface (DCE)</b>	Configuration	DCE for interfacing with DTE
	Data and Clock Leads	ITU-T V.35
	Signaling Leads	EIA RS-232 (ITU-T V.28)
	Connector	Female 34-pin V.35 connector
	Signaling	RTS, DTR
<b>V.35 Network Interface (DTE)</b>	Configuration	DTE for interfacing with DCE
	Data and Clock Leads	ITU-T V.35
	Signaling Leads	EIA RS-232 (ITU-T V.28)
	Connector	Female 34-pin V.35 connector
	Signaling	CTS, RLS, DSR
<b>Serial Port Interface</b>	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	RJ-45
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

## Hardware Warranties

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# X.21 inline probe ASE

## With LinkSafe capabilities

### Key features

- Inband management capabilities
- LinkSafe technology
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Power loss detection
- Realtime events

The Visual UpTime® Select™ X.21 LinkSafe™ inline probe ASE is deployed inline on an access line, typically between a CSU/DSU and customer premises equipment (CPE). It supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and IP Transport software for deployment in frame relay or HDLC-based networks that use IP switching.

The ASE supports X.21 connectivity through a X.21 Data Terminal Equipment (DTE) interface on the network side and Data Communications Equipment (DCE) interface on the user side.

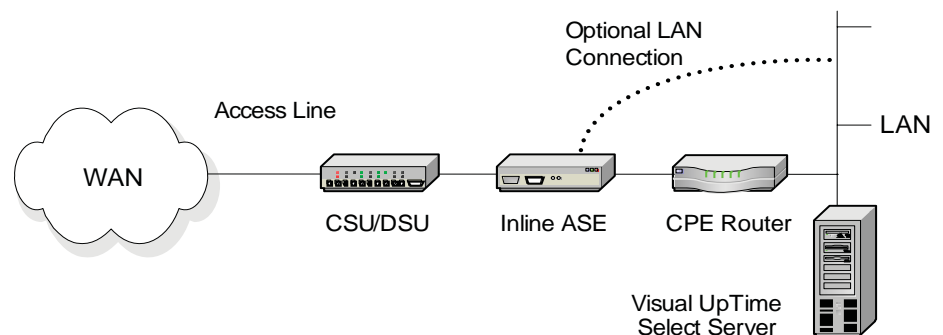
The ASE operates at data rates up to 2.048 Mbps, deriving timing from the network-side and sourcing timing on the user side. It also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.



X.21 inline probe model 807-0105 front view



X.21 inline probe model model 807-0105 rear view



X.21 inline probe model 807-0105 position on network



X.21 inline probe ASE specifications		
<b>General</b>	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62"(4.1 cm) Plastic case with internal power supply
	Weight	2.10 lbs.
	Data Rate	0 to 2.048 Mbps synchronous
	Timing Mode	RD: Always synchronous with SCR SD: Synchronous with SCT or SCTE
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 80%, noncondensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>X.21 User Interface (DCE)</b>	Configuration	DCE for interfacing with DTE
	Data and Clock Leads	ITU-CCITT X.21
	Signaling Leads	ITU-CCITT X.21
	Connector	Female 15-pin X.21 connector
	Signaling	Indicate: Clear to Send control signal to the user interface. Received and terminated by the ASE.
<b>X.21 Network Interface (DTE)</b>	Configuration	DTE for interfacing with DCE
	Data and Clock Leads	ITU-CCITT X.21
	Signaling Leads	ITU-CCITT X.21
	Connector	Female 15-pin X.21 connector
	Signaling	Control: Request to Send control signal from the user interface. On while power is applied by the ASE.
<b>Serial Port Interface</b>	Baud Rate	19200 or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	RJ-45
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

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# DS3 inline probe ASE

## With LinkSafe capabilities

### Key features

- Inband management capabilities
- LinkSafe technology
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Application analysis capability
- LAN management port
- Realtime events

The Visual UpTime® Select™ DS3 LinkSafe™ inline probe ASE complies with Class A standards for countries using DS3 ATM lines (U.S. and Canada) and supports digital transmission at the DS3 rate of 44 Mbps. This ASE supports Multi-Protocol software for deployment in standard ATM networks and IP Transport software for deployment in ATM-based networks that use IP switching. The ASE also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

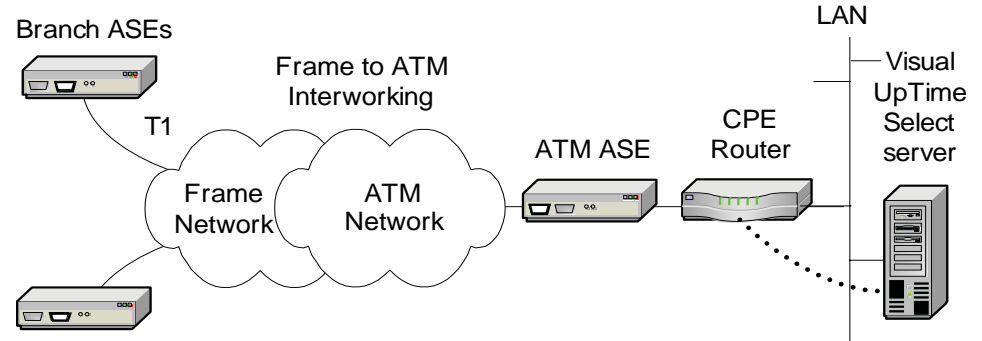
The DS3 inline probe ASE is designed for deployment at the network demarcation point between a subscriber's CPE and the WAN. It can be deployed in ATM and mixed frame relay-ATM environments. The figure below shows the ASE positioned at the edge of an inter-worked frame relay-to-ATM network, allowing for SLA messaging between a frame relay DLCI and an ATM VPI/VCI.



