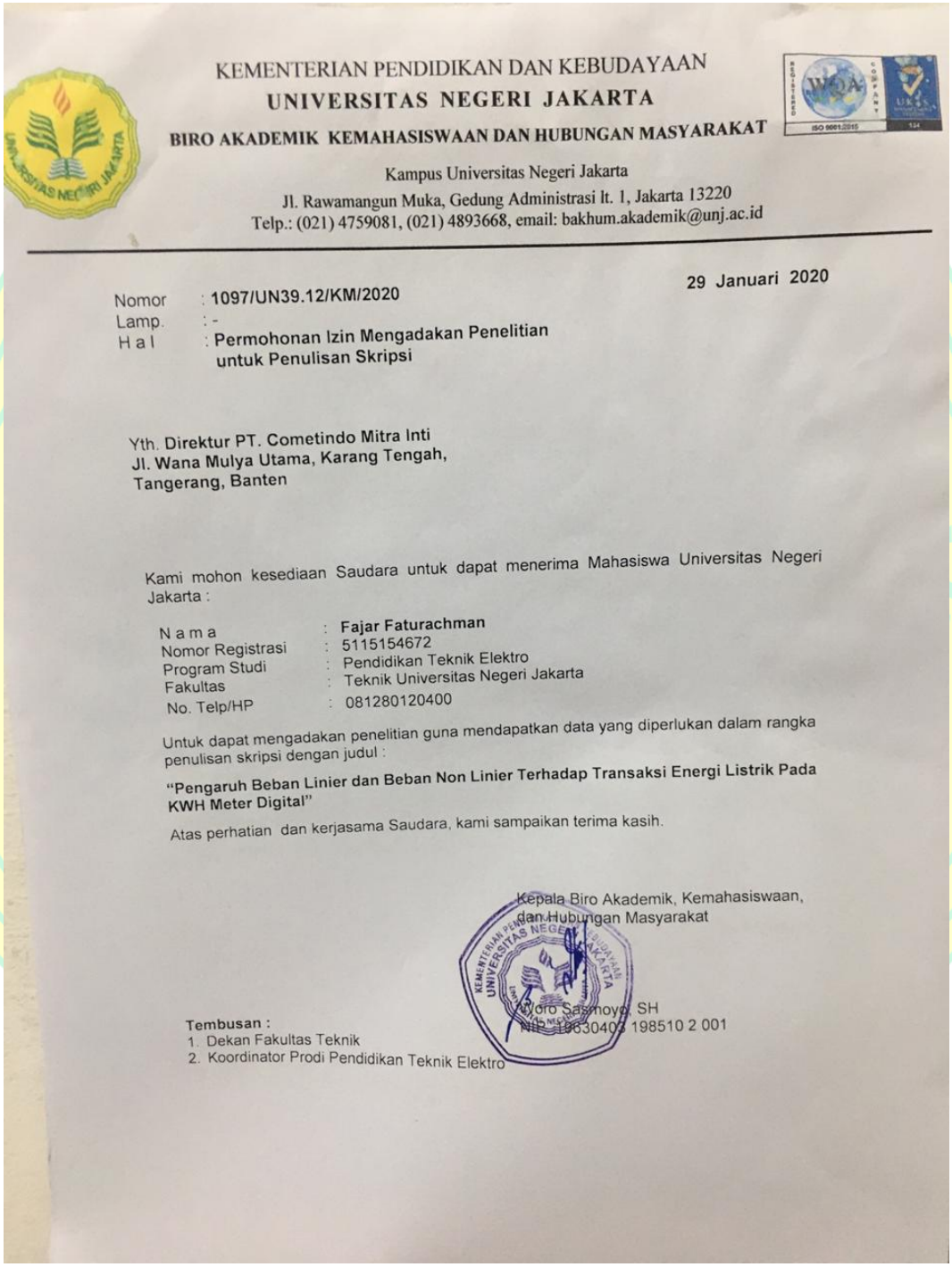
LAMPIRAN

Lampiran 1 Surat Penelitian Universitas Negeri Jakarta



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS NEGERI JAKARTA
BIRO AKADEMIK KEMAHASISWAAN DAN HUBUNGAN MASYARAKAT

Kampus Universitas Negeri Jakarta
Jl. Rawamangun Muka, Gedung Administrasi lt. 1, Jakarta 13220
Telp.: (021) 4759081, (021) 4893668, email: bakhum.akademik@unj.ac.id

Nomor : 1097/UN39.12/KM/2020
Lamp. : -
H a l : **Permohonan Izin Mengadakan Penelitian untuk Penulisan Skripsi**

29 Januari 2020

Yth. Direktur PT. Cometindo Mitra Inti
Jl. Wana Mulya Utama, Karang Tengah,
Tangerang, Banten

Kami mohon kesediaan Saudara untuk dapat menerima Mahasiswa Universitas Negeri Jakarta :

N a m a	:	**Fajar Faturachman**
Nomor Registrasi	:	5115154672
Program Studi	:	Pendidikan Teknik Elektro
Fakultas	:	Teknik Universitas Negeri Jakarta
No. Telp/HP	:	081280120400

Untuk dapat mengadakan penelitian guna mendapatkan data yang diperlukan dalam rangka penulisan skripsi dengan judul :

"Pengaruh Beban Linier dan Beban Non Linier Terhadap Transaksi Energi Listrik Pada KWH Meter Digital"

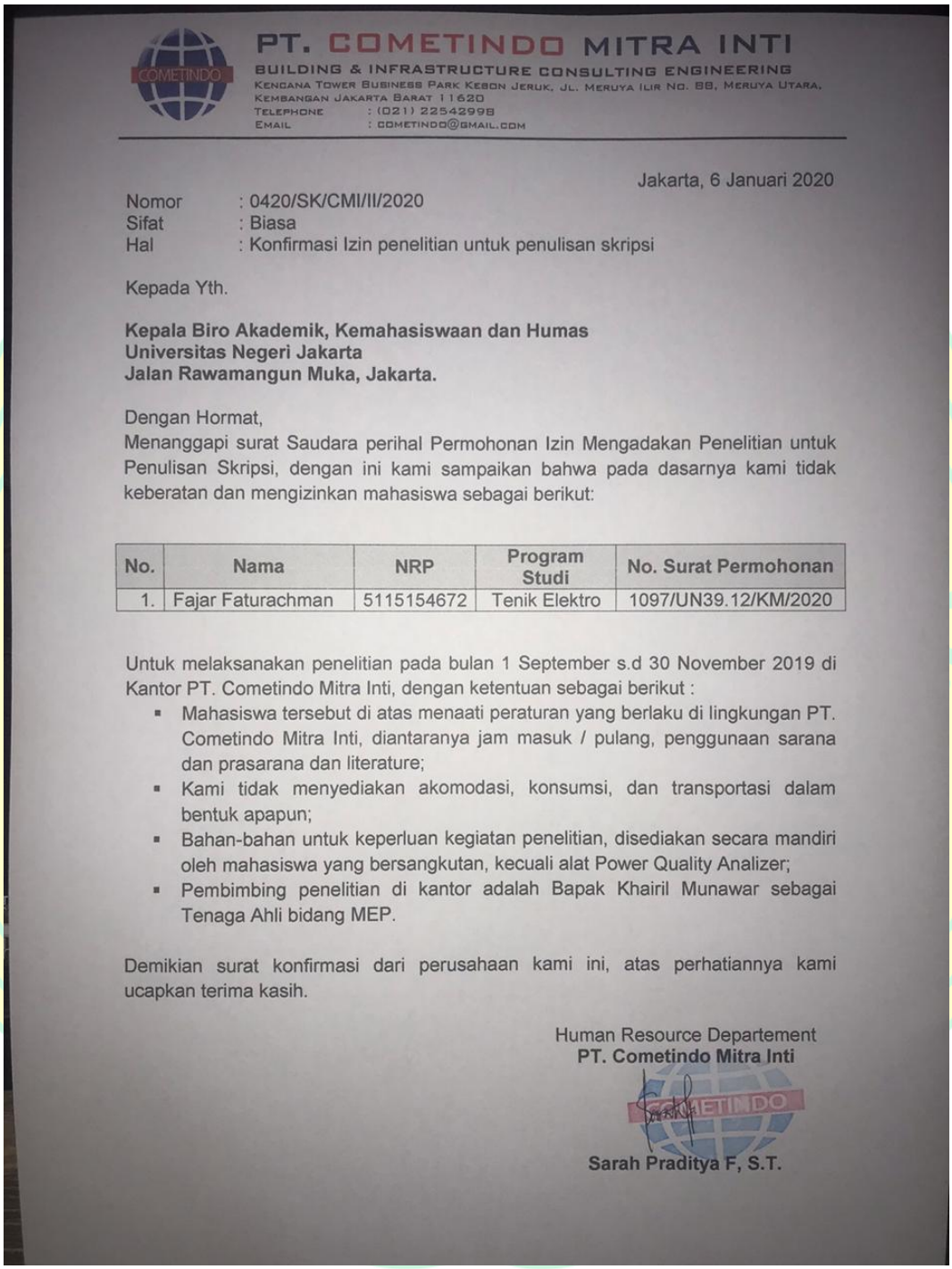
Atas perhatian dan kerjasama Saudara, kami sampaikan terima kasih.

