



# LINEBACKER™ DCME

## DIGITAL T1/E1 TRUNK COMPRESSOR

### PRODUCT DESCRIPTION

LineBacker™ is a self-contained system for compressing voice and signaling channels on multiple T1/E1 trunks into a single T1/E1 trunk. A pair of LineBacker systems allows up to 7 T1/E1 trunks interconnecting two communications facilities to be replaced by a single T1/E1 trunk, providing significant savings in the recurring cost of interconnecting T1/E1 trunk lines. LineBacker supports all global ISDN or SS7 signaling protocols.

Configuration and maintenance of LineBacker may be performed using any PC or workstation equipped with a web browser, either from a local or remote location. System security is maintained by a username and password protected database that controls system access.

### PRODUCT FEATURES

- Economical modular capacity expansion.
- Transparent pass-through of ISDN and SS7 signaling between source and destination.
- Automatic failover to a backup interconnecting span ensures operation in the event of failure in the primary span interconnecting span.
- Toll-quality 8KHz G.729 compressed audio.
- Subrate switching technology, as found in cellular networks, achieves maximum capacity.

- In redundant configuration, alarms maybe sent via e-mail or pager for remote site monitoring.
- Optional failover to a single un-compressed span in the event of a power failure at either end.

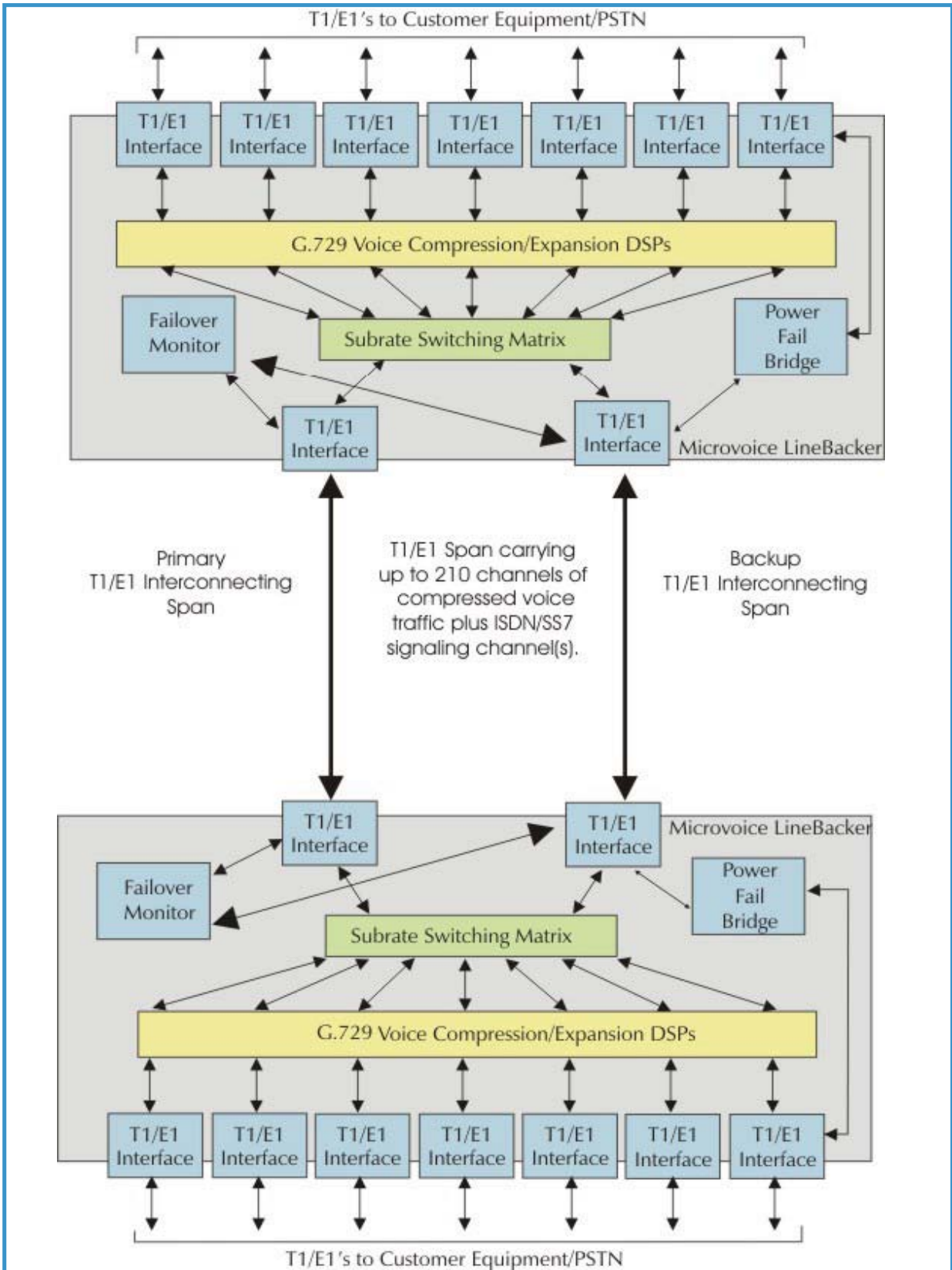
### PRODUCT BENEFITS

- Remote maintenance via Ethernet for simplified upgrades and field support.
- Dual100 baseT Ethernet ports support 99.999% up time high availability configurations.
- Hot swap allows mission critical systems to continue operation during maintenance and upgrade procedures.
- Browser-based display allows local or remote configuration and monitoring of current system status.

