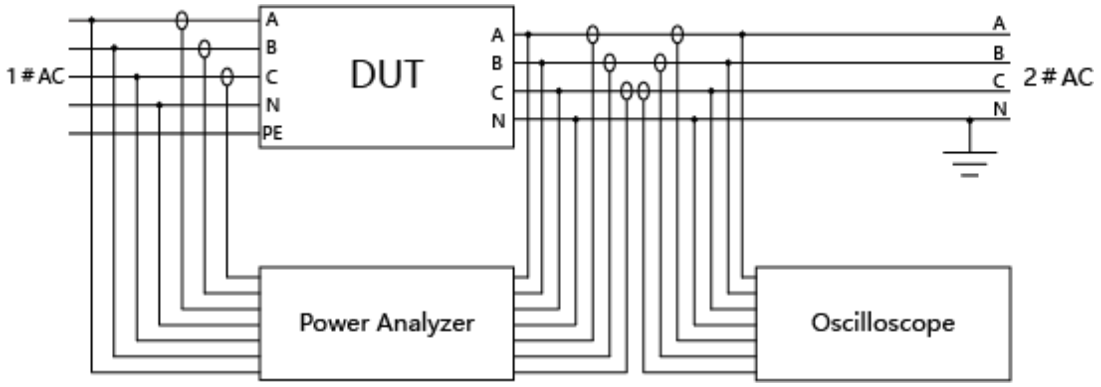
LD option

Connect the input and output sides of the AC source to the grid so that the input/output voltage is within the operating voltage range of the power supply. Change the parameters value, read and record the output current measurement value and oscilloscope waveform on the power analyzer and power supply.

The AC load function consists of CC&CP rectification mode, CC&CP lead/lag mode, and CR mode. Set parameters such as CC/CP mode, CF value and phase angle on the panel(the phase angle setting range is 90°~-90°; the CF parameter setting range is 1.414~3), record the oscilloscope waveform.

Schematic diagram of test system connection



1 CC Mode

Set the power supply to work in CC mode, the rated current value of the harmonic current generated is 25A, and the 2 ~ 40 harmonics are emitted in sequence. One type of harmonic is emitted each time, and the actual harmonic current emitted is read with the power analyzer and recorded in the table In 1, observe the oscilloscope waveform.

Steps:

1. Set the CC output mode (Figure 1-②) → set the current rating to 25A/50Hz (Figure 1-①) → select Harmonic Settings → check Coupling and Harm Select (Figure 1-③) → click 

. After setting the harmonic order components, click Settings (Figure 2).

