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## Test & Measurement

- sales
- rentals
- calibration
- repair
- disposal

## Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

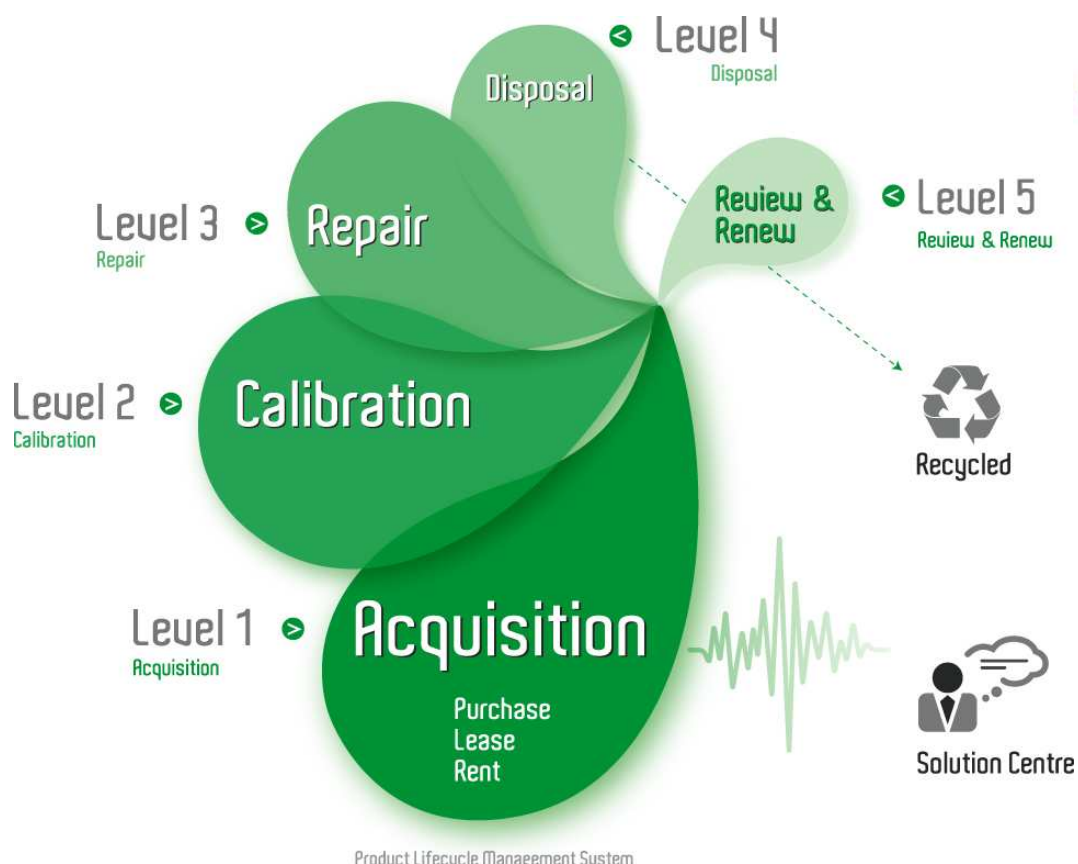
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## PPG-E135 PRBS PULSE PATTERN GENERATOR WITH CLOCK OUTPUT

*For WaveExpert® Sampling Oscilloscopes*

### Features

- Three selectable frequency bands to 11.5 GHz, using Internal Clock
- Continuous unbanded coverage from 50 MHz to 12.5 GHz, using External Clock
- RMS Jitter ~ 1 ps
- Fast Rise/Fall Times ~ 30 ps
- Differential Output
- Multiple Output Patterns: 2<sup>7</sup>, 2<sup>10</sup>, 2<sup>15</sup>, 2<sup>23</sup>, 2<sup>31</sup>
- Multiple mark/space ratios