DS3 inline probe model 200 front view



DS3 inline probe model 200 rear view



DS3 inline probe model 200 on ATM/Frame network



DS3 inline probe ASE specifications		
<b>General</b>	Dimensions	1 EIA unit (1.75") high x 19" wide rack-mountable chassis
	Weight	10 lbs.
	Data Rate	to 45 Mbps synchronous
	Timing Mode	Derived externally from the network.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104°F)
	Storage Temperature	-20° to +55°C (-4° to +131°F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating/Storage Humidity	10% to 90% non-condensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>Network Interface</b>	Line Rate	44.736 Mbps
	Cell Delineation	HEC or PLCP
	Cell Scrambler	Enable or Disable
	Line Build Out	Long = more than 225 feet. Short = 225 feet or less.
	Connector	4 BNC (75 ohm), Network Tx and Rx, CPE Tx and Rx
<b>Serial Port Interface</b>	Baud Rate	57600, 19200, or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	9-pin D, male per EIA-574
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

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# E3 inline probe ASE

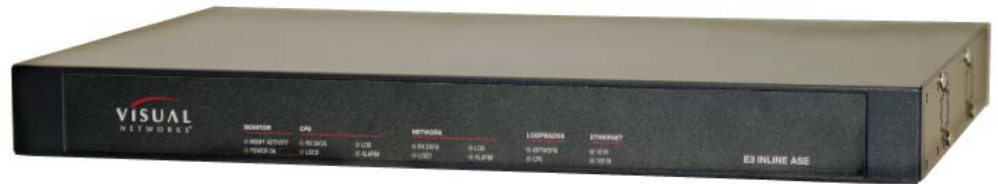
## With LinkSafe capabilities

### Key features

- Inband management capabilities
- LinkSafe technology
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Application analysis capability
- LAN management port
- Realtime events

The Visual UpTime® Select™ E3 LinkSafe™ inline probe ASE complies with Class A standards for countries using E3 ATM lines and supports digital transmission at the E3 rate of 34 Mbps. This ASE supports Multi-Protocol software for deployment in standard ATM networks and IP Transport software for deployment in ATM-based networks that use IP switching. The ASE also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

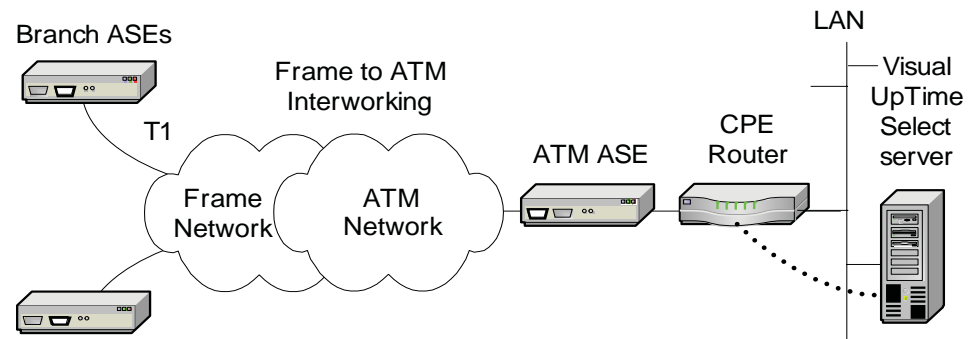
The E3 inline probe ASE is designed for deployment at the network demarcation point between a subscriber's CPE and the WAN. It can be deployed in ATM and mixed frame relay-ATM environments. The figure below shows the ASE positioned at the edge of an inter-worked frame relay-to-ATM network, allowing for SLA messaging between a frame relay DLCI and an ATM VPI/VCI.



E3 inline probe model 201 front view



E3 inline probe model 201 rear view



E3 inline probe model 201 on ATM/Frame network



E3 inline probe ASE specifications		
<b>General</b>	Dimensions	1 EIA unit (1.75") high x 19" wide rack-mountable chassis
	Weight	10 lbs.
	Data Rate	to 34 Mbps synchronous
	Timing Mode	Derived externally from the network.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104°F)
	Storage Temperature	-20° to +55°C (-4° to +131°F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating/Storage Humidity	10% to 90% non-condensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>Network Interface</b>	Line Rate	34.368 Mbps
	Cell Delineation	HEC or PLCP
	Cell Scrambler	Enable or Disable
	Connector	4 BNC (75 ohm), Network Tx and Rx, CPE Tx and Rx
<b>Serial Port Interface</b>	Baud Rate	57600, 19200, or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	9-pin D, male per EIA-574
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

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# OC-3c/STM-1 inline probe ASE

## Single mode with LinkSafe capabilities

### Key features

- Inband management capabilities
- LinkSafe technology
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Application analysis capability
- LAN management port
- Realtime events

The Visual UpTime® Select™ OC-3c/STM-1 LinkSafe™ inline probe ASE supports single mode ATM OC-3c physical lines, with SONET and SDH standards, at speeds up to 155 Mbps. This ASE supports Multi-Protocol software for deployment in standard ATM networks and IP Transport software for deployment in ATM-based networks that use IP switching. The ASE also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