2. Turn on the power → click APPLY → click POWER ON (start) → click OUTPUT ON (start) → click OUTPUT SWITCH (start).

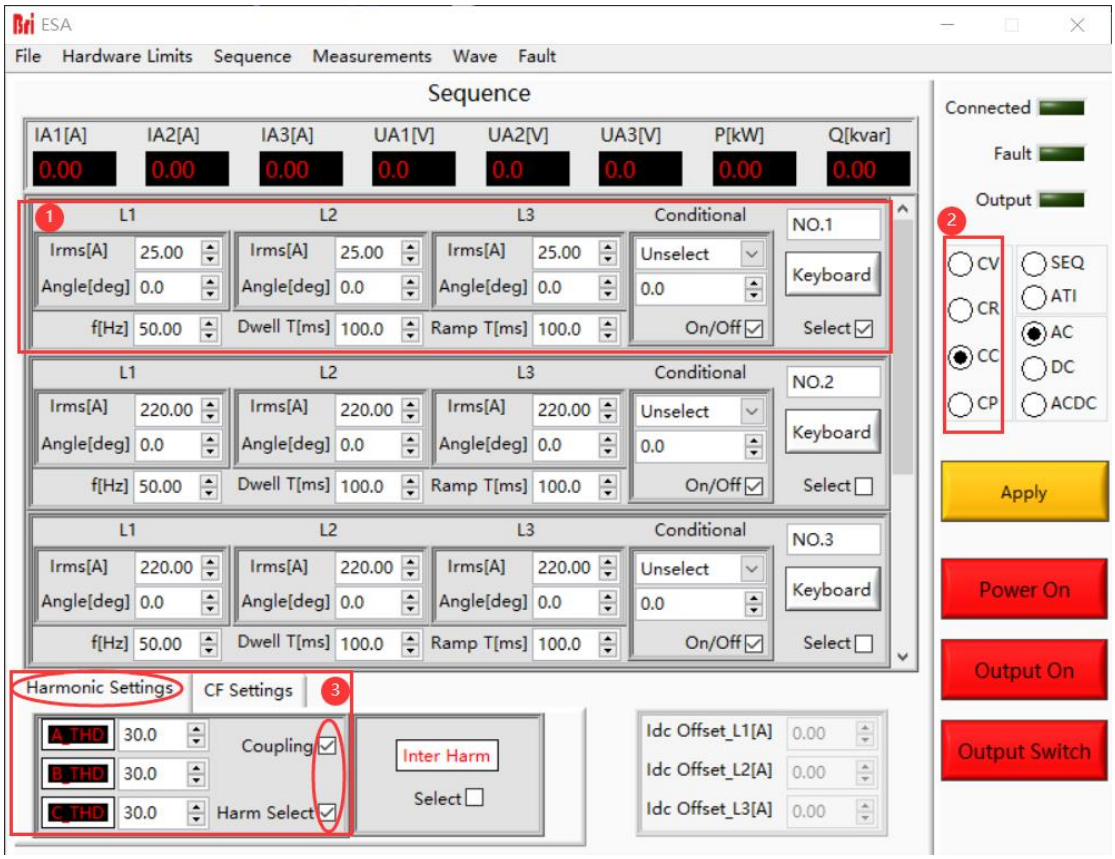


Figure 1

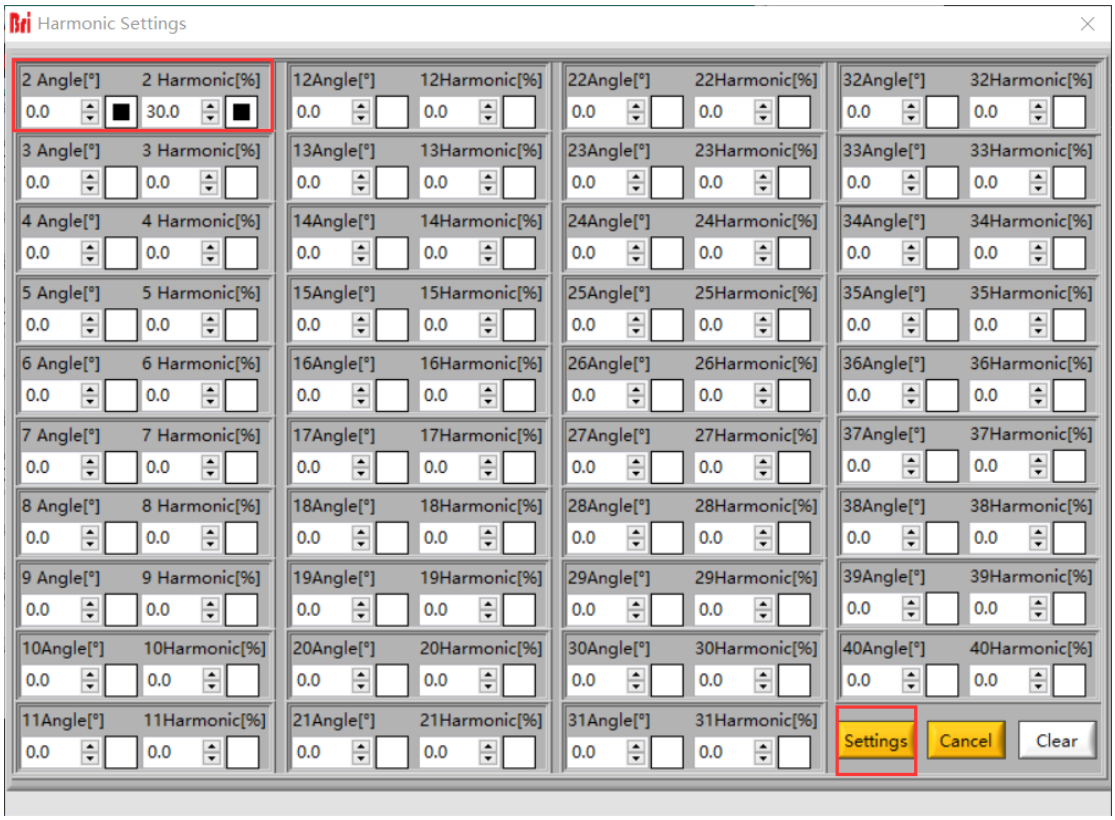
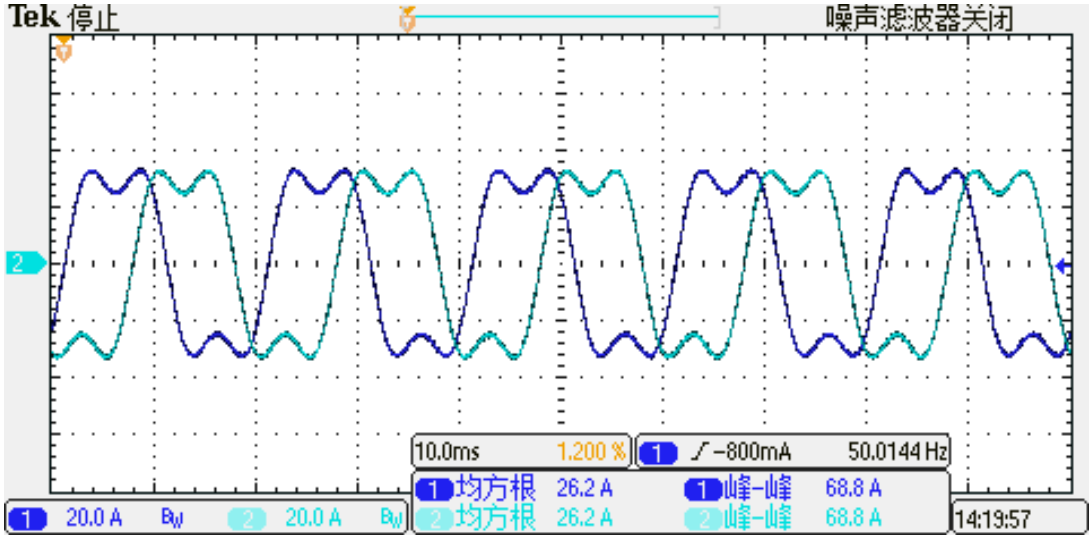


