

# A New Harmonics Option for PQSim200

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## Outline

- Purpose of a optional board
- What's the PQSim200?
- Using EP1 to monitor harmonics
- Generating Harmonics with a standard board
- Generating Harmonics with an optional board
- Comparison between a standard board and an optional board
- Summary



## Purpose of an optional board

- To provide a new available option for users who want to generate a low harmonics.
- To decrease total harmonics distortion (THD) on a new board when harmonics off.

## What's the PQSim200?

- PQSim™ is an application specific 3 channel AC function generator that produces voltage waveforms of 230Vac 50hz, 1.5vrms representing current waveforms of the most common Power Quality disturbances.



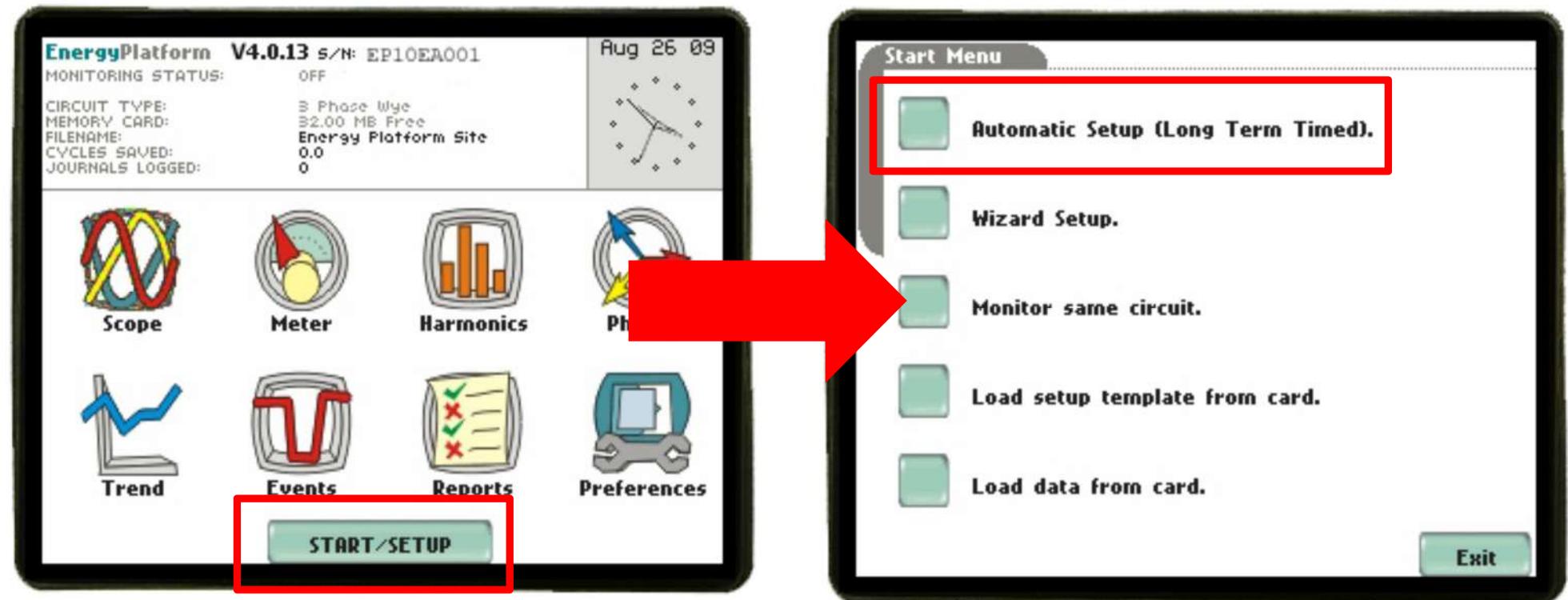
## Using EP1 to monitor harmonics

- Firstly, connect PQSim to Power Quality Meter and then configure it for capturing harmonics.