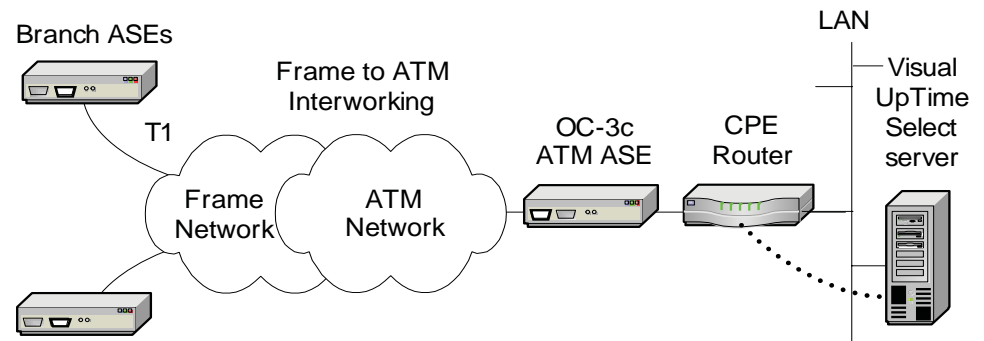
The OC-3c/STM-1 inline probe ASE is designed for deployment at the network demarcation point between a subscriber's CPE and the WAN. It can be deployed in ATM and mixed frame relay-ATM environments. The figure below shows the ASE positioned at the edge of an inter-worked frame relay-to-ATM network, allowing for SLA messaging between a frame relay DLCI and an ATM VPI/VCI.



OC-3c inline probe model 202 front view



OC-3c inline probe model 202 rear view



OC-3c inline probe model 202 on ATM/Frame network



### OC-3c inline probe ASE specifications

<b>General</b>	Dimensions	1 EIA unit (1.75") high x 19" wide rack-mountable chassis
	Weight	10 lbs.
	Data Rate	to 155 Mbps synchronous
	Timing Mode	Derived externally from the network.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104°F)
	Storage Temperature	-20° to +55°C (-4° to +131°F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating/Storage Humidity	10% to 90% non-condensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
	Bypass	5 volt 1 amp DC
<b>Network Interface</b>	Line Rate	155.52 Mbps
	Line Mode	SONET or SDH
	Cell Delineation	HEC
	Cell Scrambler	Enable or Disable
	Connectors	2 Sff Duplex-LC, Network Tx and Rx, CPE Tx and Rx
	Wavelength	1274 nm/1356 nm
	Tx Average Output Power	-11dBm (typical) Measured with single mode cable
	Rx Sensitivity	-33dBm (typical)
<b>Serial Port Interface</b>	Baud Rate	57600, 19200, or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	9-pin D, male per EIA-574
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48
Compliant with Bellcore GR-253 CORE and ITE G.957 standards		

## What are ASEs?

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# OC-3c/STM-1 inline probe ASE

## Multimode with LinkSafe capabilities

### Key features

- Inband management capabilities
- LinkSafe technology
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Application analysis capability
- LAN management port
- Realtime events

The Visual UpTime® Select™ OC-3c/STM-1 LinkSafe™ inline probe ASE supports multimode ATM OC-3c physical lines, with SONET and SDH standards, at speeds up to 155 Mbps. This ASE supports Multi-Protocol software for deployment in standard ATM networks and IP Transport software for deployment in ATM-based networks that use IP switching. The ASE also includes LinkSafe technology to protect circuit integrity in case of an ASE outage, as well as power failure notification.

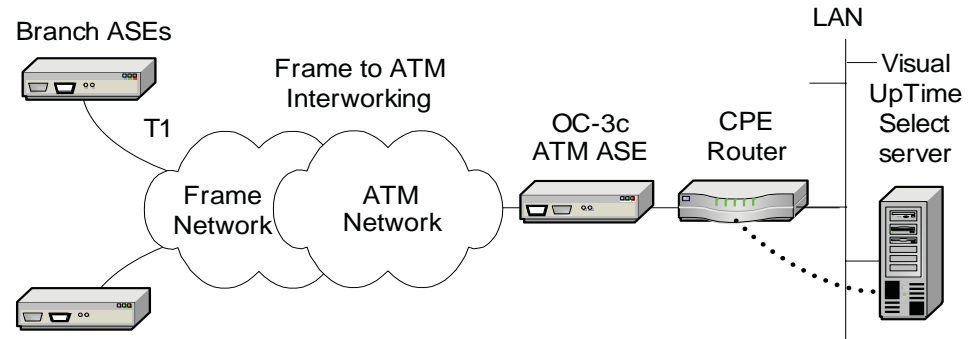
The OC-3c/STM-1 inline probe ASE is designed for deployment at the network demarcation point between a subscriber's CPE and the WAN. It can be deployed in ATM and mixed frame relay-ATM environments. The figure below shows the ASE positioned at the edge of an inter-worked frame relay-to-ATM network, allowing for SLA messaging between a frame relay DLCI and an ATM VPI/VCI.