Kepala Biro Akademik, Kemahasiswaan,
dan Hubungan Masyarakat

Widodo Sasmoyo, SH
NIP. 19630403 198510 2 001

Tembusan :
1. Dekan Fakultas Teknik
2. Koordinator Prodi Pendidikan Teknik Elektro

Lampiran 2 Surat Penelitian Cometindo Mitra Inti



PT. COMETINDO MITRA INTI
BUILDING & INFRASTRUCTURE CONSULTING ENGINEERING
Kencana Tower Business Park Kebon Jeruk, Jl. Meruya Ilir No. 88, Meruya Utara,
Kembangan Jakarta Barat 11620
Telephone : (021) 22542998
Email : cometindo@gmail.com

Jakarta, 6 Januari 2020

Nomor : 0420/SK/CMI/II/2020
Sifat : Biasa
Hal : Konfirmasi Izin penelitian untuk penulisan skripsi

Kepada Yth.

Kepala Biro Akademik, Kemahasiswaan dan Humas
Universitas Negeri Jakarta
Jalan Rawamangun Muka, Jakarta.

Dengan Hormat,
Menanggapi surat Saudara perihal Permohonan Izin Mengadakan Penelitian untuk Penulisan Skripsi, dengan ini kami sampaikan bahwa pada dasarnya kami tidak keberatan dan mengizinkan mahasiswa sebagai berikut:

No.	Nama	NRP	Program Studi	No. Surat Permohonan
1.	Fajar Faturachman	5115154672	Tenik Elektro	1097/UN39.12/KM/2020

Untuk melaksanakan penelitian pada bulan 1 September s.d 30 November 2019 di Kantor PT. Cometindo Mitra Inti, dengan ketentuan sebagai berikut :

- Mahasiswa tersebut di atas menaati peraturan yang berlaku di lingkungan PT. Cometindo Mitra Inti, diantaranya jam masuk / pulang, penggunaan sarana dan prasarana dan literature;
- Kami tidak menyediakan akomodasi, konsumsi, dan transportasi dalam bentuk apapun;
- Bahan-bahan untuk keperluan kegiatan penelitian, disediakan secara mandiri oleh mahasiswa yang bersangkutan, kecuali alat Power Quality Analizer;
- Pembimbing penelitian di kantor adalah Bapak Khairil Munawar sebagai Tenaga Ahli bidang MEP.

Demikian surat konfirmasi dari perusahaan kami ini, atas perhatiannya kami ucapkan terima kasih.

Human Resource Departement
PT. Cometindo Mitra Inti

Sarah Praditya F, S.T.

Lampiran 3 Foto Kegiatan Penelitian

Lampiran 4 Hasil Penelitian Beban Linier Lampu 40 Watt

HARMONICS LIST

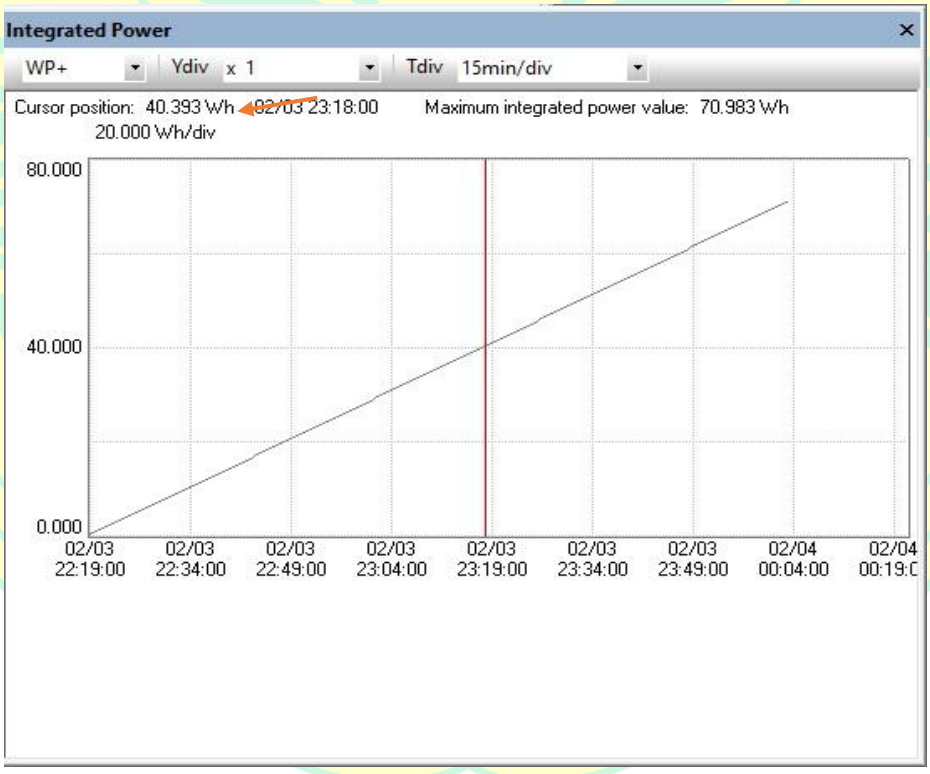
CH1 | I | VALUE | iHarmOFF

Order	(A)	Order	(A)	Order	(A)	Order	(A)
1	0.239	17	0.001	33	0.001	49	0.000
2	0.001	18	0.001	34	0.001	50	0.000
3	0.003	19	0.000	35	0.001	THD	2.36 (%)
4	0.001	20	0.000	36	0.000	hharm	0.028 (A)
5	0.002	21	0.001	37	0.001		
6	0.001	22	0.000	38	0.000		
7	0.002	23	0.001	39	0.001		
8	0.001	24	0.000	40	0.001		
9	0.001	25	0.001	41	0.001		
10	0.000	26	0.000	42	0.000		
11	0.001	27	0.000	43	0.000		
12	0.001	28	0.000	44	0.000		
13	0.001	29	0.001	45	0.000		
14	0.000	30	0.000	46	0.000		
15	0.000	31	0.000	47	0.001		

HARMONICS LIST

CH1 | U | VALUE | iHarmOFF

Order	(V)	Order	(V)	Order	(V)	Order	(V)
1	220.31	17	0.41	33	0.21	49	0.13
2	0.50	18	0.03	34	0.04	50	0.05
3	3.15	19	0.14	35	0.33	THD	1.92 (%)
4	0.08	20	0.02	36	0.08	hharm	0.82 (V)
5	1.27	21	0.27	37	0.39		
6	0.05	22	0.04	38	0.07		
7	1.25	23	0.44	39	0.39		
8	0.05	24	0.05	40	0.07		
9	1.44	25	0.11	41	0.29		
10	0.04	26	0.03	42	0.07		
11	0.42	27	0.09	43	0.21		
12	0.05	28	0.05	44	0.08		
13	0.53	29	0.36	45	0.32		
14	0.03	30	0.07	46	0.09		
15	0.59	31	0.31	47	0.35		