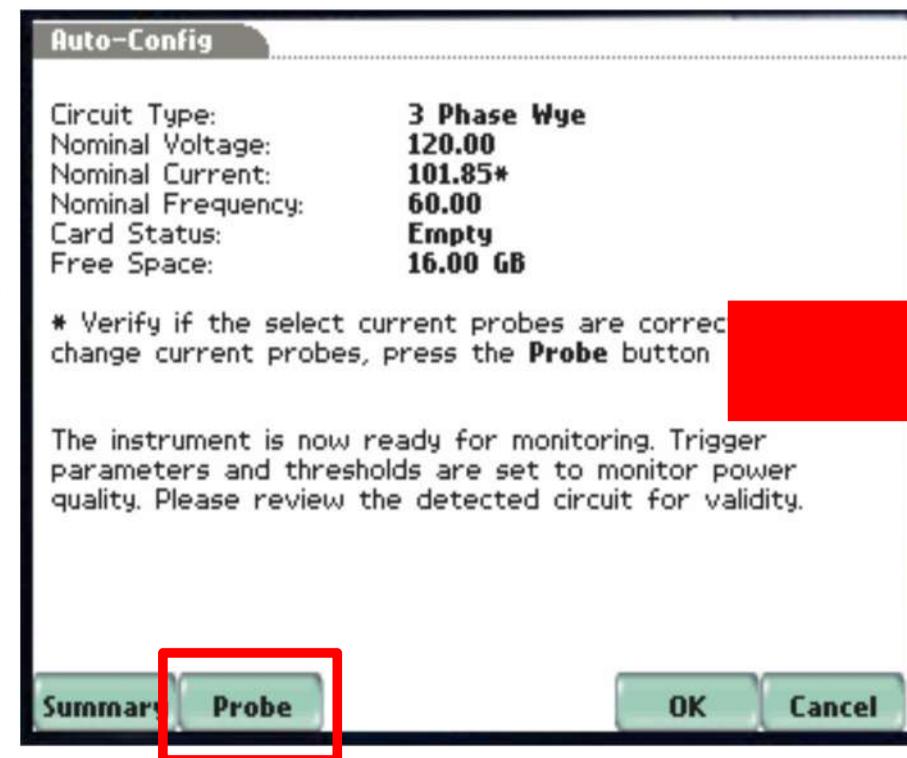
# Using EP1 to monitor harmonics

- There are 4 steps setup to capture harmonics on EP1
  1. Select “Start Monitoring” and then select “Automatic Setup”



