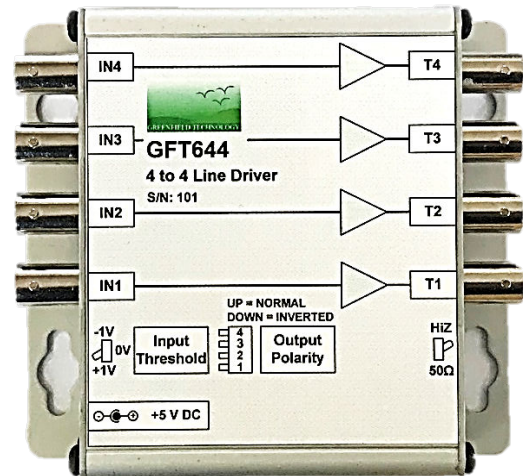


### Features

- Up to 150 MHz clock rate
- Drive 100 feet of cable at 150 MHz
- Four independent inputs with:  
selectable threshold (+1 V / 0 V / -1 V)  
selectable load (50 Ω or 1 kΩ pull up)
- Four independent 50 Ω TTL outputs with:  
selectable polarity  
1 ns typical output rise & fall time  
10 ps input output RMS jitter
- Operate from DC +5 V
- All input & output are BNC connectors
- Compact module: 115 X 80 x 30 mm
- Option: 1 input to 4-line drivers



*Top view of the module*

### Applications

- High speed digital communication
- High to low Impedance converter
- Pulse inverter
- Level translator
- Sine to square wave converter
- Long line Drivers
- Tools for lab
- Components Test equipment

### Description

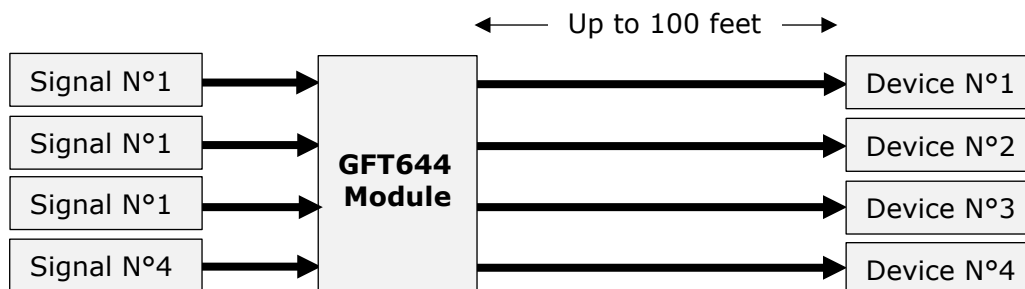
The GFT644 module is specially designed for interfacing signal source and 50 Ω long cable at up to 150 MHz rate.

The input threshold can be set to +1 or 0 or -1 V and the input load can be selected from 50 Ω or 1 kΩ pull up by a front panel switch. So that channel input can be driven directly by TTL /CMOS logic levels or open collector or negative pulse (0 to -3 V) or AC coupled signal ( $\pm 0.5$  V).

All outputs with 50 Ω load can drive 100 feet of cable at clock rate up to 150 MHz with 2.5 V amplitude. Each output polarity can be set normal or inverted and outputs are compatible with DC or AC TTL input.

The GFT644 is a compact module supplied with a +5V AC/DC adapter

**Typical application** (see below) includes to distribute four independent high-speed signals to four devices via long cable (up to 100 feet) width TTL level.



