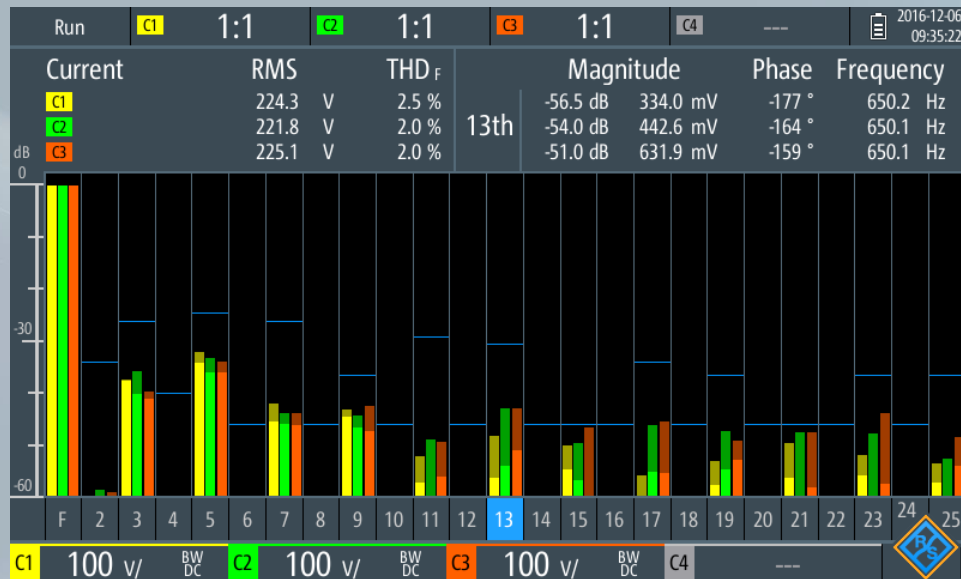


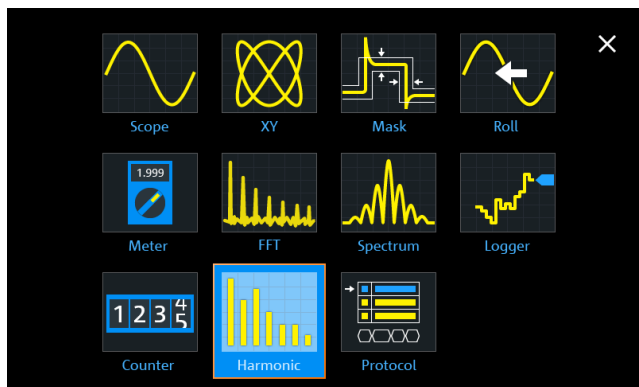
# RTH-K34 – Harmonic Analysis Option





# New Application Option: RTH-K34 Easy to use

## A) Enter harmonics mode



## B) Easily configure in menu



# Voltage characteristics of electricity supplied by public distribution systems

## Overview on EN50160 standard

### I Purpose of EN50160

- Defines main characteristics (limits or values) of voltage at the user's supply terminals in public low and medium voltage electrical distribution systems under normal operating conditions

### I Defines

- Frequency, magnitude, waveform and symmetry of the three phase voltages

### I Voltage harmonics is one aspect of EN50160

- Caused by user's non-linear loads:  
Harmonic currents cause voltage harmonics
- Important because some harmonics cause non-zero currents in the neutral conductor and can lead to overheating.

Odd harmonics				Even harmonics	
Not multiples of 3		Multiples of 3			
Order h	Relative voltage	Order h	Relative voltage	Order h	Relative voltage
5	6 %	3	5 %	2	2 %
7	5 %	9	1,5 %	4	1 %
11	3,5 %	15	0,5 %	6...24	0,5 %
13	3 %	21	0,5 %		
17	2 %				
19	1,5 %				
23	1,5 %				
25					

NOTE: No values are given for harmonics of order higher than 25, as they are usually small, but largely unpredictable due to resonance effects.