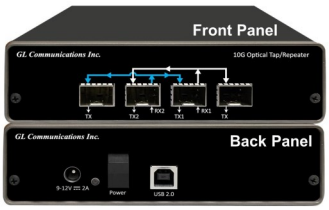
T1 E1 Single/ Dual Multiport and Optical Tap Repeaters

Single Multiport Repeater (Bantam Version)

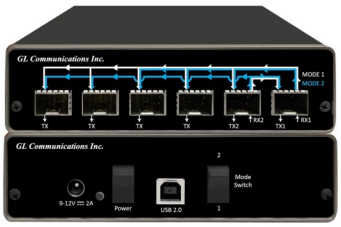
Dual Multiport Repeater (Bantam Version)



Multiport Optical Tap Repeater (up to 10 Gbps)

Single Multiport Repeater (RJ45 Version)

Dual Multiport Repeater (RJ45 Version)



Multiport Optical Tap Repeater (100 Mbps to 2.5 Gbps)

Overview

Multiport Repeaters are used to generate multiple identical T1 or E1 outputs for each T1 or E1 input, thus increasing the range of transmission of T1 or E1 signals. A single/dual Multiport Repeater can be used for the following purposes:

- To generate multiple identical T1 or E1 outputs for each T1 or E1 input
- To test and load multiple T1 or E1 interfaces simultaneously
- For broadcast applications and traffic generation and simulation
- To preserve the strength of the signal and extend the distance over which the signal representing the data can be transmitted

The single bantam version provides ten identical outputs from a single T1 or E1 input. The single RJ45 version provides twelve identical outputs from a single T1 or E1 input. The dual version provides four outputs for each of the two inputs. The device is also useful in lab environments for load testing and signal duplication purposes. The output signals are regenerated versions of the input signal(s), that is, the input signal is detected via a data and clock detector circuit and regenerated at the output with identical line coding.

GL offers mTOP™ high-density rack hardware test platforms, which are 1U rack enclosures within which USB based T1 E1 Multiport Repeaters can be stacked to provide high density form factor solution.

The sleek design of T1 E1 Multiport Repeaters portable hardware device allows multiple units to be easily placed in a mTOP™ 1U rack mount enclosure, the variations available are –

- (MT001/MT001E + MPT00) – mTOP™ T1 Multiport Repeater 1:12 T1 Repetition
- (MT001/MT001E + MPE00) – mTOP™ E1 Multiport Repeater 1: 12 E1 Repetition
- (MT001/MT001E + DPT00) – mTOP™ Dual T1 Multiport Repeater 2X1:4 T1 Repetition
- (MT001/MT001E + DPE00) – mTOP™ Dual E1 Multiport Repeater 2X1:4 E1 Repetition

A single T1 E1 Multiport Repeaters mTOP™ test solution with stacked rack units greatly reduces the licensing costs per device. It is a perfect T1 E1 Multiport Repeater for customers who require multi-port testing but are constrained by lab space. For more details on mTOP™ rack-based platform, refer to Test Tools in Rack Based Platforms.

GL offers mTOP™ Multiport Optical Tap Repeater hardware test platforms (100 Mbps to 2.5 Gbps), which provides multiple identical outputs for optical and electrical signals at OC-3 / STM-1, OC-12 / STM-4, OC-48 / STM-16, 1 GigE, and 2.5 GigE rates.

GL also offers mTOP™ Multiport Optical Tap Repeater hardware test platforms (up to 10 Gbps), which provides multiple identical outputs for optical and electrical signals at OC-3 / STM-1, OC-12 / STM-4, OC-48 / STM-16, OC-192/STM-64, 1 GigE, 2.5 GigE and 10 GigE rates

For more details, visit T1 E1 Single/ Dual Multiport and Optical Tap Repeaters webpage.