*Typical application*



# GFT644

## 4 channel 50 $\Omega$ TTL Line Driver Module

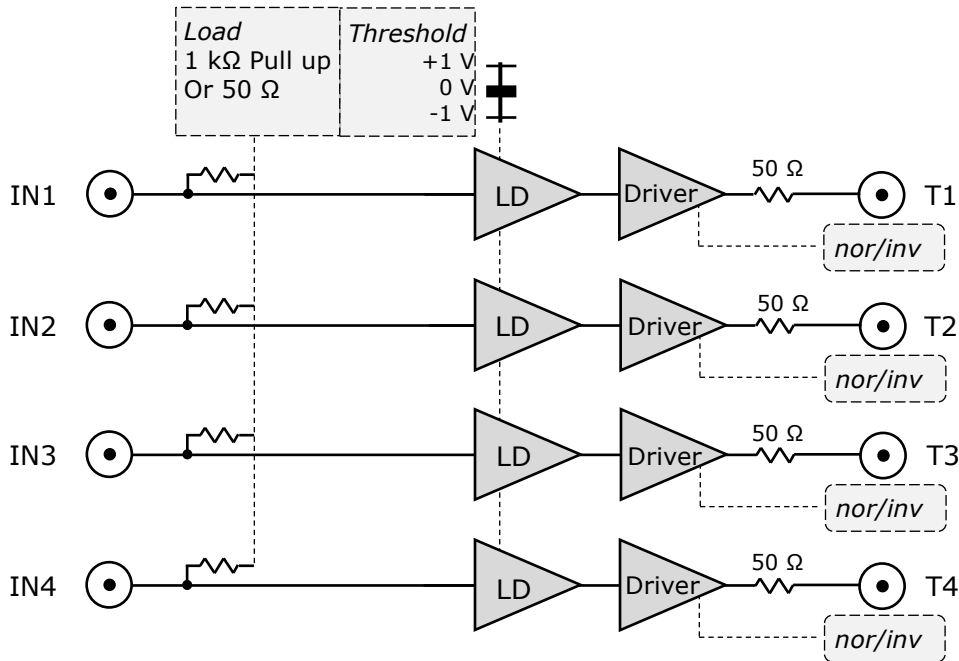
### Specifications

Input	
Number	4
Range	+5 V to -5 V (max.)
Threshold level	Preset to -1 V or 0 V or +1 V
Internal load	Adjustable to 50 $\Omega$ or 1 k $\Omega$ pulled up to +5 V
Minimum pulse width	5 ns
Output	
Number	4
Output resistance	50 $\Omega$
Low level	0.5 V
High level	2.5 V @ Load=50 $\Omega$ , 4 V @ Load > 10 k $\Omega$
Rise /fall times	1 ns / 1ns @ 100 MHz square wave
Polarity from input	Normal or Inverted
Jitter RMS	10 ps (Input to output)
Max clock frequency	150 MHz @ cable length = 3 feet
	150 MHz @ cable length = 100 feet
Skew	500 ps (TBC)
General specifications	
Control	Switches to select: <ul style="list-style-type: none"><li>- input load (common)</li><li>- input threshold (common)</li><li>- Output mode: normal or inverted (individual)</li></ul> Power on Indicator
Inputs & outputs	All are BNC connectors
Size	W=115, L=80, H=30 mm
Power V/A	+5 V / 200 mA max. External AC (90 -240 V) to DC (+ 5 V) adapter furnished
Power connector	Jack 2.10 mm
Option :	
GFT614 module	1 input to 4 Line 50 $\Omega$ Driver Module

### Operating information

#### Block diagram

The 4 channel TTL line driver includes two functions: A level detector and a 50 Ω driver per channel.



#### Level Detector (LD)

This function is specially designed to detect the rising and the falling edge of the input signal at precise threshold value. Threshold can be selected to +1 or 0 or -1 Volts using a three-position switch. The 0 Volt threshold setting is intended for signal with zero crossing such as sinewave or AC coupled square wave signal.