## Using EP1 to monitor harmonics

2. Select “Probes” tab and then on Current Probes for channel A. Under Model, select and choose “Other.”



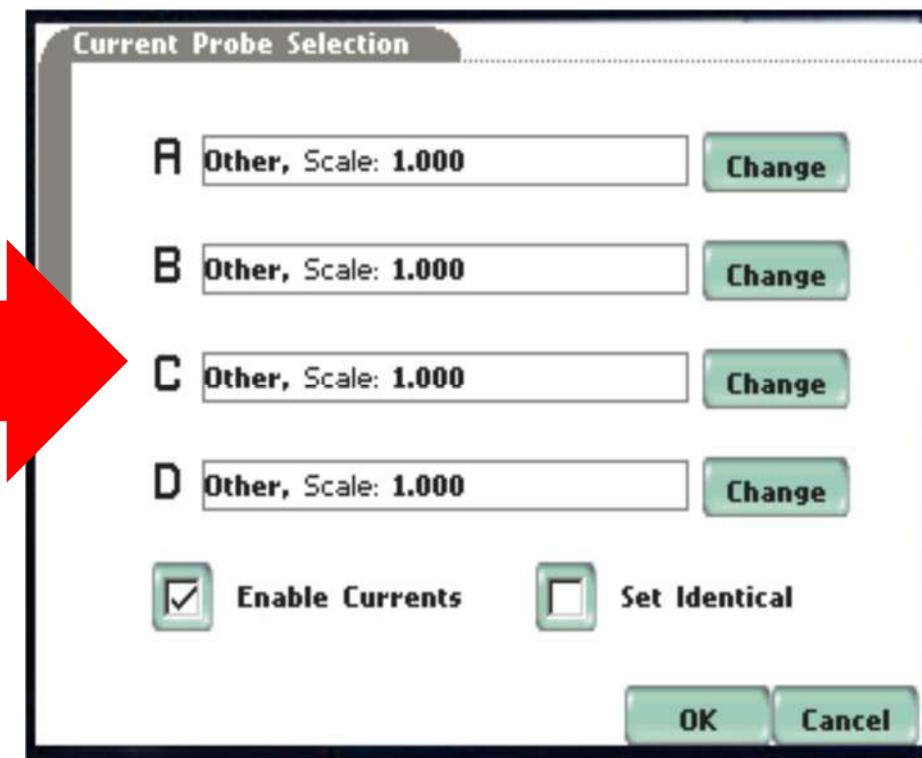
**Auto-Config**

Circuit Type: **3 Phase Wye**  
Nominal Voltage: **120.00**  
Nominal Current: **101.85\***  
Nominal Frequency: **60.00**  
Card Status: **Empty**  
Free Space: **16.00 GB**

\* Verify if the select current probes are correct. If you change current probes, press the **Probe** button

The instrument is now ready for monitoring. Trigger parameters and thresholds are set to monitor power quality. Please review the detected circuit for validity.

Summary **Probe** OK Cancel



**Current Probe Selection**

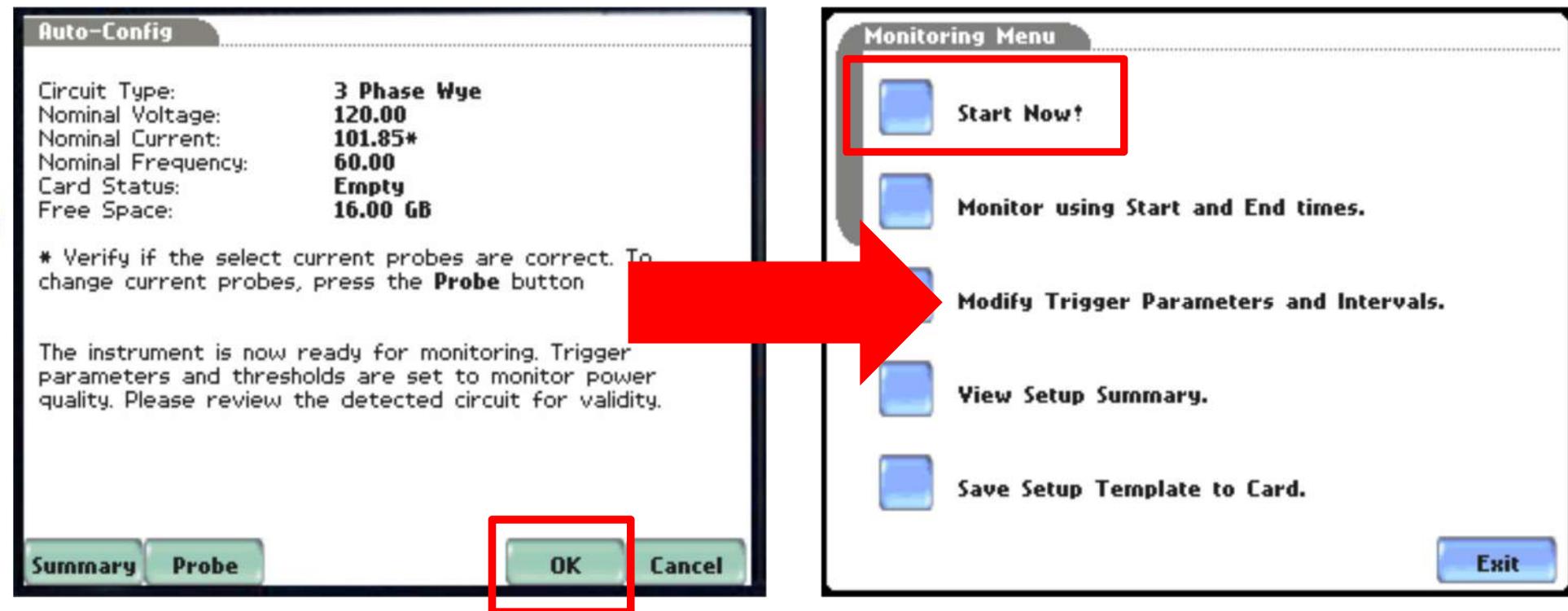
A Other, Scale: 1.000 Change  
B Other, Scale: 1.000 Change  
C Other, Scale: 1.000 Change  
D Other, Scale: 1.000 Change