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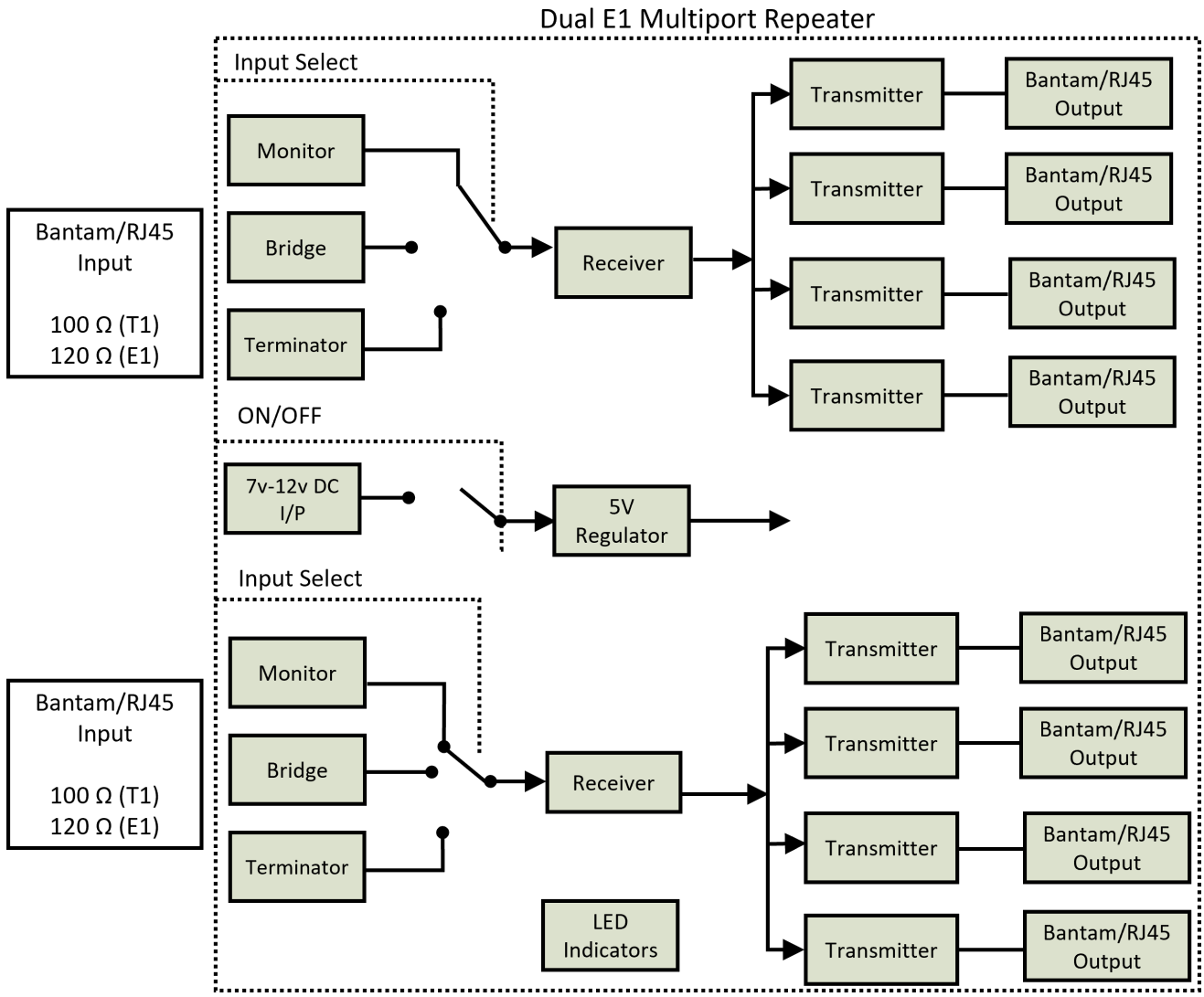
Multiport Repeaters

Common Features of Single/ Dual Multiport Repeaters

- The input and output connections are through standard bantam or RJ 45 jacks
- Inputs and outputs are compatible with CCITT G.703
- Units operate on a voltage of 7-12 V DC and draw a current of up to 1000 mA
- T1 and E1 signals are terminated at 100 Ω or 120 Ω respectively
- The repeater permits output drive for line lengths up to 655 feet
- The T1 Multiport Repeater and E1 Multiport Repeater are available as separate units
- LEDs are provided to indicate the presence or absence of input signals and power
- Provides Terminate, Bridge and Monitor mode of operations



Dual Multiport Repeater

Input Features

Provides two independent sections of logic that repeat and multiply input T1 or E1 signals; each input is repeated 4 times at the output. For each section, the input termination is 100 Ω (T1) or 120 Ω (E1) balanced (bantam or RJ45) through a front panel switch.

Output Features

- Each section has four outputs: each output is 100 Ω (T1) or 120 Ω (E1) balanced (bantam or RJ 45)
- The output of one section can be fed to the input of the second section, thereby providing seven identical outputs consisting of seven (7) bantam or RJ45 outputs

Single Multiport Repeater

Input Features

- Terminate and Monitor Input:
  - –DSX level E1 signal is terminated at 120W
  - –DSX level T1 signal is terminated at 100W
- Bridged Input:
  - –DSX level T1 or E1 signal is terminated at > 1000W

Output Features

- A single Multiport Repeater contains ten or twelve identical output ports
- The input T1 or E1 signal is regenerated and provided at the ten or twelve output ports

Specifications

Physical Dimensions

- Dimensions of Dual Multiport Repeater (2 x 4): 5.5" x 5.5" x 1.5"
- Dimensions of Single Multiport Repeater (1 x 10): 6.5" x 5.5" x 1.5"

Power Supply Features

The required input voltage to the T1 E1 Multiport Repeater is 9V DC. Users can use the supplied AC/DC adapter for 120V (or 220V) AC power supply. The output of the adapter is 9V DC. The current drawn is 500 mA.