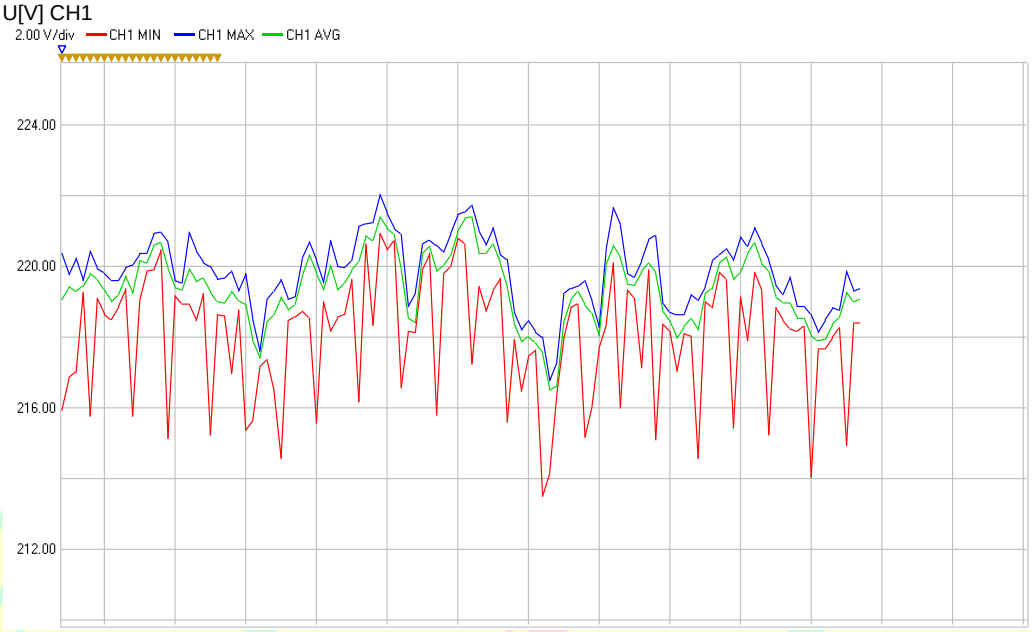


Time Plot
Graph

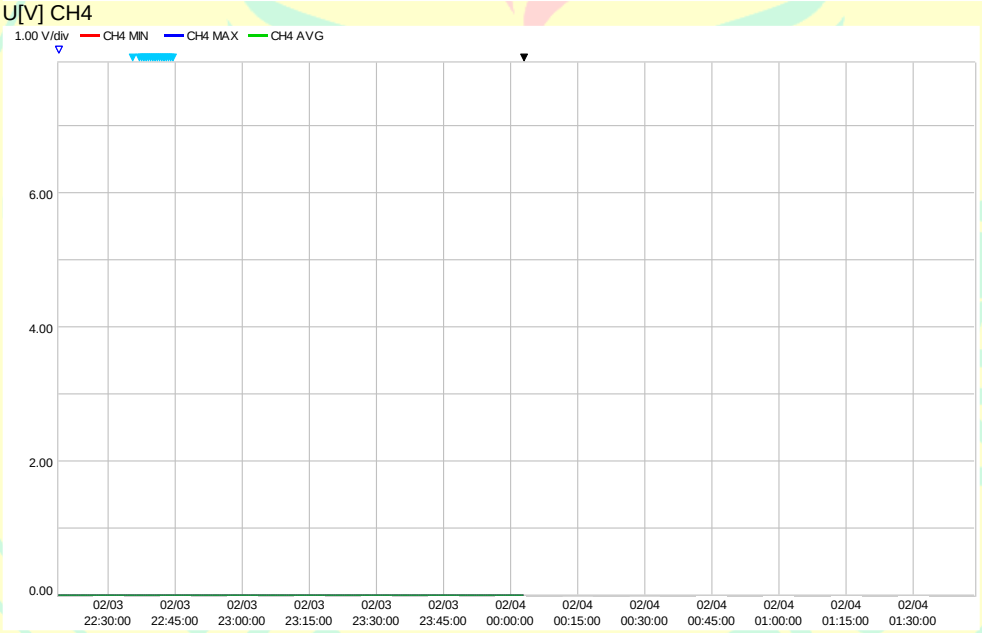
Page 1
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\40 watt\B0020304

2020/02/03 22:19:00 - 2020/02/04 00:03:00

U[V] CH1


2.00 V/div
CH1 MIN
CH1 MAX
CH1 AVG
224.00
220.00
216.00
212.00

U[V] CH4

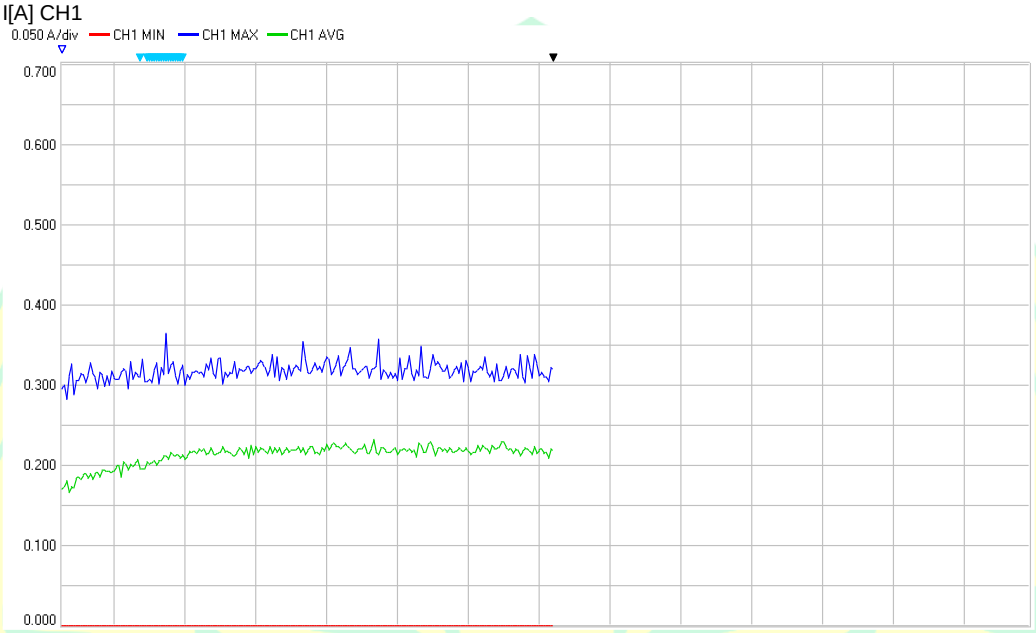

1.00 V/div
CH4 MIN
CH4 MAX
CH4 AVG
6.00
4.00
2.00
0.00
02/03 22:30:00
02/03 22:45:00
02/03 23:00:00
02/03 23:15:00
02/03 23:30:00
02/03 23:45:00
02/04 00:00:00
02/04 00:15:00
02/04 00:30:00
02/04 00:45:00
02/04 01:00:00
02/04 01:15:00
02/04 01:30:00

Time Plot
Graph

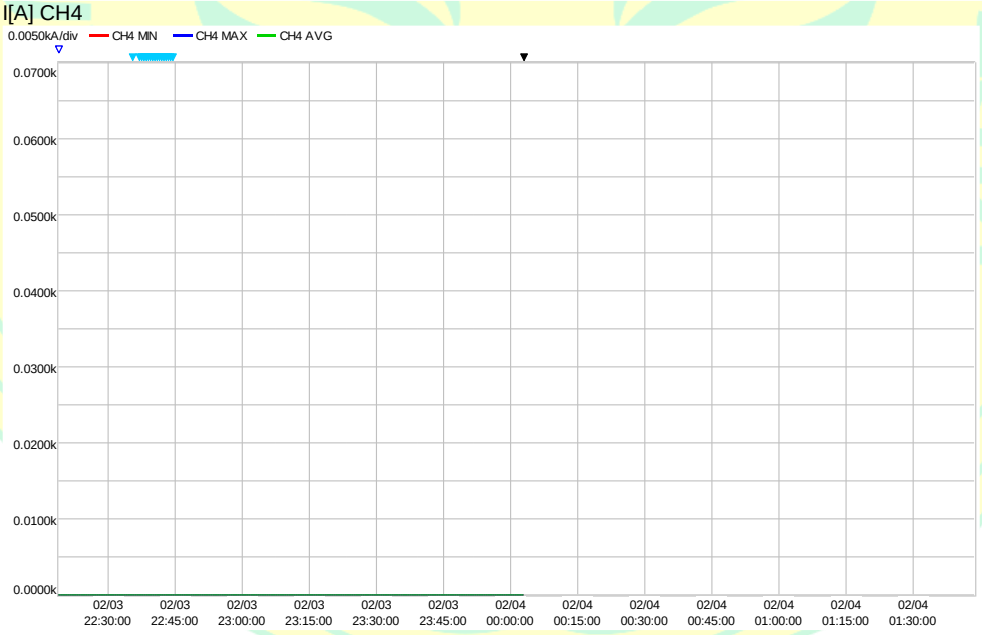
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\40 watt\B0020304