*PPG-E135 PRBS Pulse Pattern Generator with Clock Output*

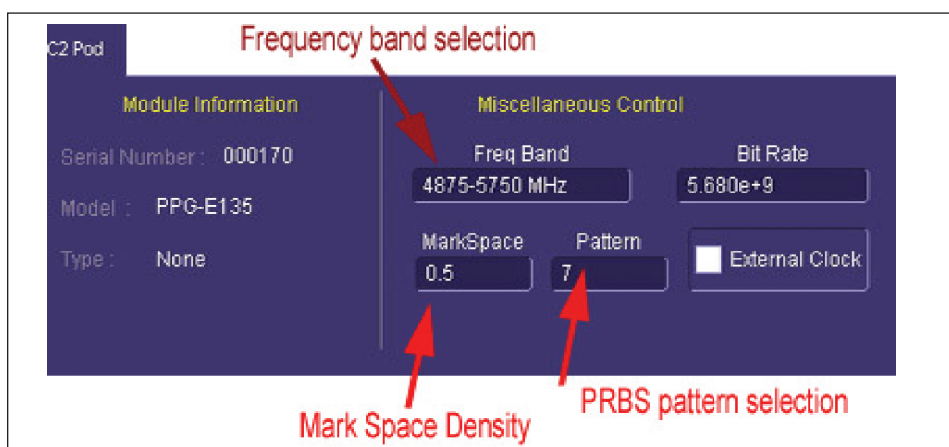
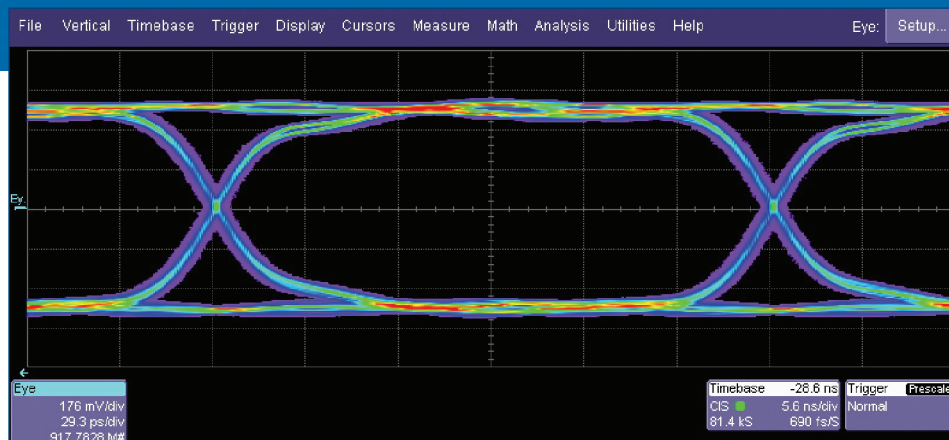
The PPG-E135 is a Pseudo Random Bit Sequence (PRBS) pulse pattern generator accessory module, available for the WaveExpert® Series of sampling oscilloscopes. The PPG-E135 is capable of generating differential PRBS patterns up to 2<sup>31</sup>-1 in three distinct bands up to 11.5 Gb/s, and can be used as a digital source for verification measurements of high-speed serial and optical telecommunication components. It is also equipped with an External Clock Input that

can be used to generate PRBS patterns from 50 Mb/s–12.5 Gb/s. Its low intrinsic jitter and fast rise and fall times make it an ideal source for differential device characterization.

The PPG-E135 module can fit into any of the four channels available in the WaveExpert sampling oscilloscope. Selection of frequency band, mark space density, and pattern length is performed through the channel menu.

# Specifications and Ordering Information

Measuring a 5 Gb/s output from the PPG-E135 using the 20 GHz Sampling Module (ST-20)



PPG-E135 module setup menu in WaveExpert allows selection of the different parameters

## Specifications

Parameter	Nominal
Frequency Range	2.45 GHz–2.875 GHz 4.9 GHz–5.75 GHz 9.8 GHz–11.5 GHz
Data Patterns	2 <sup>N</sup> -1 N=7, 10, 15, 23, 31
Mark Space Density	0.5, 0.250, 0.125 0.875 or 0.750 possible with Data Invert
Data Output Voltage	500 mV <sub>p-p</sub> , 1000 mV differential
Data Output Jitter	< 1 ps rms

Parameter	Nominal
Data Output Rise/Fall Time	30 ps (20–80%)
Clock Output Power	0 dBm ± 3 dBm
External Clock Input Frequency	50 MHz–12.5 GHz
External Clock Input Power	> 0 dBm
Frequency Accuracy	± 3 ppm
Front Panel Connectors	
Data+, Data- CLK Input, CLK Output	2.92 mm (3.5 mm compatible) SMA

## Ordering Information

### Product Description

12.5 Gb/s PRBS Pulse Pattern Generator with Clock Output

### Product Code

PPG-E135

### Customer Service

LeCroy oscilloscopes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, the WaveExpert Series oscilloscopes and modules are warranted for a period of one year, and our probes are warranted for one year.

This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge



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