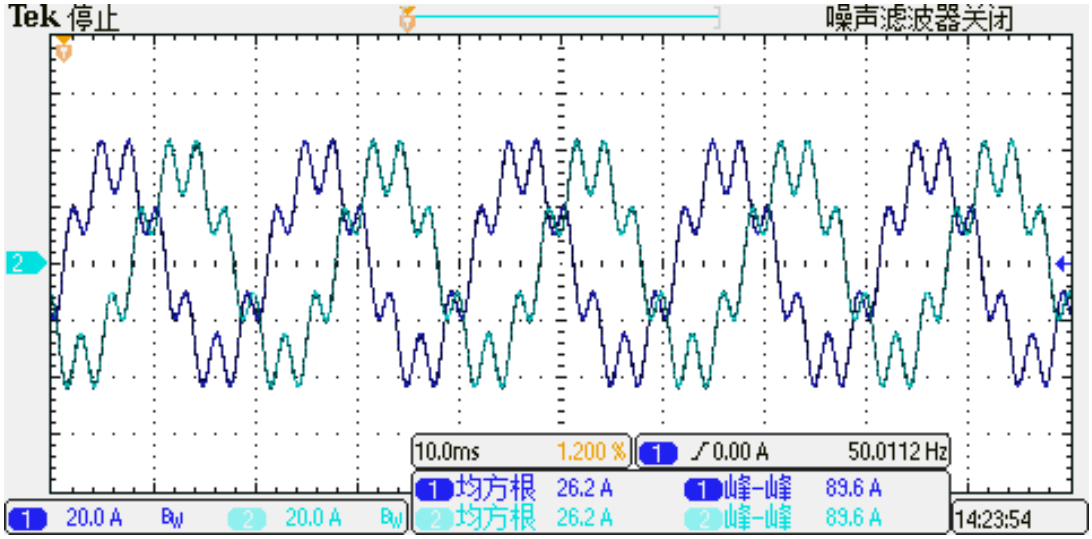
Figure 2

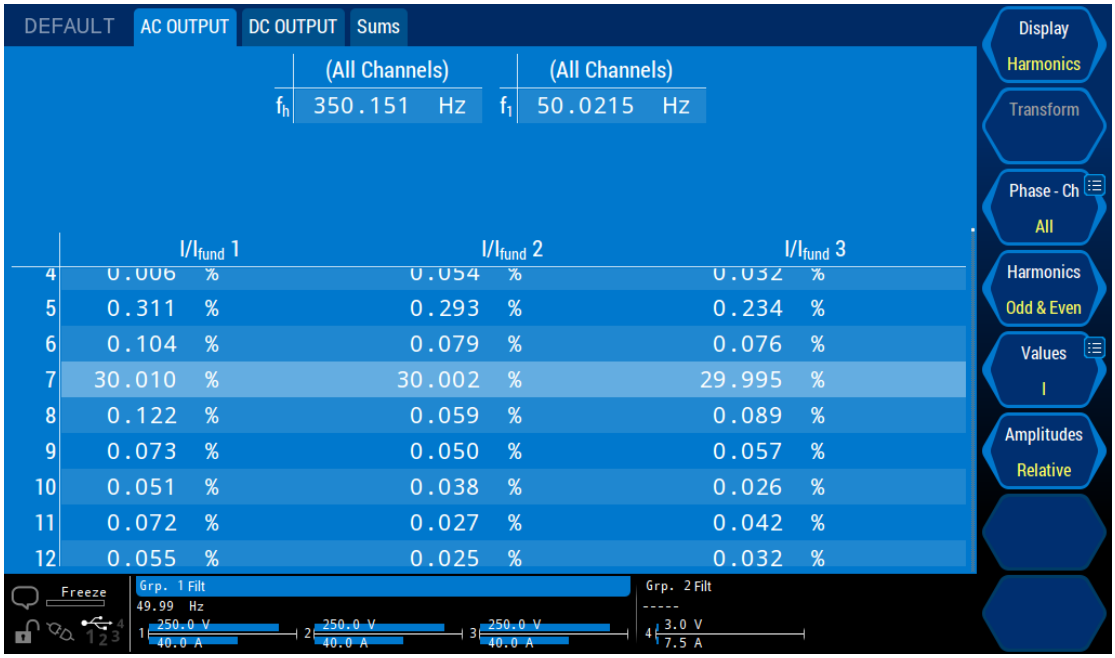
Table 1

25A / No	Harmonic	Set harmonic component	Harmonic Current (Phase A/B/C)			I_{THD} (Phase A/B/C)		
1	2nd	30%	7.52	7.49	7.50	30.12%	30.04%	30.03%
2	3rd	30%	7.45	7.43	7.43	29.81%	29.79%	29.77%
3	5th	30%	7.45	7.44	7.47	29.84%	29.85%	29.92%
4	7th	30%	7.49	7.48	7.49	30.01%	30.00%	29.99%
5	11th	30%	7.56	7.55	7.57	30.29%	30.28%	30.32%
6	13th	30%	7.57	7.57	7.56	30.35%	30.32%	30.26%
7	17th	20%	5.01	5.00	5.02	20.05%	20.03%	20.10%
8	19th	20%	5.01	5.00	5.00	20.10%	20.04%	20.01%
9	23 th	20%	5.04	5.03	5.04	20.17%	20.19%	20.17%
10	25th	20%	5.06	5.04	5.04	20.26%	20.23%	20.20%
11	29th	10%	2.53	2.53	2.53	10.13%	10.14%	10.14%
12	31 th	10%	2.54	2.53	2.53	10.19%	10.17%	10.15%
13	35th	10%	2.54	2.55	2.55	10.19%	10.22%	10.24%
14	37th	10%	2.56	2.55	2.55	10.28%	10.26%	10.24%
15	40th	10%	2.57	2.55	2.55	10.30%	10.21%	10.21%