2020/02/03 22:19:00 - 2020/02/04 00:03:00

I[A] CH1



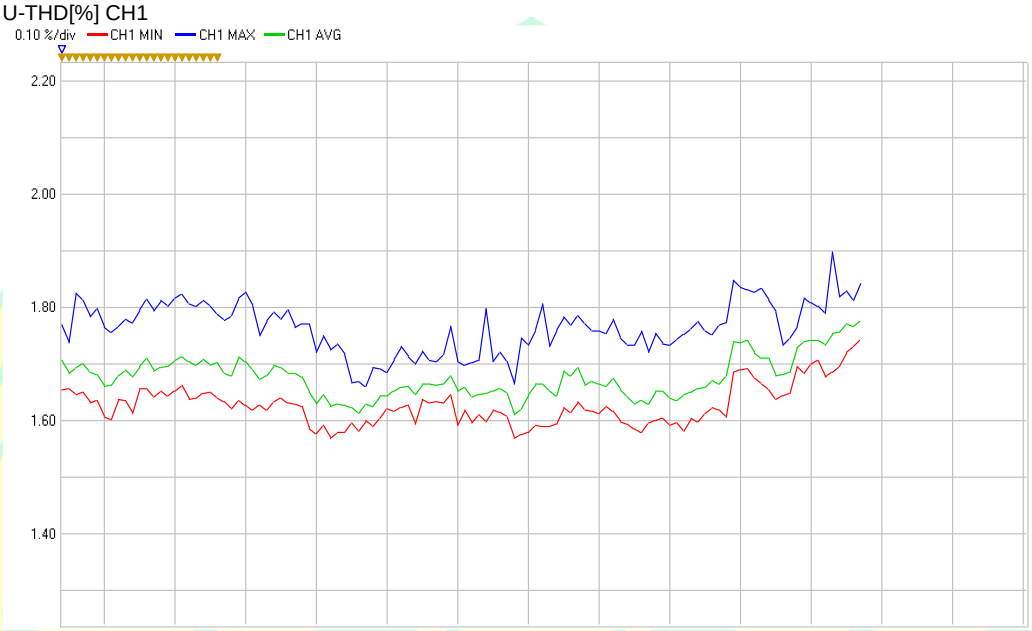
I[A] CH4



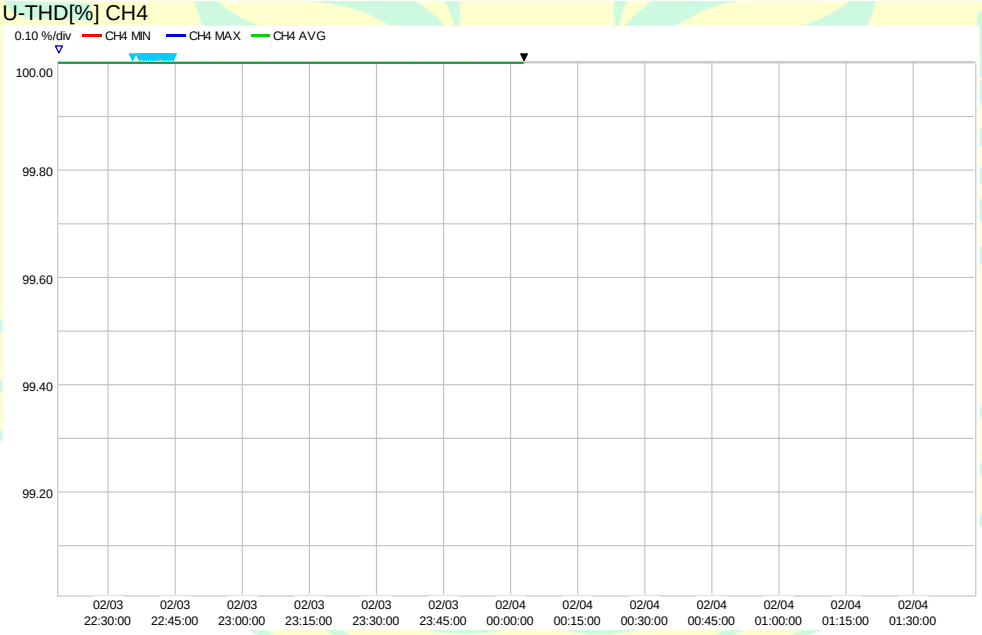
U-
THD

2020/02/03 22:19:00 - 2020/02/04 00:03:00

U-THD[%] CH1



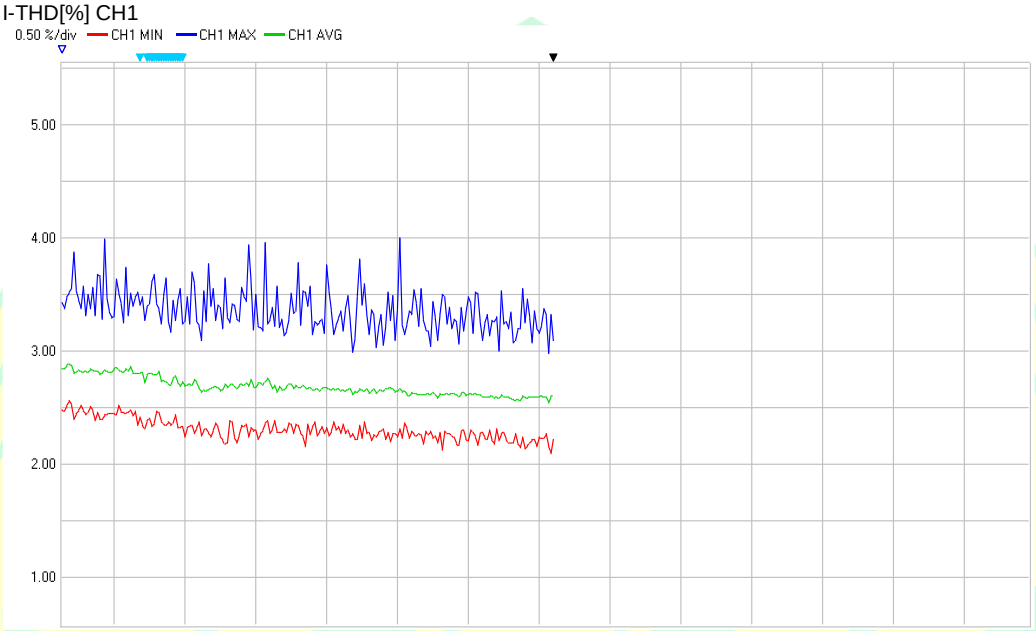
U-THD[%] CH4



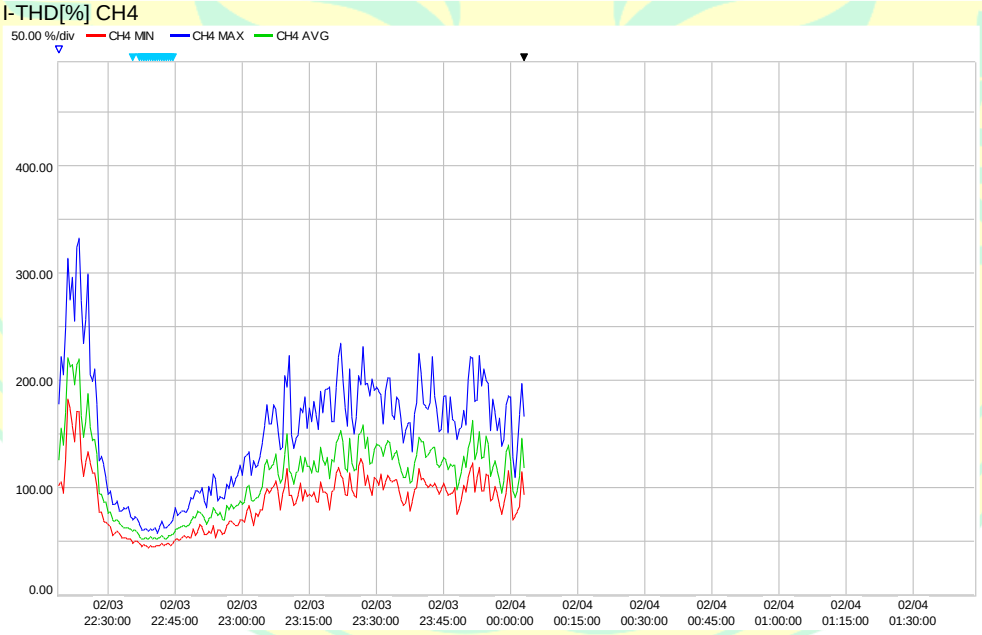
I-
THD

2020/02/03 22:19:00 - 2020/02/04 00:03:00

I-THD[%] CH1



I-THD[%] CH4



No. 1: 2020/02/03 22:18:30.062, Start, WDU

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:18:30.052	Dip	CH1	IN	
2020/02/03 22:18:30.062	Ithd	CH4	IN	
2020/02/03 22:18:30.062	Start			

No. 2: 2020/02/03 22:35:05.036, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:35:05.036	Ithd	CH4	OUT	00:16:34.974

No. 3: 2020/02/03 22:35:05.236, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:35:05.236	Ithd	CH4	IN	