Enable Currents  Set Identical

OK Cancel

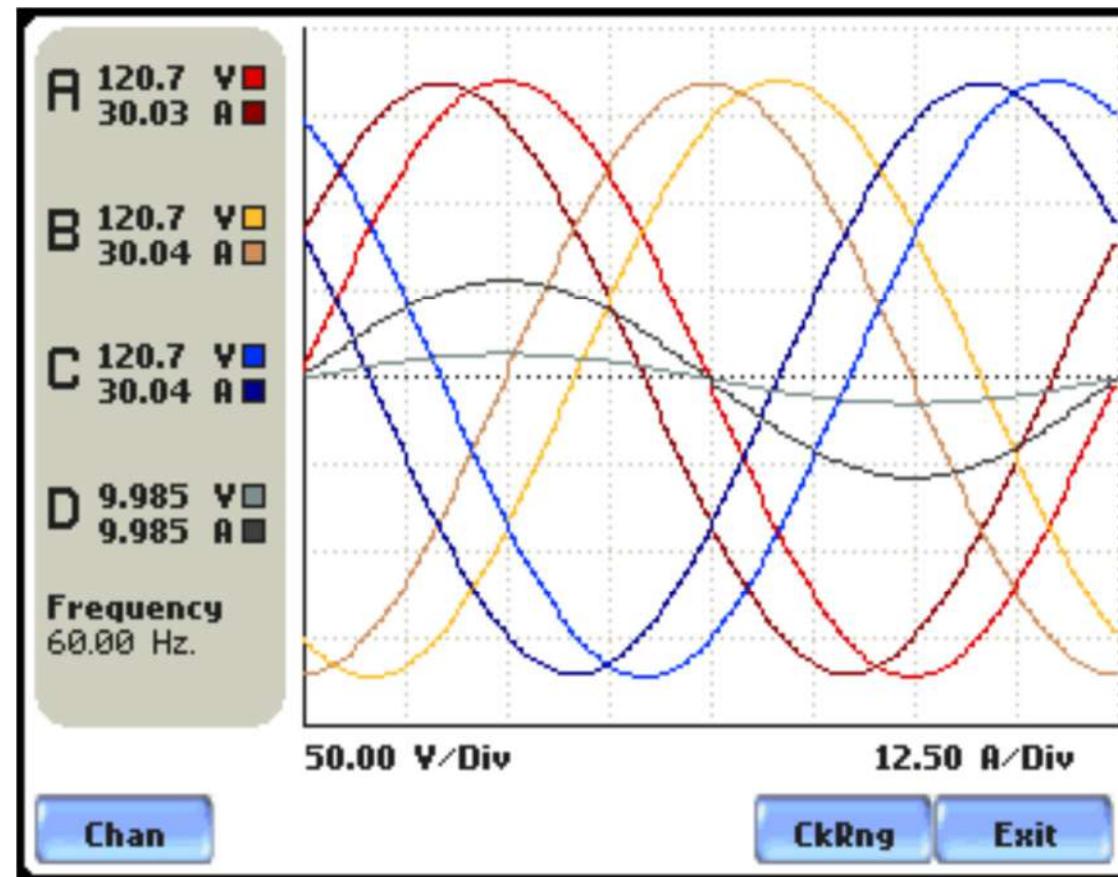
# Using EP1 to monitor harmonics

3. Select "Accept" tab to start monitoring.