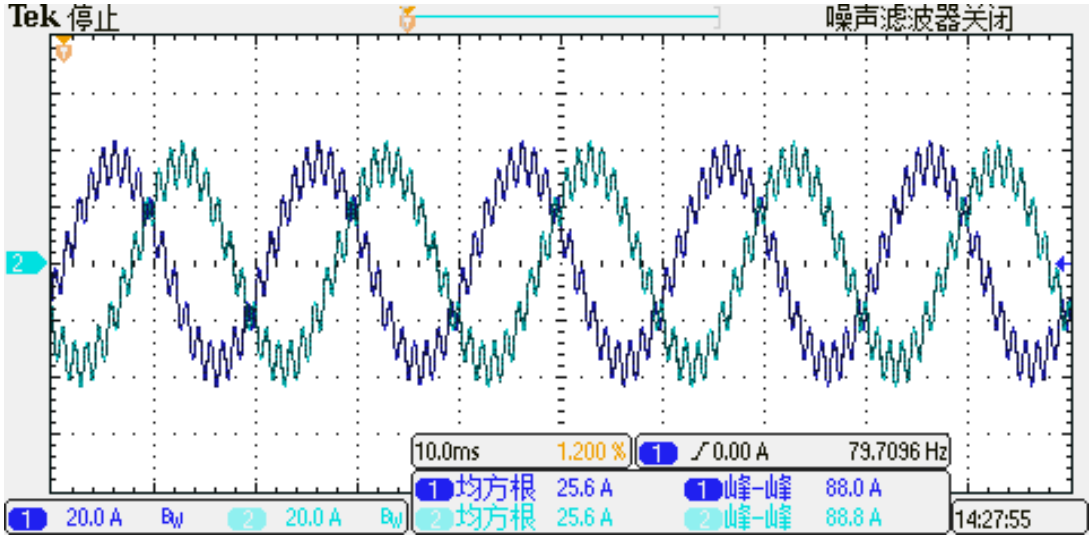


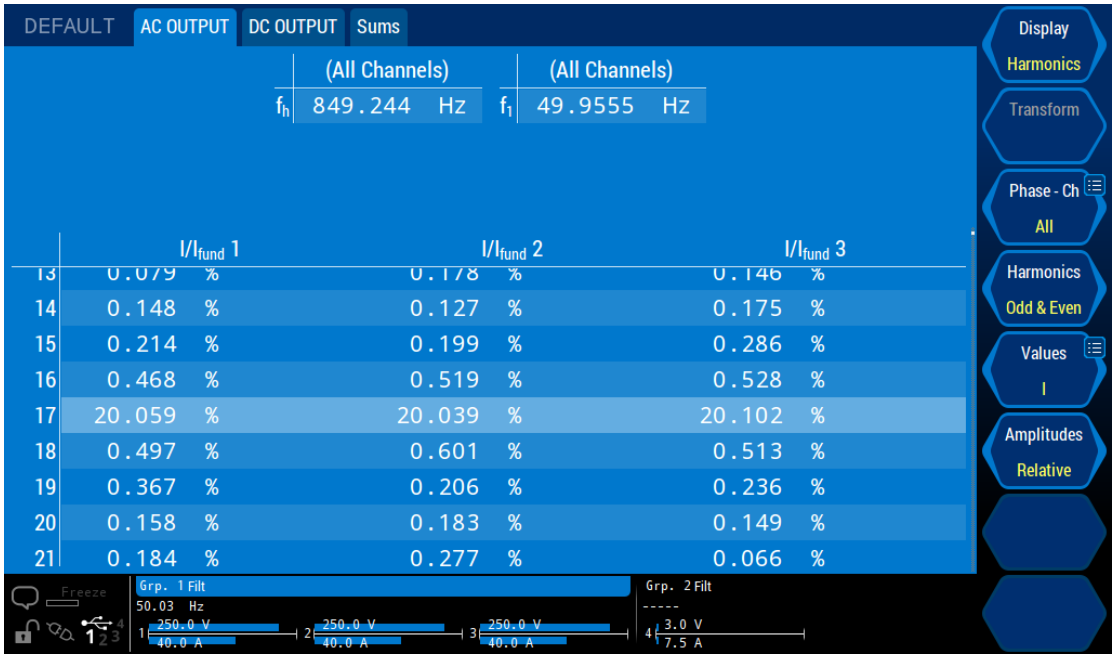
3rd harmonic-set content 30%



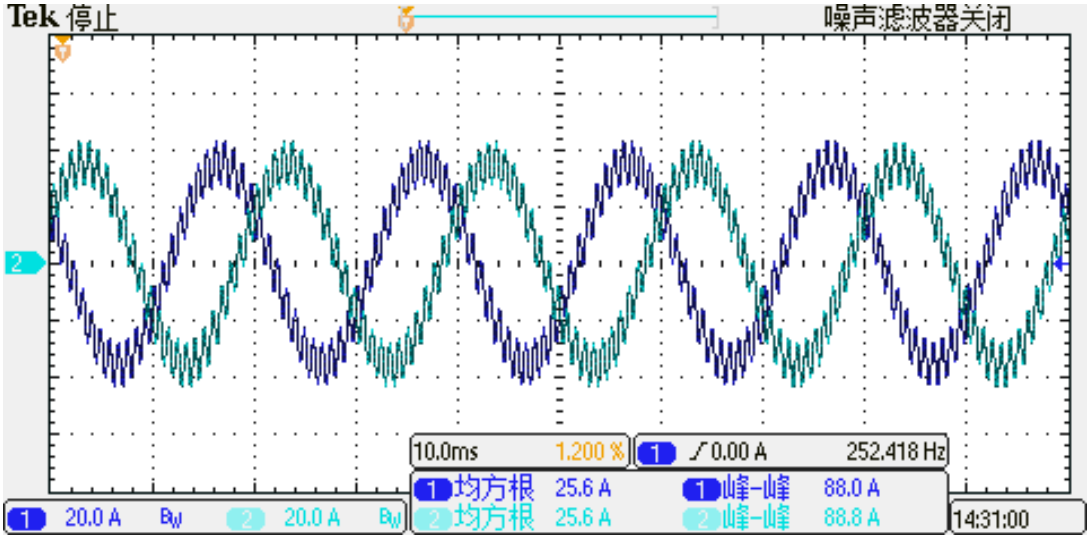


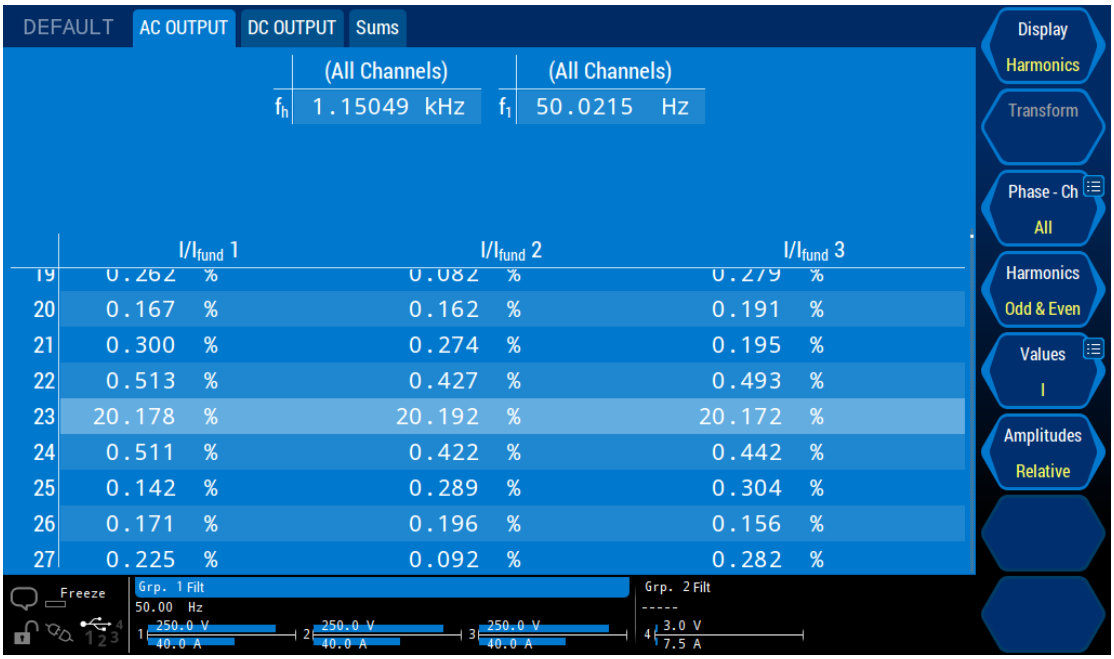
7th harmonic-set content 30%



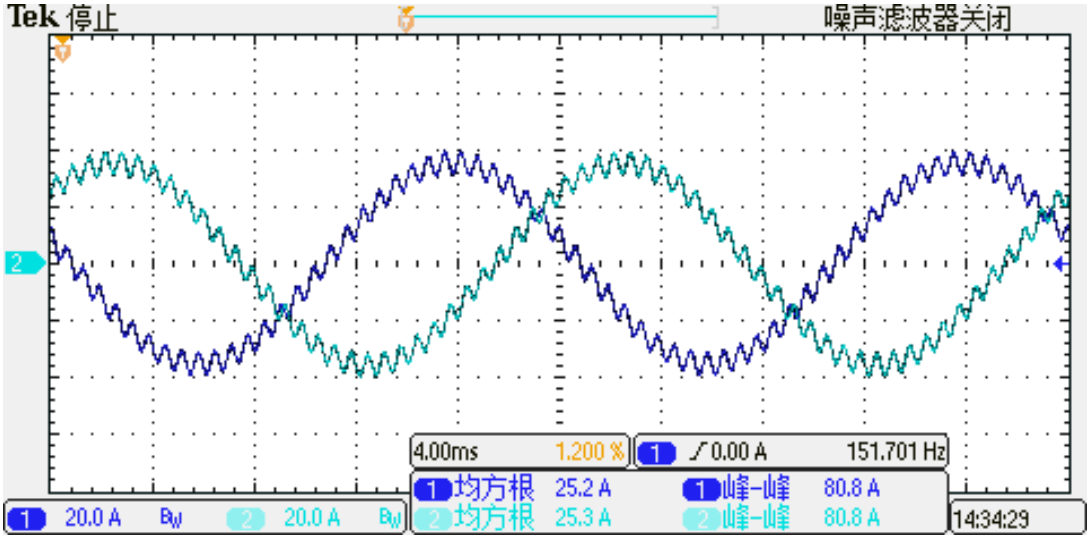


17th harmonic-set content 20%

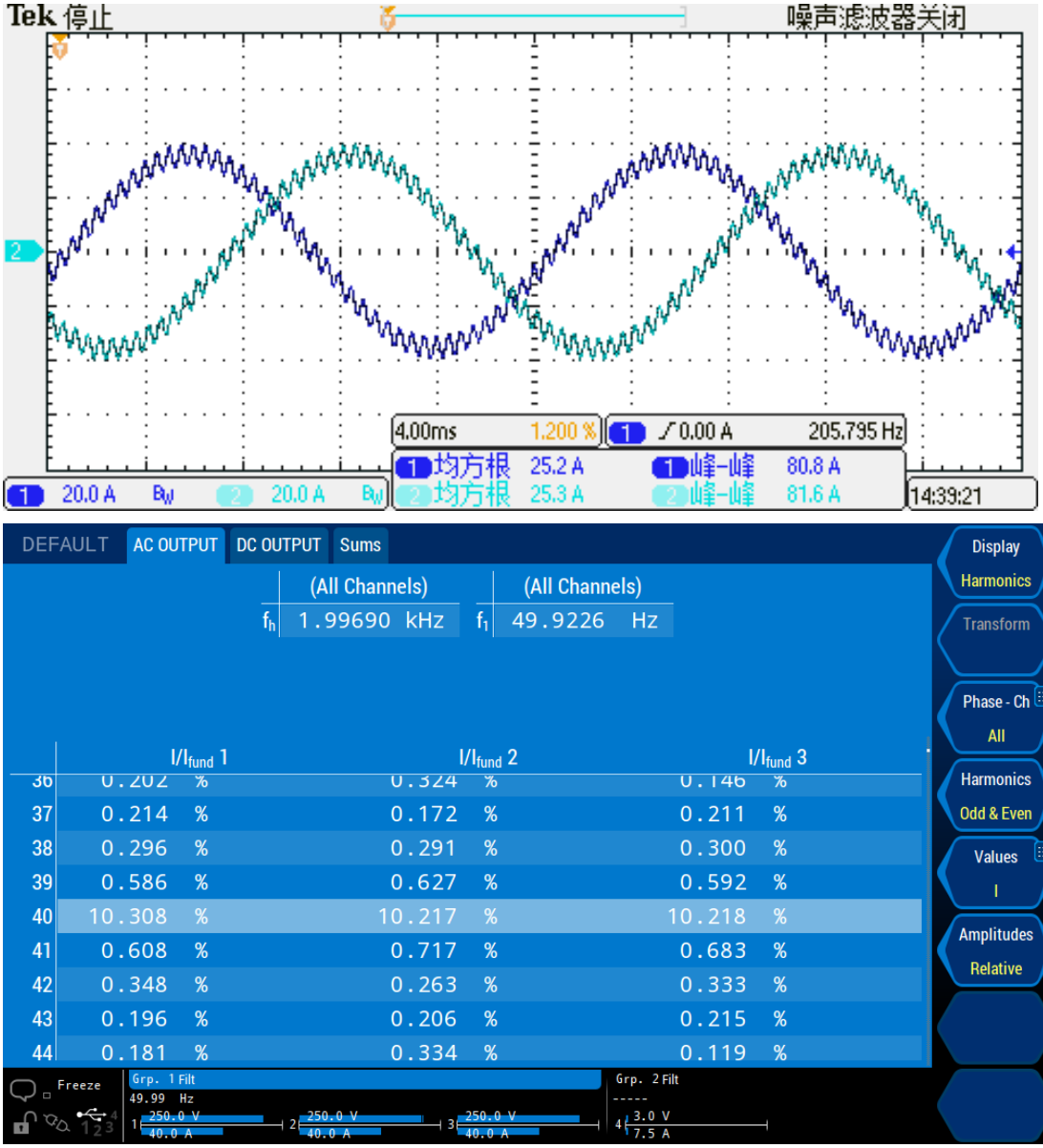