OC-3c inline probe model 203 front view



OC-3c inline probe model 203 rear view



OC-3c inline probe model 203 on ATM/Frame network



### OC-3c inline probe ASE specifications

<b>General</b>	Dimensions	1 EIA unit (1.75") high x 19" wide rack-mountable chassis
	Weight	10 lbs.
	Data Rate	to 155 Mbps synchronous
	Timing Mode	Derived externally from the network.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104°F)
	Storage Temperature	-20° to +55°C (-4° to +131°F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating/Storage Humidity	10% to 90% non-condensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
	Bypass	5 volt 1 amp DC
<b>Network Interface</b>	Line Rate	155.52 Mbps
	Line Mode	SONET or SDH
	Cell Delineation	HEC
	Cell Scrambler	Enable or Disable
	Connectors	2 Sff Duplex-LC, Network Tx and Rx, CPE Tx and Rx
	Wavelength	1270 nm/1380 nm
	Tx Average Output Power	-16dBm (typical) Measured with 62.5µ/120 Multimedia cable
	Rx Sensitivity	-33dBm (typical)
<b>Serial Port Interface</b>	Baud Rate	57600, 19200, or 9600 bps
	Parity	8 data bits, no parity
	Stop Bit	1 stop bit
	Electrical Format	EIA RS-232, DTE
	Connector	9-pin D, male per EIA-574
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

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# T1 CSU/DSU ASE

*With DSX-1, Drop-and-Insert capabilities*

## Key features

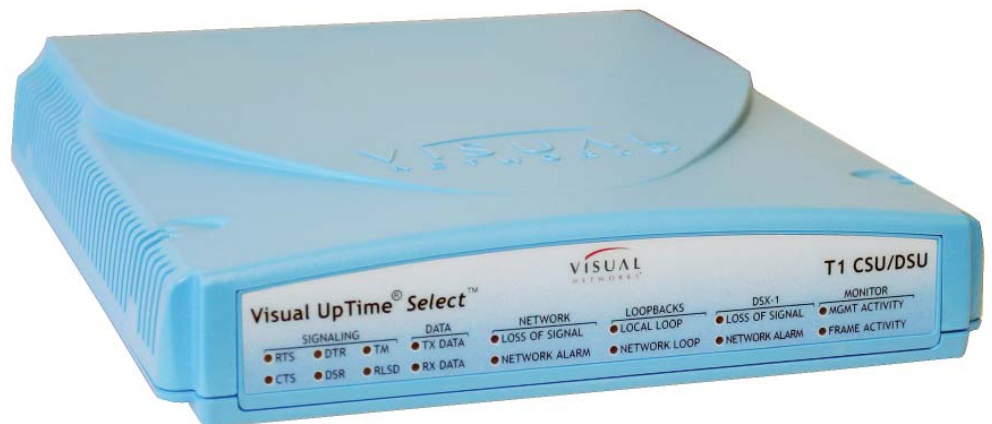
- Inband management capabilities
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Drop-and-Insert capabilities through DSX port
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Power loss detection
- Realtime events

The Visual UpTime® Select™ T1 CSU/DSU ASE is deployed on a T1 access line at the demarcation point between the provider network and customer premises. It supports full and fractional (FT1) T1 networks and provides connectivity through V.35 and additional digital cross connect signal (DSX-1) interfaces.

The ASE supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and IP Transport software for deployment in frame relay or HDLC-based networks that use IP switching.

In addition to performing standard CSU/DSU functions—such as BER tests, loopbacks, and power failure detection—the ASE is capable of inserting management traffic.

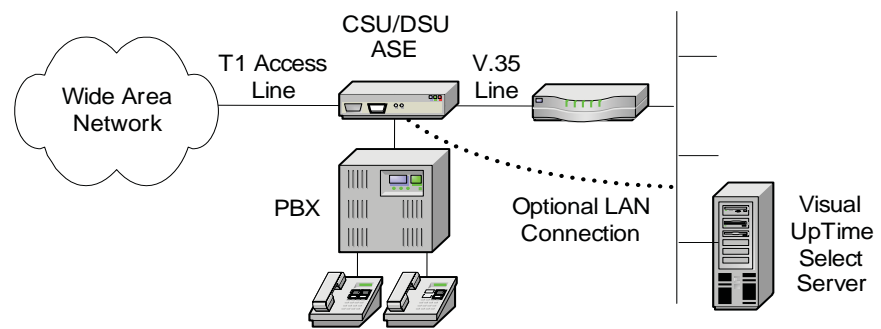
The ASE's "drop-and-insert" feature provides a secondary DSX-1 port that can connect to a Private Branch Exchange at a customer's site. T1 Timeslots can be segmented for a PBX on the same circuit carrying data traffic (see figure).



T1 CSU/DSU model 807-0109 front view



T1 CSU/DSU model 807-0109 rear view



T1 CSU/DSU model 807-0109 position on network



T1 CSU/DSU ASE specifications		
<b>General</b>	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62"(4.1 cm) Plastic case with internal power supply.
	Weight	2.10 lbs.
	Data Rate	1.544 Mbps synchronous
	Timing Mode	Derived externally from the T1 network or DSX-1 interface, or internally from the ASE.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 90%, noncondensing
<b>Power Requirements</b>	Input	100 to 120 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>T1 Network Interface</b>	Line Rate	1.544 Mbps ±50 bps synchronous
	Line Format	AMI or B9ZS line coding
	Framing	ESF or D4 framing formats
	ESF FDL	ANSI T1.403, AT&T TR54016, Both, or None
	Input Signal	0dB to -36dB
	Output Signal	0, -7.5dB, -15dB, -22.5dB LBO
	Pulse Density	AT&T 62411
	Connector	8-pin modular jack—USOC: RJ48C
	Timing	Loop, DSX-1, or Internal
	Channel Selection	1 to 24 channels in any combination
<b>Network DTE Interface (Data Port)</b>	Configuration	DCE for interfacing with DTE
	Data and Clock Leads	ITU-T V.35
	Signaling Leads	EIA RS-232 (ITU-T V.28)
	Data Rates	56 kbps x N or 64 kbps x N (N = 1 through 24)
	HDLC Inversion	Selectable V.35 data inversion
	Transmit Timing Basis	Network selected-source timing
	Receive Timing Basis	SCT, inverted SCT, SCTE
	Receive Line Data Not Valid	RLSD, CTS
<b>DSX-1 Interface</b>	Connector	Female 34-pin V.35 connector
	Line Rate	1.544 Mbps ±50 bps
	Line Format	AMI or B8ZS
	Framing	ESF or D4 (SF)
	Input Signal	-1dB to -11dB
	Line Equalization	0 ft, 133 ft, 266 ft, 399 ft, 533 ft, 655 ft
	Connector	RJ-45
<b>Serial Port Interface</b>	Channel Selection	1 to 24 channels in any combination
	Specifications	19200 or 9600 bps baud rate, 8 data bits no parity, 1 stop bit, EIA RS-232 DTE electrical format, RJ-45 connector
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