## Using EP1 to monitor harmonics

4. Proceed through “Real Time Data” and then select “Scope mode” to review the occurred events



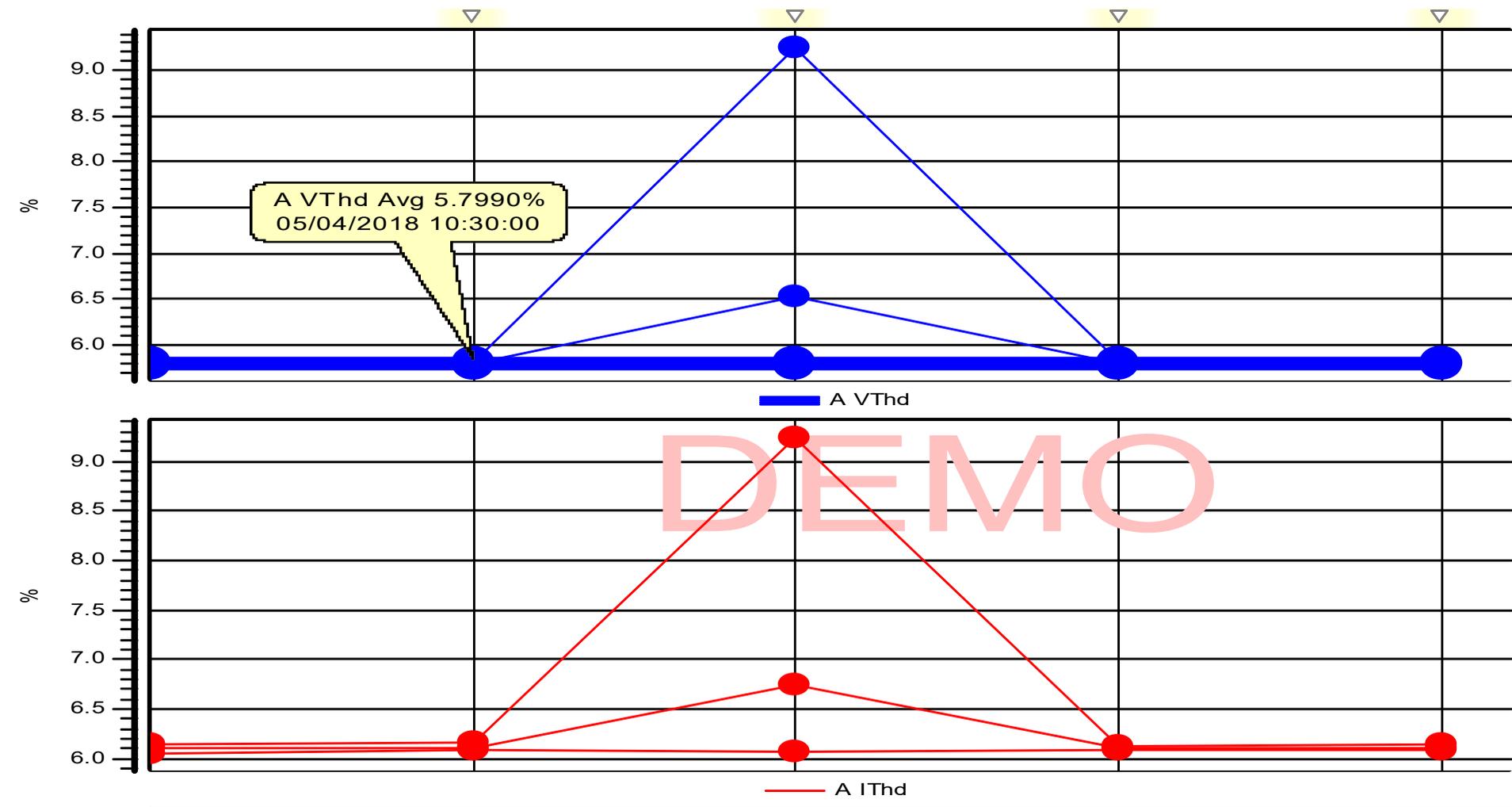
# Generating Harmonics with a standard board