LED Indicators

The T1 E1 Multiport Repeater have 12 LEDs on the front panel.

- The first LED (next to the input bantam jacks) indicates the input signal status. This LED turns on when a valid T1 or E1 input signal is connected
- LEDs from 2nd to 11th indicate the output signal status. These LEDs are lit if there is a valid output signal
- The last LED indicates the input power status. This LED is lit when the power to the repeater is switched on

mTOP™ - High Density Rack Mount Form Factor

High Density T1 E1 Multiport Repeaters form factor solution are used are used to generate multiple identical T1 or E1 outputs for each T1 or E1 input, thus increasing the range of transmission of T1 or E1 signals. The chassis comprises of A single/ dual Multiport Repeater with stacked USB units greatly reduces the licensing costs per device.

1U mTOP™ rack w/ Dual T1 (1:4) Multiport Repeater (Front Panel View)

1U mTOP™ rack w/ Dual E1 (1:4) Multiport Repeater (Front Panel View)

1U mTOP™ rack w/ Single E1 Multiport (1:12) Repeater (Front Panel View)

Hardware Specification

- Height: 1U Rack
- Length: 16 Inches
- Width: 19 Inches
- mTOP™ System (embedded SBC, T1 E1 Multiport Repeater)
- Multiport Repeater Unit -
  - –A dual bantam version provides four outputs for each of the two T1 or E1 input
  - –A single RJ45 version provides twelve identical outputs from a single T1 or E1 input
  - –A dual version provides four outputs for each of the two inputs
- SBC specifications -
  - –Intel Core i3 or optional i7 Equivalent, Windows® 11 64-bit Pro operating system
  - –USB 2.0 and 3.0 Ports, ATX Power Supply
  - –240GB Hard drive, 8G Memory (Min)
- Order information
  - –MT001 - 1U mTOP rack with SBC (Intel Core i3)
  - –MT001E - 1U mTOP rack with SBC (Intel Core i7)
  - –MPT00
  - –MPE00
  - –DPT00
  - –DPE00
  - –T1 E1 Multiport Repeater Options

Optical Tap Repeaters (OTR) 100 Mbps to 2.5 Gbps

SONET SDH Ethernet Optical Tap Repeaters

Multiport Optical Tap Repeater hardware test platform provides multiple identical outputs for optical and electrical signals at OC-3 / STM-1, OC-12 / STM-4, OC-48 / STM-16, 1 GigE, and 2.5 GigE rates. The need for optical taps that cut the optical power by 30% or 50% are not needed, since the signals are repeated at full power.

Features

- Accepts up to 6 standards SFPs from OC-3 to OC-48, or 1 GigE and 2.5 GigE
- SFPs can be Electrical (Copper) or Optical Fiber (Single or Multimode)
- Mode Switch = 1 Pass thru Input to 5 Identical Outputs, or
- Mode Switch = 2 Pass thru Inputs to 2 Identical Outputs/each
- Cascade two or more OTRs for greater duplication
- Convert Single Mode to Multimode
- Convert Optical to Electrical or Electrical to Optical
- Error free repetition

Multi-Rate Optical Tap/Repeater

SONET/SDH or Ethernet	Bit Rate
OC-3/STM-1	155.52 Mbps
OC-12/STM-4	622.08 Mbps
OC-48/STM-16	2488.32 Mbps
1 GigE	1000 Mbps
2.5 GigE	2500 Mbps

Optical Tap Repeaters (OTR) up to 10 Gbps

SONET SDH Ethernet Optical Tap Repeaters

Multiport Optical Tap Repeater hardware test platform provides multiple identical outputs for optical and electrical signals at OC-3 / STM-1, OC-12 / STM-4, OC-48 / STM-16, OC-192/STM-64, 1 GigE, 2.5 GigE and 10 GigE rates. The need for optical taps that cut the optical power by 30% or 50% are not needed, since the signals are repeated at full power.