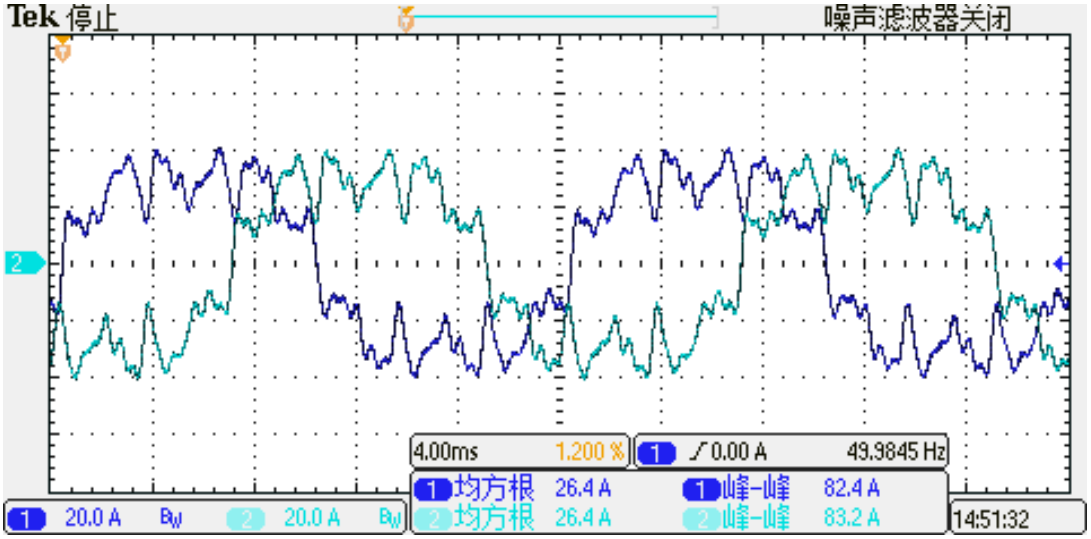
23th harmonic-set content 20%



31th harmonic-set content 10%



40th harmonic-set content 10%



Multi-harmonic superposition (3rd harmonic-set content 20% + 11th harmonic-set content 20% + 17th harmonic-set content 10% + 23th harmonic-set content 10% + 35th harmonic-set content 5% + 40th harmonic-set content 5%)