No. 4: 2020/02/03 22:36:30.316, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:36:30.316	Ithd	CH4	OUT	00:01:25.080

No. 5: 2020/02/03 22:36:30.517, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:36:30.517	Ithd	CH4	IN	

No. 6: 2020/02/03 22:36:48.521, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:36:48.521	Ithd	CH4	OUT	00:00:18.004

No. 7: 2020/02/03 22:36:48.721, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:36:48.721	Ithd	CH4	IN	

No. 8: 2020/02/03 22:36:54.724, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:36:54.724	Ithd	CH4	OUT	00:00:06.003

No. 9: 2020/02/03 22:36:54.924, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:36:54.924	Ithd	CH4	IN	

No. 10: 2020/02/03 22:37:03.731, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:03.731	Ithd	CH4	OUT	00:00:08.807

No. 11: 2020/02/03 22:37:03.931, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:03.931	Ithd	CH4	IN	

No. 12: 2020/02/03 22:37:05.332, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:05.332	Ithd	CH4	OUT	00:00:01.401

No. 13: 2020/02/03 22:37:05.532, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:05.532	Ithd	CH4	IN	

No. 14: 2020/02/03 22:37:07.133, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:07.133	Ithd	CH4	OUT	00:00:01.601

No. 15: 2020/02/03 22:37:07.333, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:07.333	Ithd	CH4	IN	

No. 16: 2020/02/03 22:37:09.334, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:09.334	Ithd	CH4	OUT	00:00:02.001

No. 17: 2020/02/03 22:37:09.534, Ithd, CH4, IN

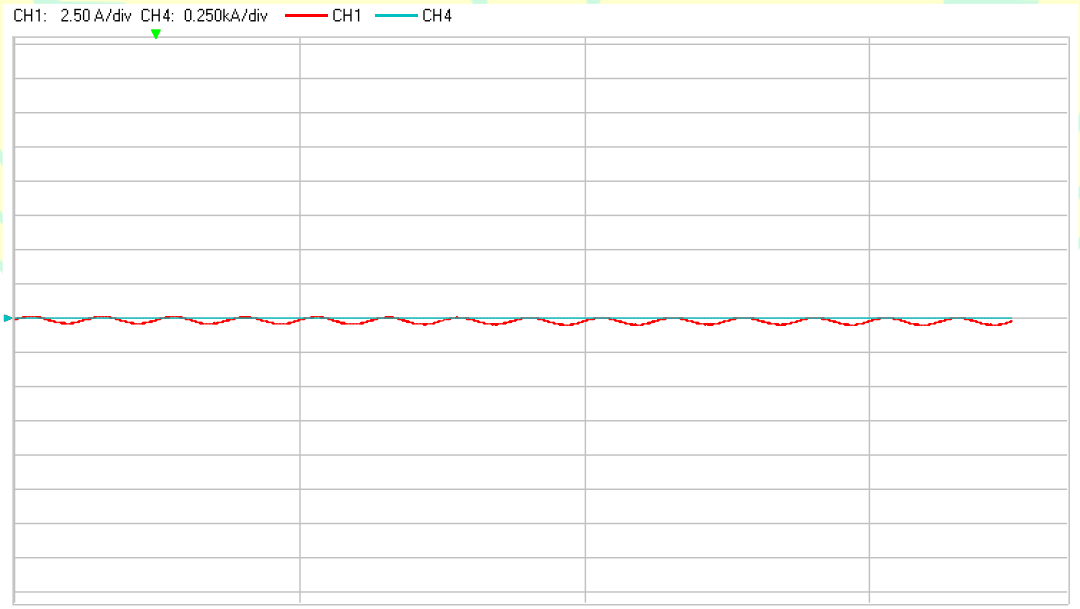
Date Time	Event Item	ch	IN/OUT	Data
2020/02/03 22:37:09.534	Ithd	CH4	IN	

No. 18: 2020/02/03 22:37:10.135, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data

All Events
Waveforms

Event Voltage/Current Waveform [No.346 02/04 00:03:07.972 Stop]



MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

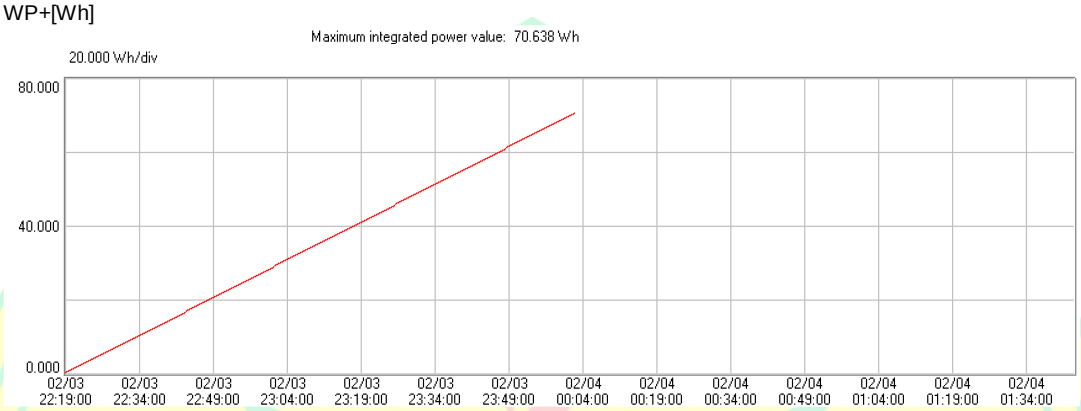
EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	
U THD	7.20 %	OFF	
I THD	40.00 %	50.00 %	
Hharm U Component	OFF	OFF	
Hharm I Component	OFF	OFF	
U RevPhaseUnbalance	OFF		
I RevPhaseUnbalance	OFF		

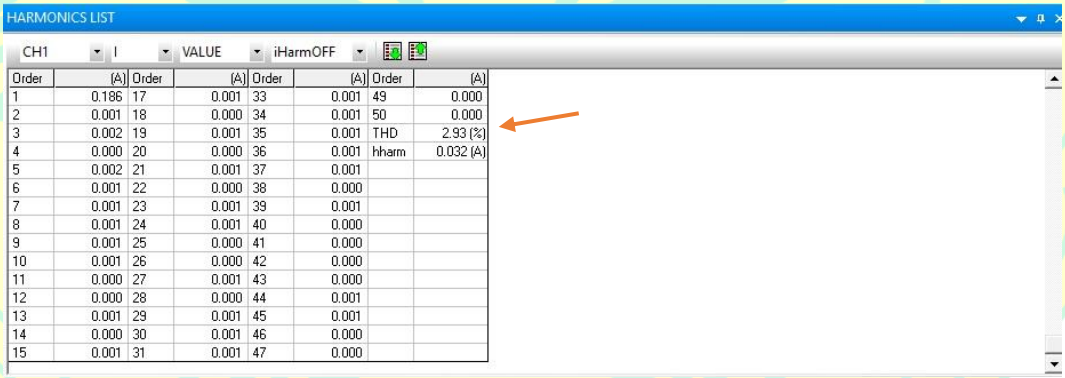
U 0PhaseUnbalance	OFF
I 0PhaseUnbalance	OFF

2020/02/03 22:19:00 - 2020/02/04 00:03:00

WP+[Wh]



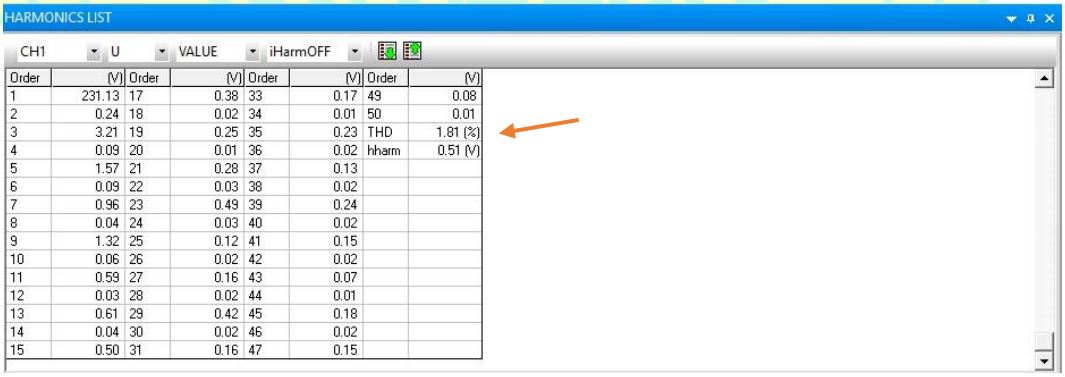
Lampiran 5 Hasil Penelitian Beban Lampu 55 Watt