## Hardware Warranties

Enhanced Gold, Bronze, and International Gold ASE hardware warranty service programs are available to help you maximize your investment in Visual UpTime Select. For more detailed warranty information, visit: [www.flukenetworks.com/visualcustomercare](http://www.flukenetworks.com/visualcustomercare)

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# T1 CSU/DSU ASE

## Key features

- Inband management capabilities
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Power loss detection
- Realtime events

The Visual UpTime® Select™ T1 CSU/DSU ASE is deployed on a T1 access line at the demarcation point between the provider network and customer premises. It supports full and fractional (FT1) T1 networks and provides connectivity through V.35 interface.

The ASE supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and

IP Transport software for deployment in frame relay or HDLC-based networks that use IP switching.

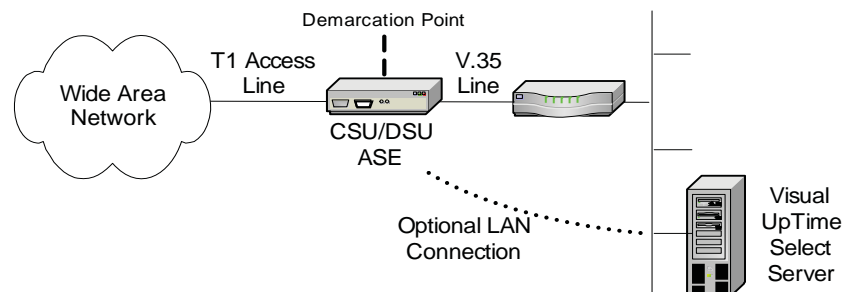
In addition to performing standard CSU/DSU functions—such as BER tests, loopbacks, and power failure detection—the ASE is capable of inserting management traffic.



T1 CSU/DSU model 807-0110 front view



T1 CSU/DSU model 807-0110 rear view



T1 CSU/DSU model 807-0110 position on network



T1 CSU/DSU ASE specifications		
<b>General</b>	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62"(4.1 cm) Plastic case with internal power supply.
	Weight	2.10 lbs.
	Data Rate	1.544 Mbps synchronous
	Timing Mode	Derived externally from the T1 network or DSX-1 interface, or internally from the ASE.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 90%, noncondensing
<b>Power Requirements</b>	Input	100 to 120 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>T1 Network Interface</b>	Line Rate	1.544 Mbps ±50 bps synchronous
	Line Format	AMI or B9ZS line coding
	Framing	ESF or D4 framing formats
	ESF FDL	ANSI T1.403, AT&T TR54016, Both, or None
	Input Signal	0dB to -36dB
	Output Signal	0, -7.5dB, -15dB, -22.5dB LBO
	Pulse Density	AT&T 62411
	Connector	8-pin modular jack—USOC: RJ48C
	Timing	Loop, DSX-1, or Internal
	Channel Selection	1 to 24 channels in any combination
<b>Network DTE Interface (Data Port)</b>	Configuration	DCE for interfacing with DTE
	Data and Clock Leads	ITU-T V.35
	Signaling Leads	EIA RS-232 (ITU-T V.28)
	Data Rates	56 kbps x N or 64 kbps x N (N = 1 through 24)
	HDLC Inversion	Selectable V.35 data inversion
	Transmit Timing Basis	Network selected-source timing
	Receive Timing Basis	SCT, inverted SCT, SCTE
	Receive Line Data Not Valid	RLSD, CTS
<b>Serial Port Interface</b>	Specifications	19200 or 9600 bps baud rate, 8 data bits no parity, 1 stop bit, EIA RS-232 DTE electrical format, RJ-45 connector
	Connector	Female 34-pin V.35 connector
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

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# T1 CSU/DSU ASE

## With Modem

### Key features

- Inband management capabilities
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Drop-and-Insert capabilities through DSX port
- Internal modem
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Power loss detection
- Realtime events

The Visual UpTime® Select™ T1 CSU/DSU ASE is deployed on a T1 access line at the demarcation point between the provider network and customer premises. It supports full and fractional (FT1) T1 networks and provides connectivity through V.35 interface.

The ASE supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and IP Transport software for deployment in networks that use IP switching.

This ASE features an internal modem that allows users to establish a telephone connection to either the ASE's administrative interface or a pass-through connection through the serial port.