### APPLICATIONS

- Economical transport of multiple T1/E1 voice circuits at the cost of a single T1/E1.
- Busy period overflow traffic to remote load-sharing sites.
- Headquarters to branch and branch to branch business communications.
- Remote call center hubs.

# LineBacker System Overview



# LineBacker Example System Screens

**LineBacker** MicroVoice
*Spans*

Statistics
Configuration
Utilities
About

|| Device || Spans

Settings

Port	Type	Primary	Secondary		
1	E1	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service
2	E1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service
3	E1	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service
4	E1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service
5	E1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service
6	E1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service
7	E1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service
8	E1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> In Service	<input type="radio"/> Out of Service

Internal

Mode:  Auto  Primary  Secondary

Primary is active.

NFAS:  Yes  No      Select total channels (E1 only):  29  30

Transport:  Span 1  Span 2      Backup:  Disabled  Enabled

Update

Port	Settings
E1.1	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss
E1.2	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss
E1.3	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss
E1.4	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss
E1.5	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss
E1.6	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss
E1.7	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss
E1.8	CRC4 <input checked="" type="radio"/> Off <input type="radio"/> On      Format: <input type="radio"/> CAS <input checked="" type="radio"/> CCS Termination: <input type="radio"/> OFF <input type="radio"/> 75 <input type="radio"/> 100 <input checked="" type="radio"/> 120      HDB3: <input type="radio"/> Off <input checked="" type="radio"/> On Build Outs: <input type="radio"/> 75 <input checked="" type="radio"/> 120 <input checked="" type="radio"/> Norm <input type="radio"/> Prot <input checked="" type="radio"/> Norm <input type="radio"/> Loss

Update

## LineBacker Specifications

### T1/E1/J1 INTERFACE MODULE:

T1/J1/E1 Interfaces per card: 4/8

DSX-1 Electrical interface: with line build-outs 0-133 ft., 134-266 ft., 267- 399 ft., 400-533 ft., 534-655 ft.

CSU, with Line Build-outs: 0dB, -7.5 dB, -15dB and -22.5dB. Drive capability, 0-6000 ft.

T1/J1 Input Impedance: Software selectable 100 ohms or high impedance monitoring mode.

E1 Input Impedance: Software selectable 120 ohms balanced, 75 ohms unbalanced, or high impedance monitoring mode.

T1/J1 Receive Frequency:  
1.544 MHz  $\pm$  50 ppm.

E1 Receive Frequency:  
2.048 MHz  $\pm$  50 ppm.

E1 Output Stream Drive Capability:  
per CCITT G.703

Framing Acquisition Time:  
Single frame period

Line Coding: AMI, B8ZS, B7ZS, HDB3

Frame Formats: D4, ESF, SLC-96, ZBTS1 (T1/J1), CAS, CCS, CRC4 (E1)

Signaling: ISDN, QSIG and SS7 signaling (T1/J1/E1)

### PANEL DISPLAYS

Span active, span alarm, clock source/error, bus fail, board fail and ethernet link status.

### TIMING REFERENCE

Software selectable from recovered span clock, or internal oscillator.

### HOT SWAP

Linebacker span interface modules may be hot swapped without disturbing other span interfaces in operation.

Hot swap allows for remote diagnostics, board shut off and replacement activation. (Manual board insertion and removal is also supported).

### DUAL 10/100 BASE-T ETHERNET PORTS

Dual independent 10/100 Base-T ports support software downloads and remote host communications, as well as HA configurations.

Dual 10/100 BaseT RJ45 connections accessible on rear transition module.

### VOICE COMPRESSION/EXPANSION

Industry standard G.729 provides 7:1 compression while maintaining telephone network audio quality. Jitter buffering and comfort noise generation create conversational quality indistinguishable from an uncompressed call.

### PSTN NETWORK CONNECTORS

Octal RJ48 connectors on rear transition module.

### ENCLOSURE:

#### DIMENSIONS, WEIGHT AND POWER

**Size (WxHxD):** 1U Chassis, 440 x 44.5x 280 mm (17.3" x 1.75" x 11.0")

**Weight:** 5.5 kg (13lb)

**Power:** 100-240 VAC, 47-63 Hz, 75 Watts

#### REGULATORY APPROVALS

CE, UL, FCC, CSA

#### ENVIRONMENT

**Temperature:** Operating 0 to 45 °C (32 to 113 °F) Non-Operating -40 to 60 °C (-40 to 140 °F)

**Humidity:** 0 to 95% @ 60 °C, non-condensing

#### ORDERING INFORMATION:

8 span LineBacker..... LB8

Additional 8 span card..... LB38

8 span Dual Redundant..... LB8R

Represented By: \_\_\_\_\_

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