2 CP Mode

Set the power supply to work in CP mode, the rated total capacity of generating harmonic current is 30KW, set the crest factor CF value to 1.414 ~ 3, read and record the oscilloscope waveform.

Steps:

1. Set the CP output mode (Figure 3-②) → set the output rated power value to 30KW (Figure 3-①) → select CF Settings → check Select (Figure 3-③) → and click 

to set the crest factor.

2. Turn on the power → click APPLY → click POWER ON (start) → click OUTPUT ON (start) → click OUTPUT SWITCH (start).

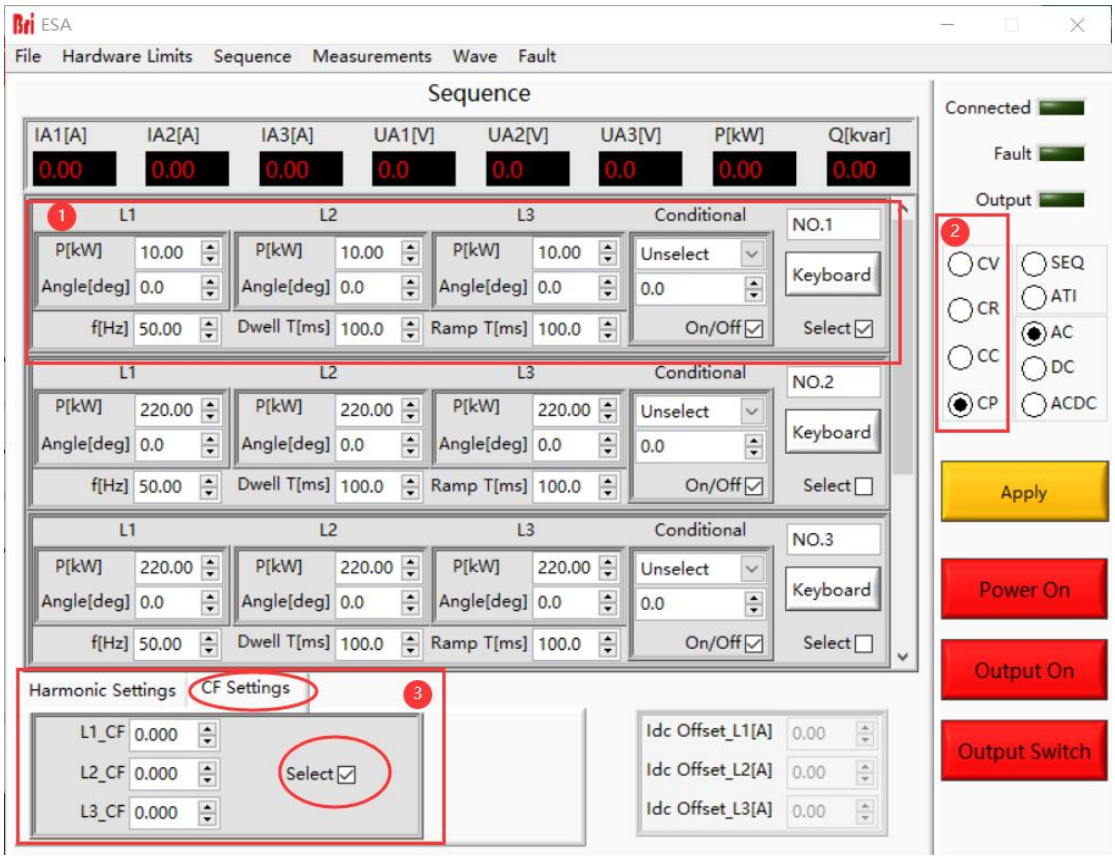
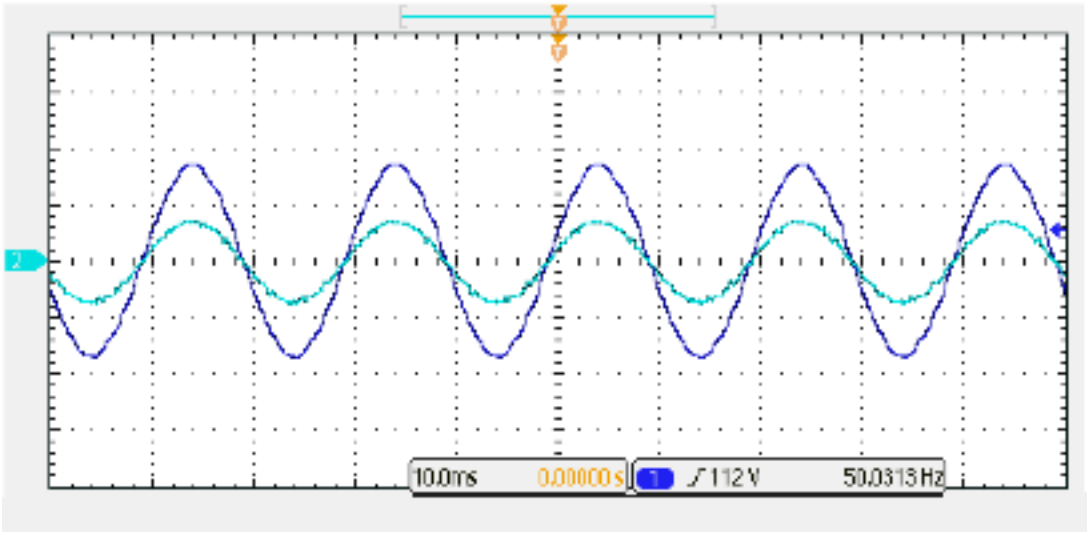
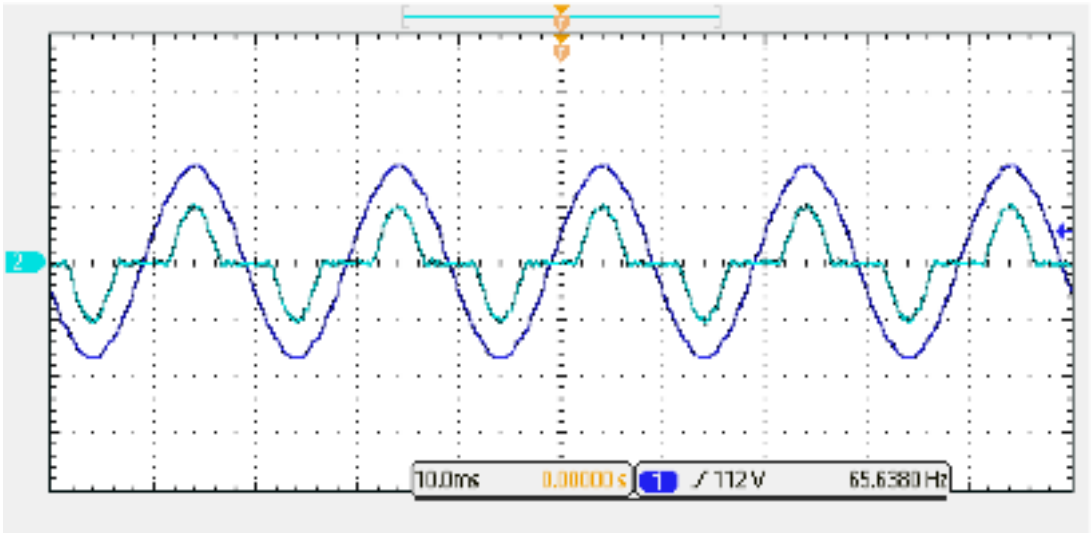