HARMONICS LIST

CH1 | I | VALUE | iHarmOFF

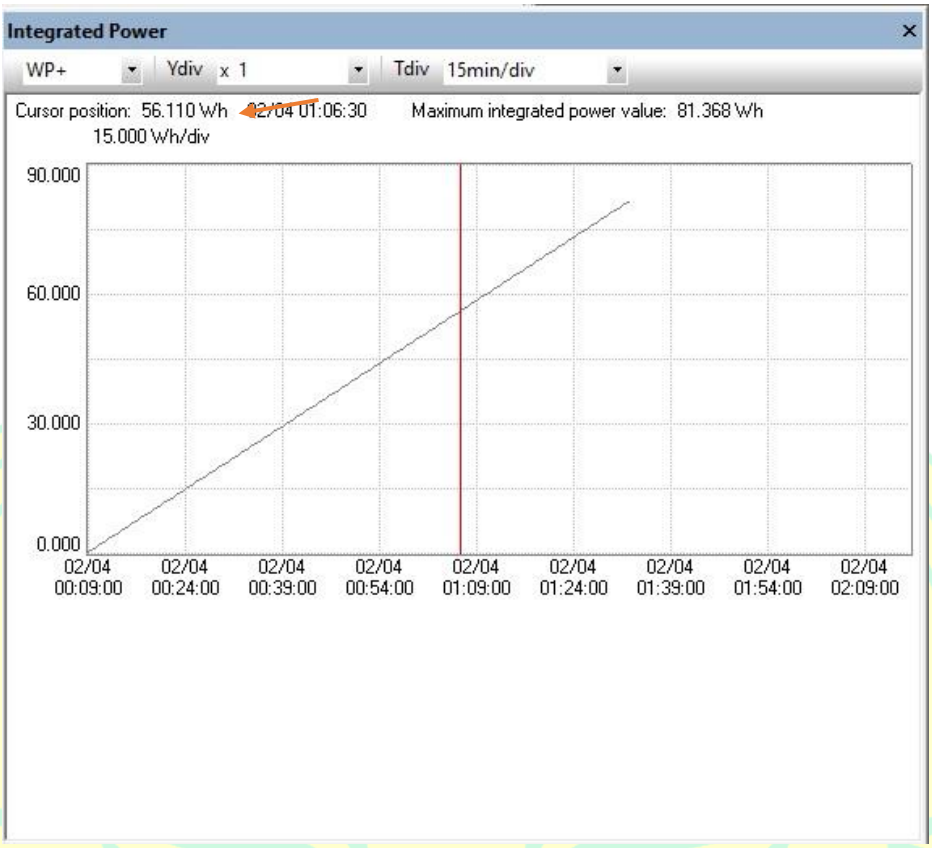
Order	(A)	Order	(A)	Order	(A)	Order	(A)
1	0.186	17	0.001	33	0.001	49	0.000
2	0.001	18	0.000	34	0.001	50	0.000
3	0.002	19	0.001	35	0.001	THD	2.93 (%)
4	0.000	20	0.000	36	0.001	hharm	0.032 (A)
5	0.002	21	0.001	37	0.001		
6	0.001	22	0.000	38	0.000		
7	0.001	23	0.001	39	0.001		
8	0.001	24	0.001	40	0.000		
9	0.001	25	0.000	41	0.000		
10	0.001	26	0.000	42	0.000		
11	0.000	27	0.001	43	0.000		
12	0.000	28	0.000	44	0.001		
13	0.001	29	0.001	45	0.001		
14	0.000	30	0.001	46	0.000		
15	0.001	31	0.001	47	0.000		



HARMONICS LIST

CH1 | U | VALUE | iHarmOFF

Order	(V)	Order	(V)	Order	(V)	Order	(V)
1	231.13	17	0.38	33	0.17	49	0.08
2	0.24	18	0.02	34	0.01	50	0.01
3	3.21	19	0.25	35	0.23	THD	1.81 (%)
4	0.09	20	0.01	36	0.02	hharm	0.51 (V)
5	1.57	21	0.28	37	0.13		
6	0.09	22	0.03	38	0.02		
7	0.96	23	0.49	39	0.24		
8	0.04	24	0.03	40	0.02		
9	1.32	25	0.12	41	0.15		
10	0.06	26	0.02	42	0.02		
11	0.59	27	0.16	43	0.07		
12	0.03	28	0.02	44	0.01		
13	0.61	29	0.42	45	0.18		
14	0.04	30	0.02	46	0.02		
15	0.50	31	0.16	47	0.15		