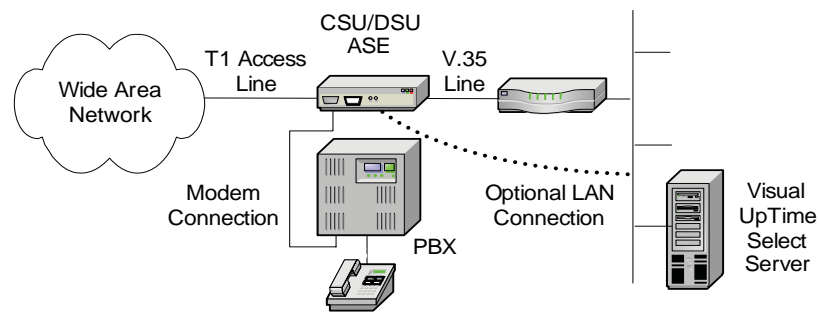
In addition to performing standard CSU/DSU functions—such as BER tests, loopbacks, and power failure detection—the ASE is capable of inserting management traffic.



T1 CSU/DSU model 807-0111 front view



T1 CSU/DSU model 807-0111 rear view



T1 CSU/DSU model 807-0111 position on network



T1 CSU/DSU ASE specifications		
<b>General</b>	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62" (4.1 cm) Plastic case with internal power supply.
	Weight	2.10 lbs.
	Data Rate	1.544 Mbps synchronous
	Timing Mode	Derived externally from the T1 network or DSX-1 interface, or internally from the ASE.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 90%, noncondensing
<b>Power Requirements</b>	Input	100 to 120 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>T1 Network Interface</b>	Line Rate	1.544 Mbps ±50 bps synchronous
	Line Format	AMI or B9ZS line coding
	Framing	ESF or D4 framing formats
	ESF FDL	ANSI T1.403, AT&T TR54016, Both, or None
	Input Signal	0dB to -36dB
	Output Signal	0, -7.5dB, -15dB, -22.5dB LBO
	Pulse Density	AT&T 62411
	Connector	8-pin modular jack—USOC: RJ48C
	Timing	Loop, DSX-1, or Internal
	Channel Selection	1 to 24 channels in any combination
<b>Network DTE Interface (Data Port)</b>	Configuration	DCE for interfacing with DTE
	Data and Clock Leads	ITU-T V.35
	Signaling Leads	EIA RS-232 (ITU-T V.28)
	Data Rates	56 kbps x N or 64 kbps x N (N = 1 through 24)
	HDLC Inversion	Selectable V.35 data inversion
	Transmit Timing Basis	Network selected-source timing
	Receive Timing Basis	SCT, inverted SCT, SCTE
	Receive Line Data Not Valid	RLSD, CTS
<b>Serial Port Interface</b>	Specifications	19200 or 9600 bps baud rate, 8 data bits no parity, 1 stop bit, EIA RS-232 DTE electrical format, RJ-45 connector
	Connector	Female 34-pin V.35 connector
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48
<b>Modem</b>	Connector	RJ11
	Standard	FCC Part 68 and IC-CS03
	Compliance	US and Canada

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

## Hardware Warranties

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# T1 CSU/DSU ASE

## With DSX-1, Drop-and-Insert, and Modem

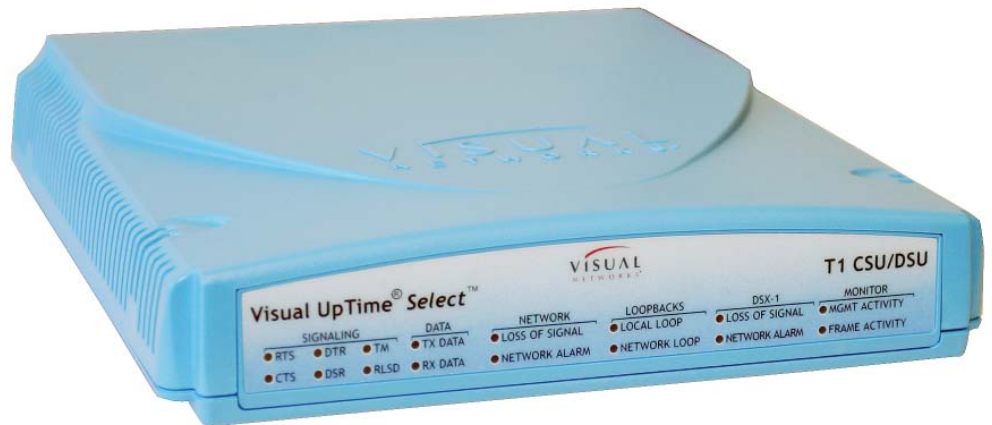
### Key features

- Inband management capabilities
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Drop-and-Insert capabilities through DSX port
- Internal modem
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Power loss detection
- Realtime events

The Visual UpTime® Select™ T1 CSU/DSU ASE is deployed on a T1 access line at the demarcation point between the provider network and customer premises. It supports full and fractional (FT1) T1 networks and provides connectivity through V.35 and additional digital cross connect signal (DSX-1) interfaces.

The ASE supports Multi-Protocol software for deployment in standard frame relay or HDLC networks and IP Transport software for deployment in networks that use IP switching.