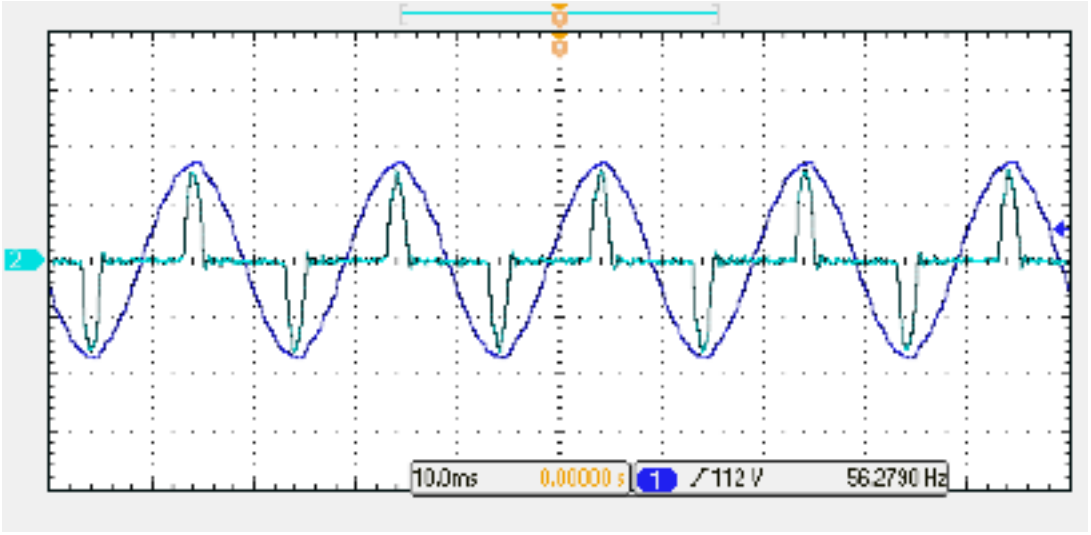
Figure 3



CF=1.414


10.0ms
0.00000 s
1
112 V
65.6380 Hz

CF=2


10.0ms
0.00000 s
1
112 V
56.2790 Hz

CF=3