Time Plot Graph

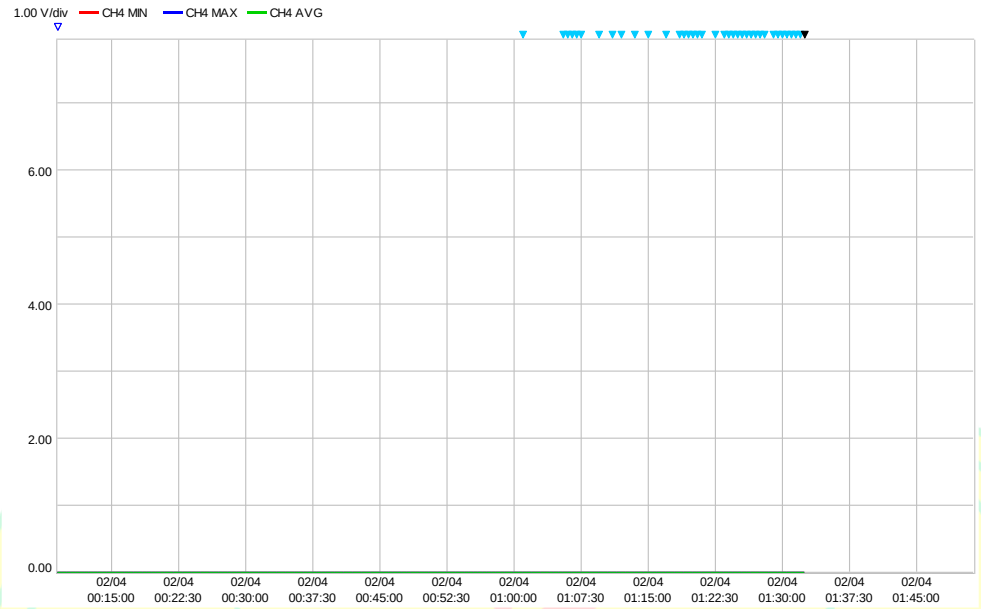
Page 1

06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\55 watt\B0020400

2020/02/04 00:09:00 - 2020/02/04 01:32:30

U[V] CH1

U[V] CH4

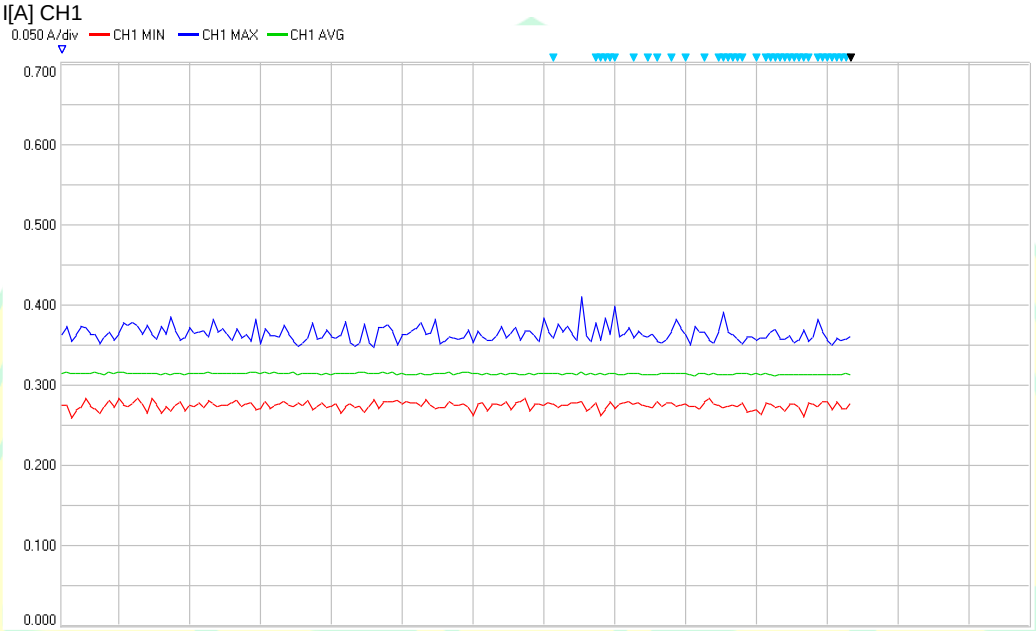


Time Plot
Graph

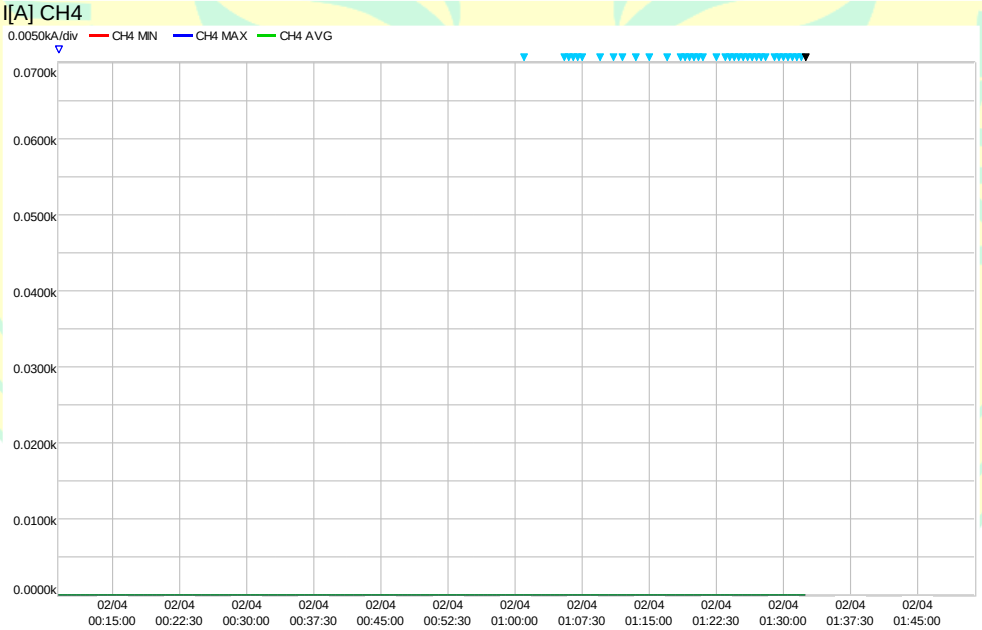
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\55 watt\B0020400