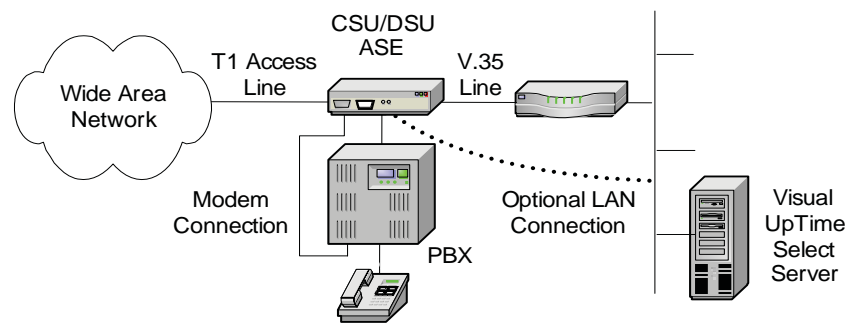
The ASE's "drop-and-insert" feature provides a secondary DSX-1 port that can connect to a Private Branch Exchange at a customer's site. T1 Timeslots can be segmented for a PBX on the same circuit carrying data traffic (see figure). The ASE's internal modem lets users establish a telephone connection to either the ASE's administrative interface or a pass-through connection via the serial port.



T1 CSU/DSU model 807-0112 front view



T1 CSU/DSU model 807-0112 rear view



T1 CSU/DSU model 807-0112 position on network



T1 CSU/DSU ASE specifications		
<b>General</b>	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62"(4.1 cm) Plastic case with internal power supply.
	Weight	2.10 lbs.
	Data Rate	1.544 Mbps synchronous
	Timing Mode	Derived externally from the T1 network or DSX-1 interface, or internally from the ASE.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating/Storage Humidity	10% to 90%, noncondensing
<b>Power Requirements</b>	Input	100 to 120 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>T1 Network Interface</b>	Line Rate	1.544 Mbps ±50 bps synchronous
	Line Format	AMI or B9ZS line coding
	Framing	ESF or D4 framing formats
	ESF FDL	ANSI T1.403, AT&T TR54016, Both, or None
	Input Signal	0dB to -36dB
	Output Signal	0, -7.5dB, -15dB, -22.5dB LBO
	Pulse Density	AT&T 62411
	Connector	8-pin modular jack—USOC: RJ48C
	Timing	Loop, DSX-1, or Internal
	Channel Selection	1 to 24 channels in any combination
	<b>Network DTE Interface (Data Port)</b>	Configuration
Data and Clock Leads		ITU-T V.35
Signaling Leads		EIA RS-232 (ITU-T V.28)
Data Rates		56 kbps x N or 64 kbps x N (N = 1 through 24)
HDLC Inversion		Selectable V.35 data inversion
Transmit Timing Basis		Network selected-source timing
Receive Timing Basis		SCT, inverted SCT, SCTE
Receive Line Data Not Valid		RLSD, CTS
Connector		Female 34-pin V.35 connector
<b>DSX-1 Interface</b>	Line Rate	1.544 Mbps ±50 bps
	Line Format	AMI or B8ZS
	Framing	ESF or D4 (SF)
	Input Signal	-1dB to -11dB
	Line Equalization	0 ft, 133 ft, 266 ft, 399 ft, 533 ft, 655 ft
	Connector	RJ-45
	Channel Selection	1 to 24 channels in any combination
<b>Serial Port Interface</b>	Specifications	19200 or 9600 bps baud rate, 8 data bits no parity, 1 stop bit, EIA RS-232 DTE electrical format, RJ-45 connector
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48
<b>Modem</b>	Specifications	RJ11 connector, FCC Part 68 and IC-CS03 standards, compliance in US and Canada

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

## Hardware Warranties

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# Dual-port Dual-analysis ASE

## T1 CSU/DSU with DSX-1 and Drop-and-Insert capabilities

### Key features

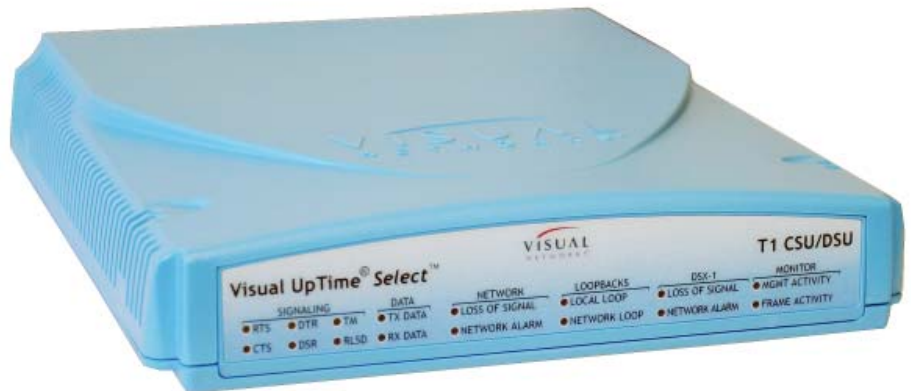
- Inband management capabilities
- Multi-Protocol or IP Transport software
- Service Level Agreement (SLA) metrics
- Drop-and-Insert capabilities through DSX port
- Voice over IP (VoIP) analysis capability
- Application analysis capability
- LMI spoofing
- LAN management port
- Second analysis port for redundant router, different traffic types
- Power loss detection
- Realtime events

The Visual UpTime® Select™ Dual-port Dual-analysis T1 CSU/DSU ASE is deployed on a T1 access line at the demarcation point between the provider network and customer premises. It supports frame relay/HDLC and IP Transport capabilities.