- Generate harmonics by pressing “Odd harmonics” button on the PQSim



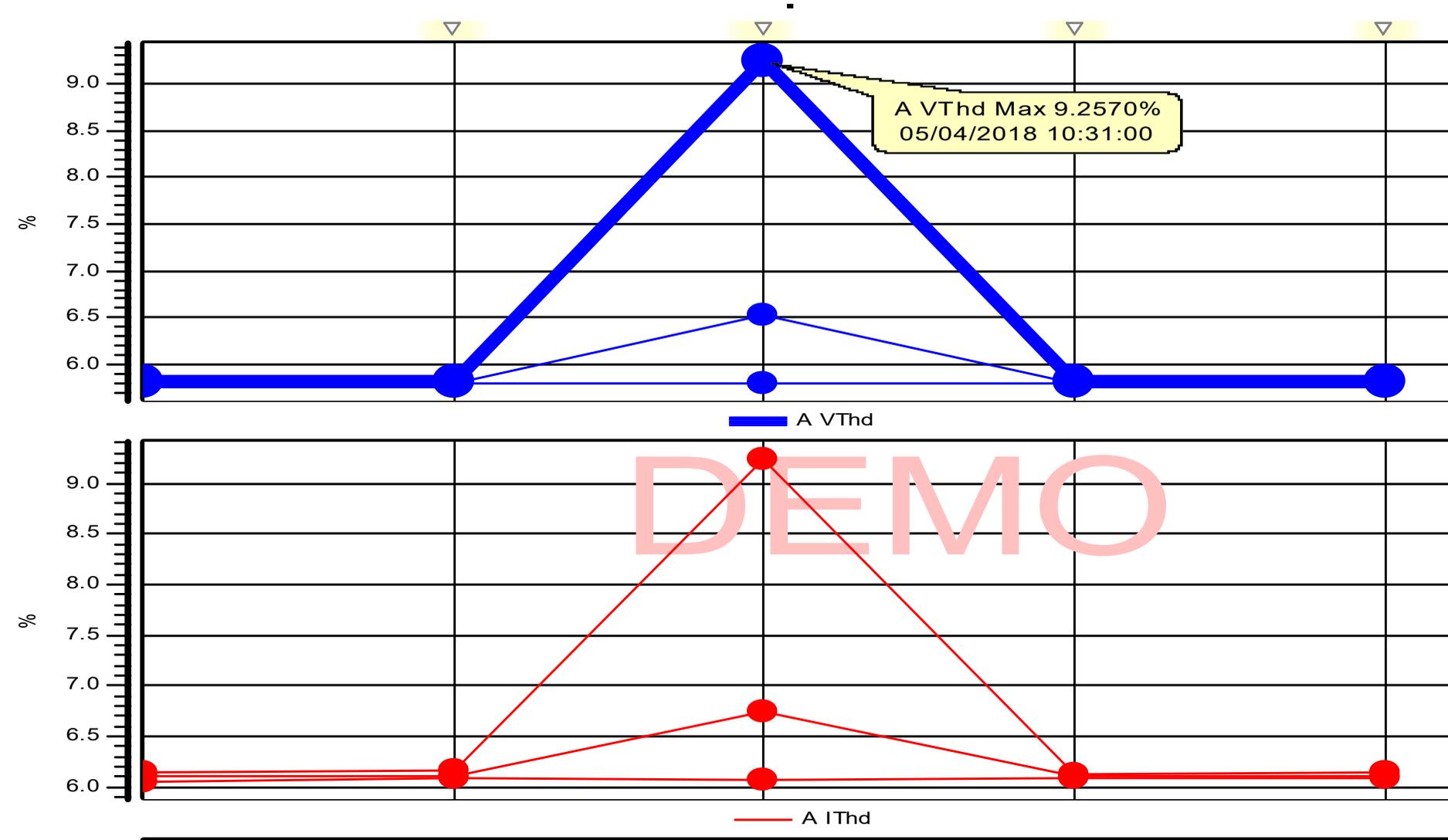
# Generating Harmonics with a standard board

- Reviewing harmonics with a standard board is **off**.



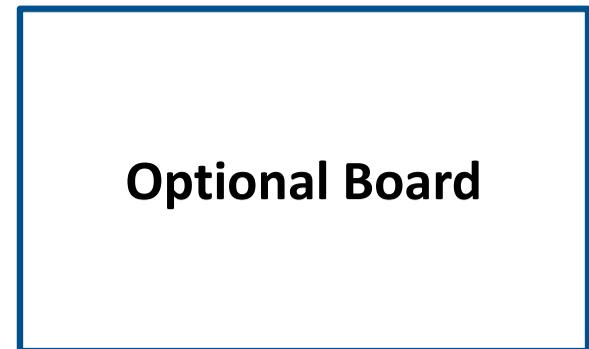
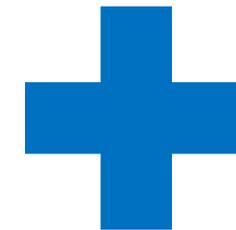
# Generating Harmonics with a standard board

- Reviewing harmonics with a standard board is **on**.