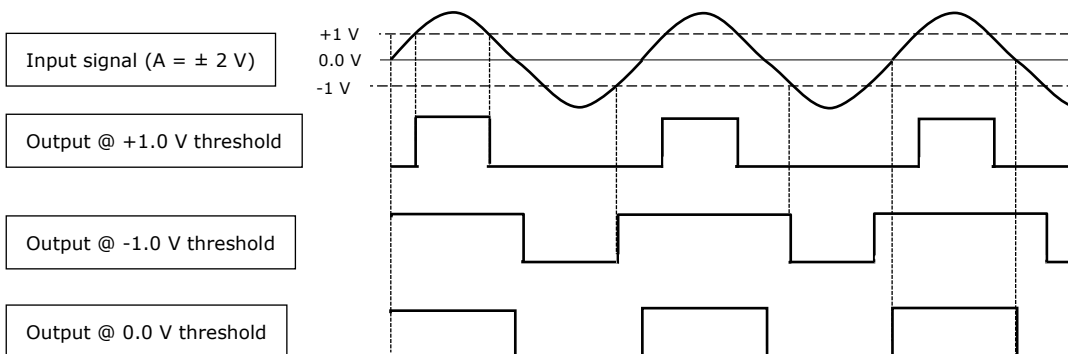
Input internal load can be selected to 50 Ω or 1 kΩ pulled at +5 V so that it can be driven directly by open collector.

#### Driver

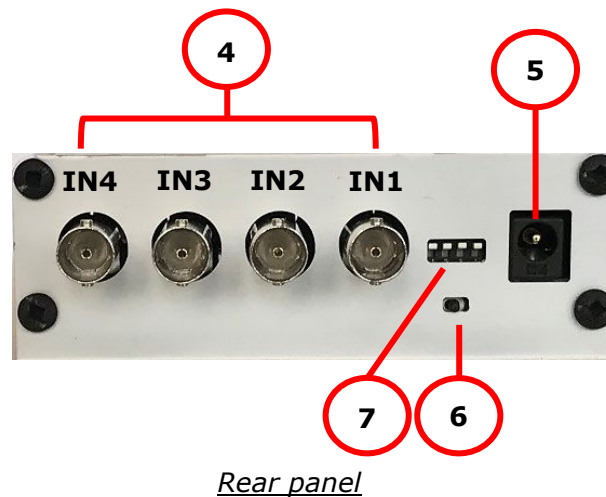
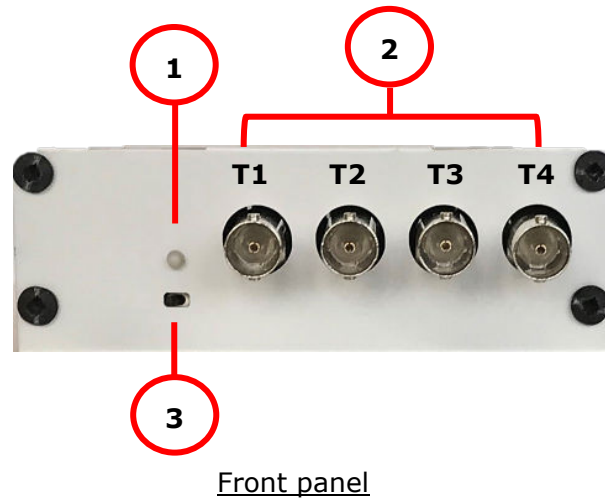
High speed Driver with serial 50 Ω terminated output allows to drive line with or without 50 Ω external load. With 50 Ω load you may drive up to 100 feet of cable.

Normal/inverted switch provides output logic polarity selection independently on each channel.

#### Examples of input output mode



### Input & Output



### Connector, indicator and switch

Front panel		Rear panel	
	<ul style="list-style-type: none"> <li>Indicator</li> </ul>		<ul style="list-style-type: none"> <li>Connector</li> </ul>
<b>1</b>	Light green when power on	<b>4</b>	IN1 Input: BNC connector
	<ul style="list-style-type: none"> <li>Connector</li> </ul>		IN2 Input: BNC connector
<b>2</b>	T1 Signal Output: BNC connector		IN3 Input: BNC connector
	T2 Signal Output: BNC connector		IN4 Input: BNC connector
	T3 Signal Output: BNC connector	<b>5</b>	Power input
	T4 Signal Output: BNC connector		<ul style="list-style-type: none"> <li>Switch</li> </ul>
	<ul style="list-style-type: none"> <li>Switch</li> </ul>	<b>6</b>	To select input threshold
<b>3</b>	To select 50 Ω or high input impedance	<b>7</b>	To select normal/inverted output