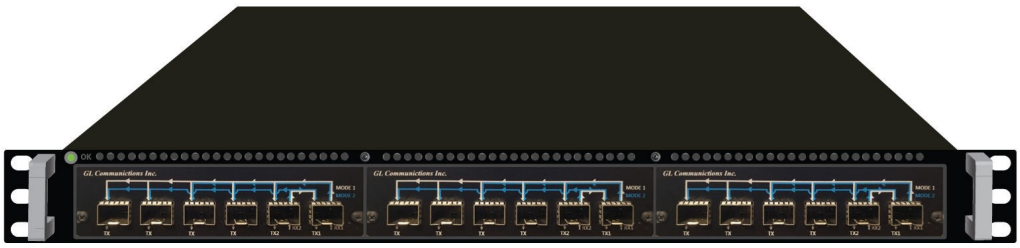
Features

- Accepts up to 4 standards SFPs or SFP+s from OC3 to OC192, or from 1 GigE up to 10 GigE
- SFP and SFP+ can be Single or Multimode or a mixture of each
- **Do Not Use** 10G Electrical SFPs, current draw is too great
- Convert Single Mode to Multimode
- Error free repetition

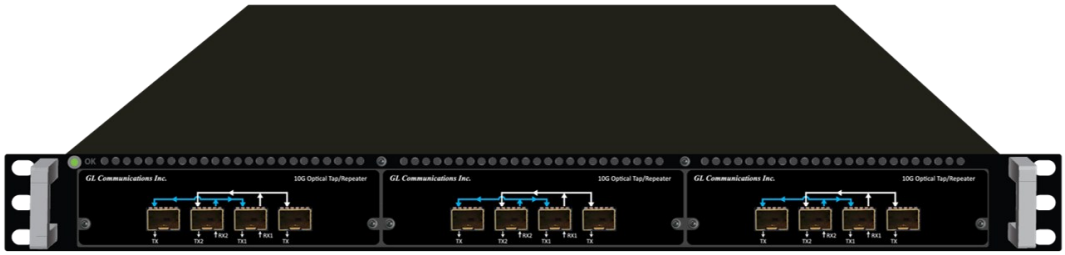
Multi-Rate Optical Tap/Repeater

SONET/SDH or Ethernet	Bit Rate
OC-3/STM-1	155.52 Mbps
OC-12/STM-4	622.08 Mbps
OC-48/STM-16	2488.32 Mbps
OC-192/STM-64	9.953 Gbps
1 GigE	1000 Mbps
2.5 GigE	2500 Mbps
10 GigE	10,000 Mbps

mTOP™ Multiport Optical Tap Repeater



1U mTOP™ Multiport Optical Tap Repeater (100 Mbps to 2.5Gbps)
(Front Panel View)



1U mTOP™ Multiport Optical Tap Repeater (Up to 10 Gbps)
(Front Panel View)

Hardware Specification

- Height: 1U Rack
- Length: 16 Inches
- Width: 19 Inches
- mTOP™ System (embedded SBC, T1 E1 Multiport Repeater)
- Multiport Optical Tap Repeater Unit (100 Mbps to 2.5 Gbps)
  - –Accepts up to 6 standards SFPs from OC3 to OC48, or 1 GigE and 2.5 GigE
  - –SFPs can be Electrical (Copper) or Optical Fiber (Single or Multimode)
  - –Converts Single Mode to Multimode
  - –Mode Switch = 1 Pass thru Input to 5 Identical Outputs, or
  - –Mode Switch = 2 Pass thru Inputs to 2 Identical Outputs/each SBC
- Multiport Optical Tap Repeater Unit (Up to 10 Gbps)
  - –Accepts up to 4 standards SFPs or SFP+s from OC3 to OC192, or from 1 GigE up to 10 GigE
  - –SFP and SFP+ can be Single or Multimode or a mixture of each
  - –Convert Single Mode to Multimode
- Specifications -
  - –Intel Core i3 or optional i7 Equivalent, Windows® 11 64-bit Pro operating system
  - –USB 2.0 and 3.0 Ports, Two USB Type C ports, 2.5 GigE Ethernet port, ATX Power Supply
  - –Two HDMI ports, 256GB Hard drive, 8G Memory (Min)
- Order information
  - –MT001 - 1U mTOP rack with SBC (Intel Core i3)
  - –MT001E - 1U mTOP rack with SBC (Intel Core i7)
  - –MPT00
  - –MPE00
  - –DPT00
  - –DPE00
  - –T1 E1 Multiport Repeater Options

Buyer's Guide

Item No	Product Description
MPT00	T1 Multiport Repeater 1:12 T1 Repetition
MPE00	E1 Multiport Repeater 1: 12 E1 Repetition
DPT00	Dual T1 Multiport Repeater 2X1:4 T1 Repetition
DPE00	Dual E1 Multiport Repeater 2X1:4 E1 Repetition

Item No	Related Hardware
SWT001	T1 or E1 or J1 Monitor / Intrusive Switch
PTP001	2-Wire Phone Tap
MT001	mTOP™ 1U Rack Mount Enclosure w/SBC (intel core i3)
MT001E	mTOP™ Rack Mount Enclosure w/SBC (intel core i7)
MT002	mTOP™ 1U Rack Mount Enclosure w/o SBC

Note: PCs which include GL hardware/software require Intel or AMD processors for compliance.

For more details, visit T1 E1 Single/ Dual Multiport and Optical Tap Repeaters webpage.

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