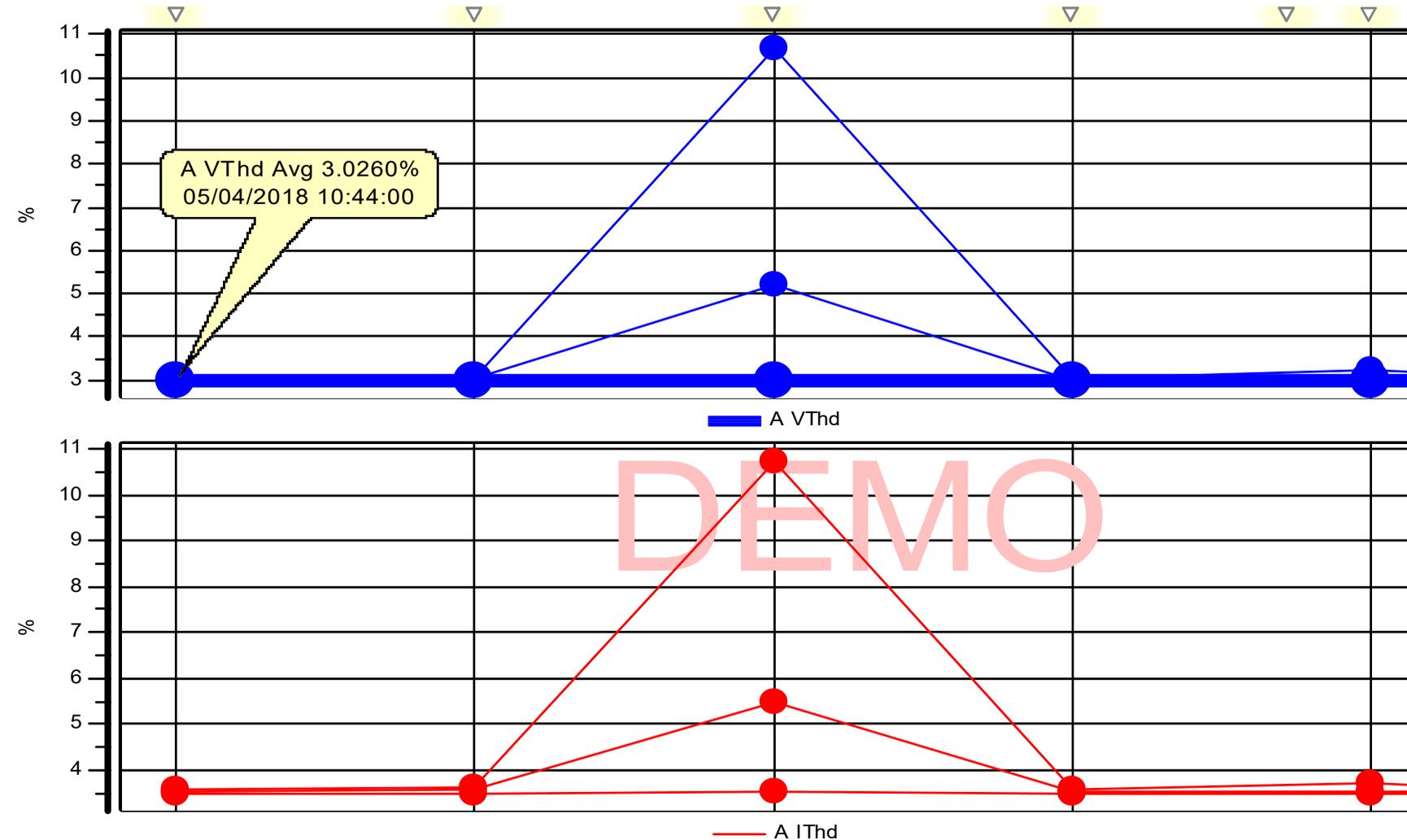
# Generating Harmonics with an optional board