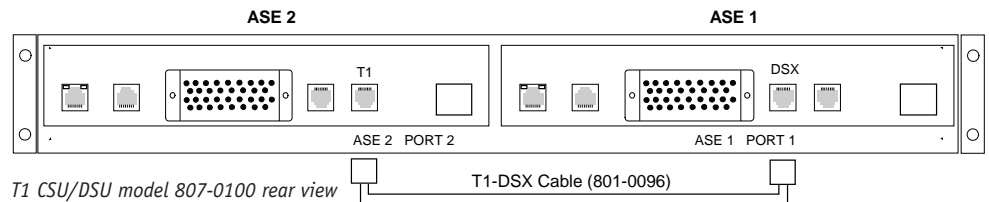
This unit combines two model 109 T1 CSU/DSU ASEs with a built-in connector cable and analyzes data on both ports. The unit's second port can be used for a redundant router in the event of primary router failure. Multiple traffic types can be concentrated on

separate frame relay ports (for example, voice over FR1, plus SNA over FR2). In addition, domestic and international frame relay services can exist on two separate ports on the same access line.

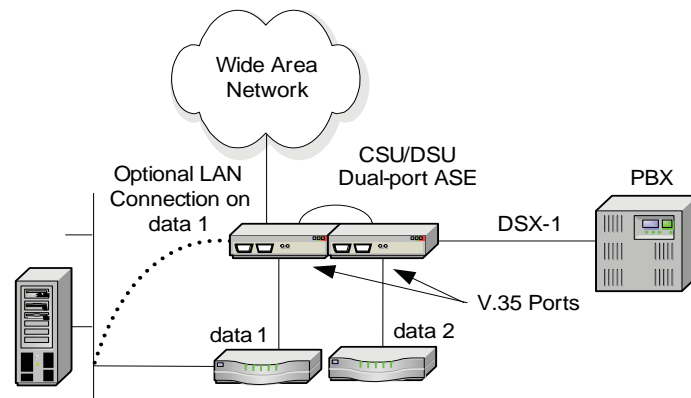
In addition to performing standard CSU/DSU functions—such as BER tests, loopbacks, and power failure detection—the ASE is capable of inserting management traffic. Up to 155 PVCs or IP circuits can be managed per ASE.



T1 CSU/DSU model 807-0109 front view (ASE model 100 is two model 109 units in a rack mount)



T1 CSU/DSU model 807-0100 rear view



T1 CSU/DSU model 807-0100 on network



T1 CSU/DSU ASE specifications		
<b>General</b>	Dimensions	8.16" (20.7 cm) x 9.0" (22.8 cm) x 1.62"(4.1 cm) Plastic case with internal power supply.
	Weight	2.10 lbs.
	Data Rate	1.544 Mbps synchronous
	Timing Mode	Derived externally from the T1 network or DSX-1 interface, or internally from the ASE.
<b>Environment</b>	Operating Temperature	0° to +40°C (+32° to +104° F)
	Storage Temperature	-20° to +55°C (-4° to +131° F)
	Clearance Requirement	Minimum of 3" (7.62 cm) space on sides.
	Operating and Storage Humidity	10% to 90%, noncondensing
<b>Power Requirements</b>	Input	100 to 240 VAC
	Frequency	50/60 Hz
	Input Current Rating	0.5 amps
<b>T1 Network Interface</b>	Line Rate	1.544 Mbps ±50 bps synchronous
	Line Format	AMI or B9ZS line coding
	Framing	ESF or D4 framing formats
	ESF FDL	ANSI T1.403, AT&T TR54016, Both, or None
	Input Signal	0dB to -36dB
	Output Signal	0, -7.5dB, -15dB, -22.5dB LBO
	Pulse Density	AT&T 62411
	Connector	8-pin modular jack—USOC: RJ48C
	Timing	Loop, DSX-1, or Internal
	Channel Selection	1 to 24 channels in any combination
<b>Network DTE Interface (Data Port)</b>	Configuration	DCE for interfacing with DTE
	Data and Clock Leads	ITU-T V.35
	Signaling Leads	EIA RS-232 (ITU-T V.28)
	Data Rates	56 kbps x N or 64 kbps x N (N = 1 through 24)
	HDLC Inversion	Selectable V.35 data inversion
	Transmit Timing Basis	Network selected-source timing
	Receive Timing Basis	SCT, inverted SCT, SCTE
	Receive Line Data Not Valid	RLSD, CTS
<b>DSX-1 Interface</b>	Connector	Female 34-pin V.35 connector
	Line Rate	1.544 Mbps ±50 bps
	Line Format	AMI or B8ZS
	Framing	ESF or D4 (SF)
	Input Signal	-1dB to -11dB
	Line Equalization	0 ft, 133 ft, 266 ft, 399 ft, 533 ft, 655 ft
	Connector	RJ-45
<b>Serial Port Interface</b>	Channel Selection	1 to 24 channels in any combination
	Specifications	19200 or 9600 bps baud rate, 8 data bits no parity, 1 stop bit, EIA RS-232 DTE electrical format, RJ-45 connector
<b>Ethernet 10/100BaseT Interface</b>	Bite Rate	10 or 100 Mbps
	Connector	8-pin modular jack: RJ-48

## What are ASEs?

ASEs (Analysis Service Elements) are data collection and network performance monitoring hardware devices placed on a wide area network (WAN) or Local Area Network (LAN) as part of the Visual UpTime Select system, which offers in-depth, real-time, and historical visibility into the performance of your applications infrastructure. In the system, data gathered by ASEs is stored in the Visual UpTime Select server and displayed and analyzed from the Visual UpTime Select Web client. As a service level management tool, ASEs indicate when services are being met, provide warnings when services start to degrade, and send alerts when services are not met.

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