- Generate harmonics by pressing “Odd harmonics” button on the PQSim



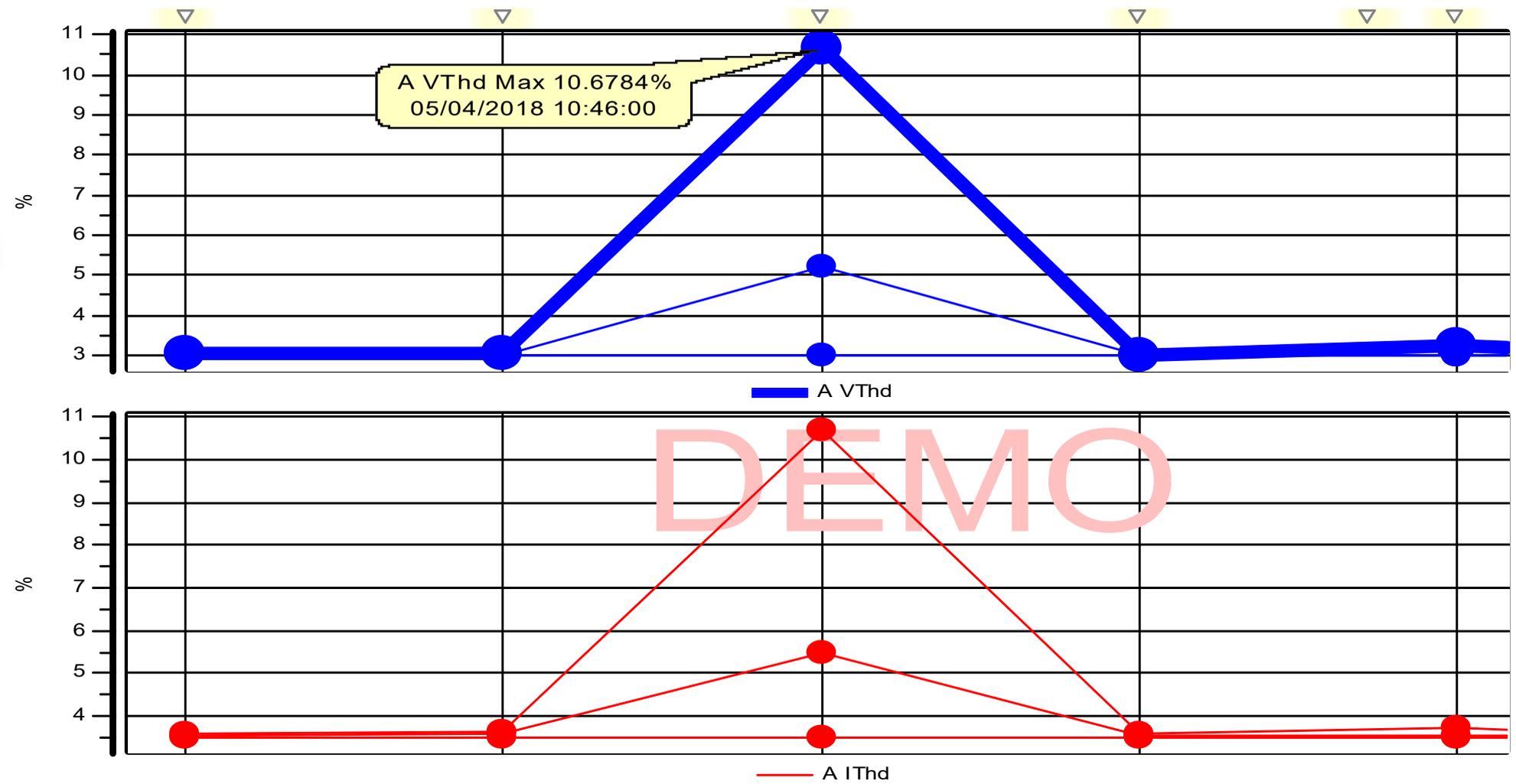
# Generating Harmonics with an optional board

- When harmonic is off



# Generating Harmonics with an optional board

- When harmonic is on.



# Comparison between a standard board and an optional board

	% THD	
	Off	On
Standard board	5.79	9.22
Optional board	3.02	10.67



## Summary

- The result of testing an optional board is as expected.
- Total Harmonics Distortion (THD) of an optional board decreased about 3 percents when harmonics off.
- The THD result was around 10 percents when harmonics on.

Any Questions?



*The end*



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