2020/02/04 00:09:00 - 2020/02/04 01:32:30

I[A] CH1



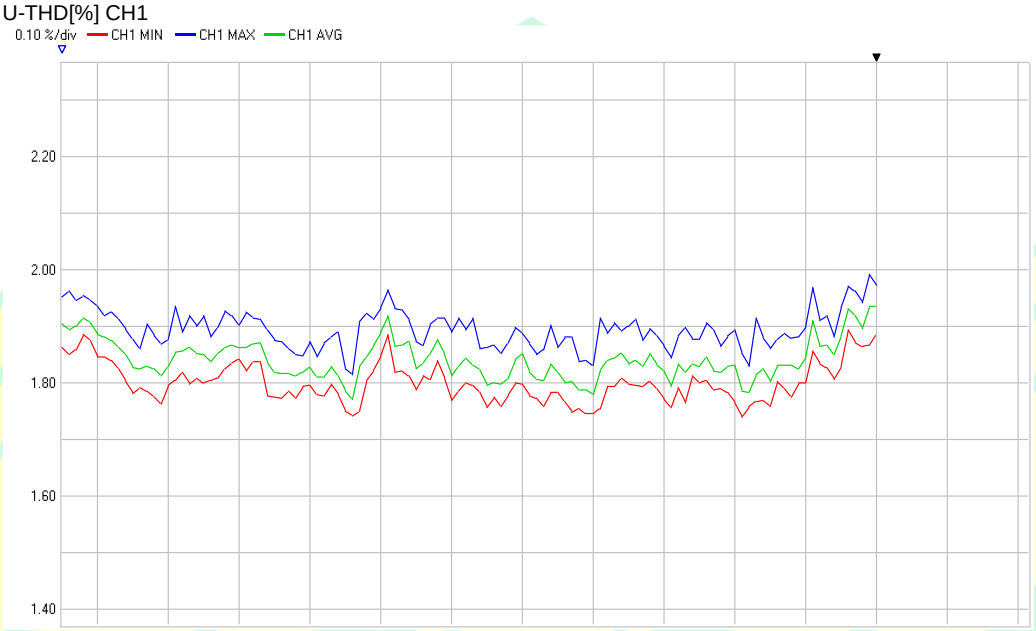
I[A] CH4



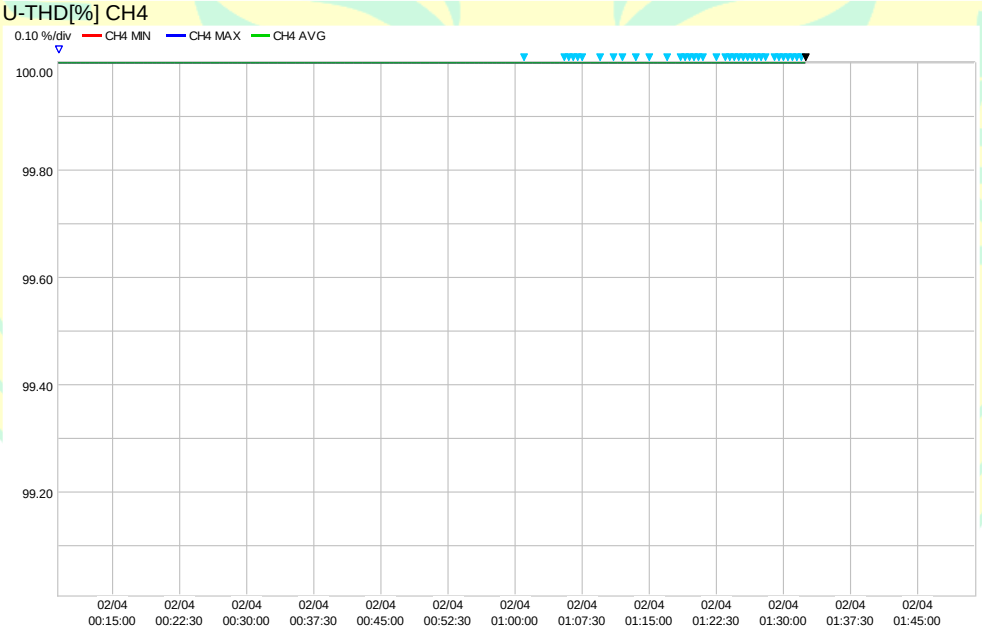
U-
THD

2020/02/04 00:09:00 - 2020/02/04 01:32:30

U-THD[%] CH1



U-THD[%] CH4

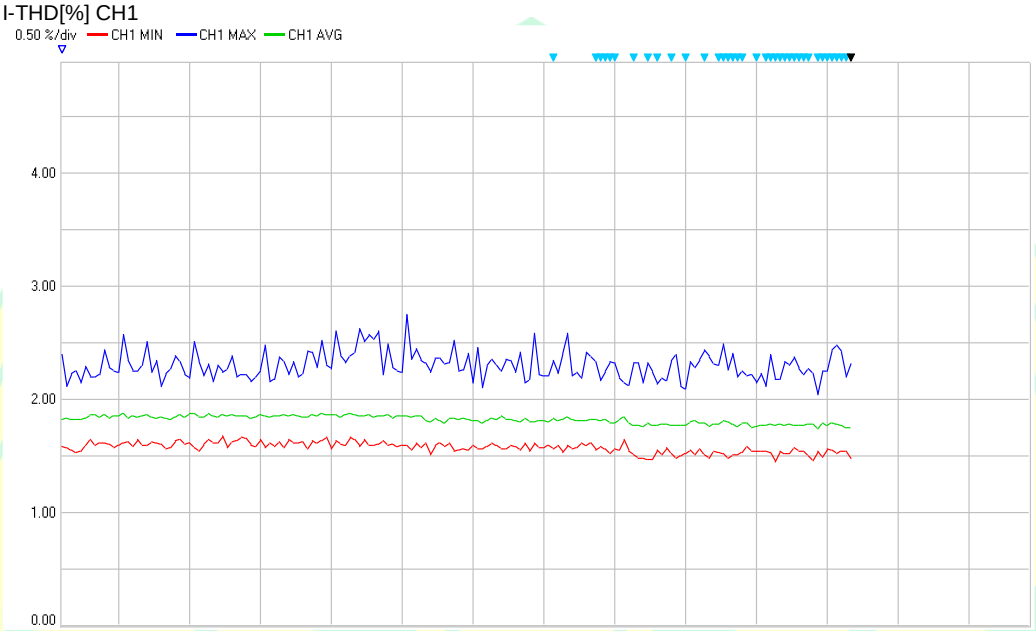


I-
THD

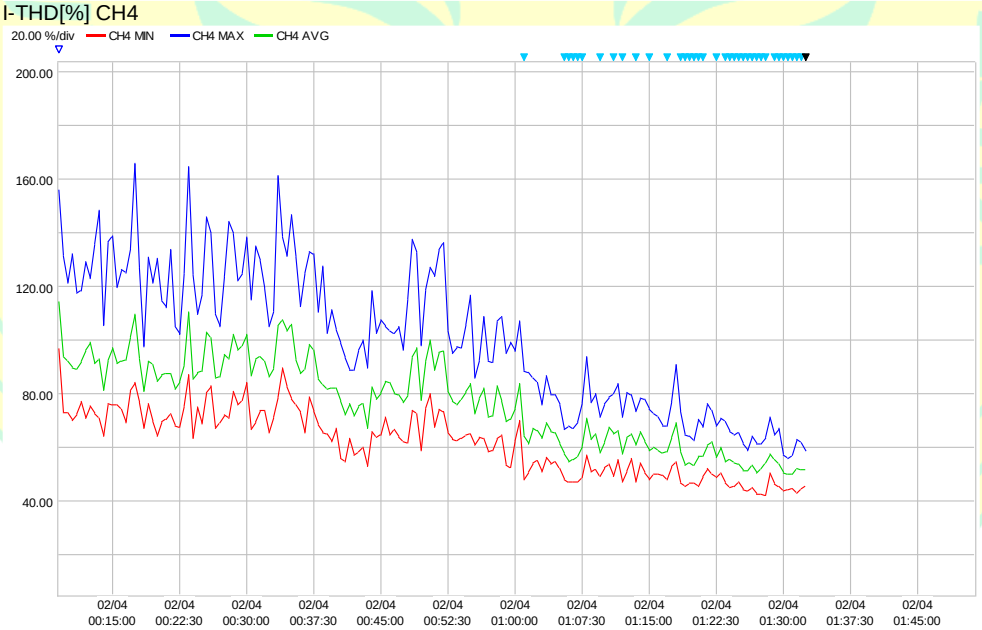
Page 4
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\55 watt\B0020400

2020/02/04 00:09:00 - 2020/02/04 01:32:30

I-THD[%] CH1



I-THD[%] CH4



No. 1: 2020/02/04 00:08:30.009, Start, WDU

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 00:08:29.999	Dip	CH1	IN	
2020/02/04 00:08:30.009	Ithd	CH4	IN	
2020/02/04 00:08:30.009	Start			

No. 2: 2020/02/04 01:00:58.786, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:00:58.786	Ithd	CH4	OUT	00:52:28.777

No. 3: 2020/02/04 01:00:58.987, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:00:58.987	Ithd	CH4	IN	

No. 4: 2020/02/04 01:05:18.877, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:18.877	Ithd	CH4	OUT	00:04:19.890

No. 5: 2020/02/04 01:05:19.078, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:19.078	Ithd	CH4	IN	

No. 6: 2020/02/04 01:05:30.697, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:30.697	Ithd	CH4	OUT	00:00:11.619

No. 7: 2020/02/04 01:05:30.897, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:30.897	Ithd	CH4	IN	

No. 8: 2020/02/04 01:05:32.500, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:32.500	Ithd	CH4	OUT	00:00:01.603

No. 9: 2020/02/04 01:05:32.700, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:32.700	Ithd	CH4	IN	

No. 10: 2020/02/04 01:05:40.112, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:40.112	Ithd	CH4	OUT	00:00:07.412

No. 11: 2020/02/04 01:05:40.312, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:40.312	Ithd	CH4	IN	

No. 12: 2020/02/04 01:05:42.917, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:42.917	Ithd	CH4	OUT	00:00:02.605

No. 13: 2020/02/04 01:05:43.117, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:43.117	Ithd	CH4	IN	

No. 14: 2020/02/04 01:05:44.319, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:44.319	Ithd	CH4	OUT	00:00:01.202

No. 15: 2020/02/04 01:05:44.520, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:44.520	Ithd	CH4	IN	

No. 16: 2020/02/04 01:05:44.921, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:44.921	Ithd	CH4	OUT	00:00:00.401

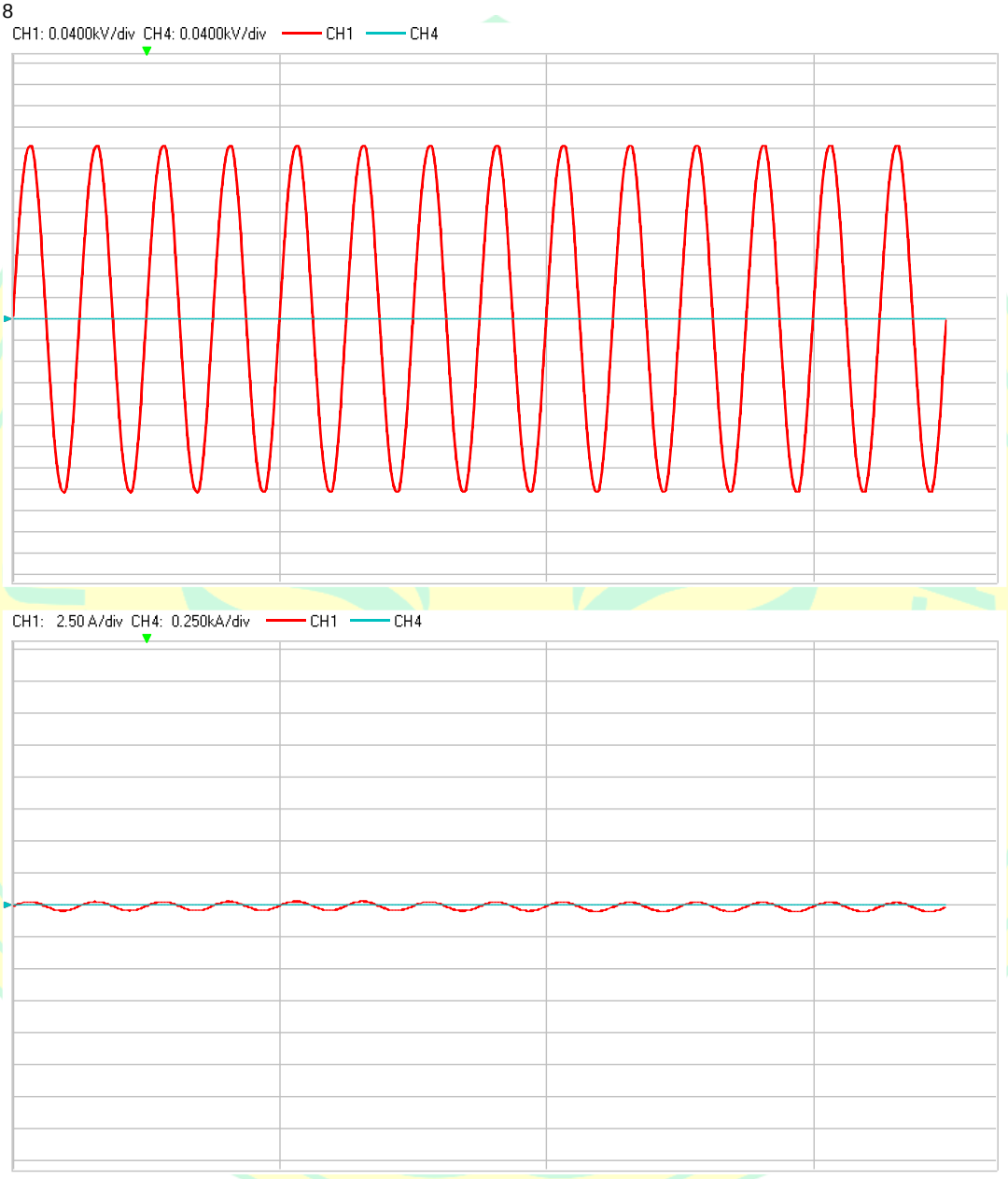
No. 17: 2020/02/04 01:05:45.121, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:05:45.121	Ithd	CH4	IN	

No. 18: 2020/02/04 01:05:47.125, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data

Event Voltage/Current Waveform [No.848 02/04 01:32:41.825 Stop]
8



MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	
U THD	7.20 %	OFF	
I THD	40.00 %	50.00 %	
Hharm U Component	OFF	OFF	
Hharm I Component	OFF	OFF	
U RevPhaseUnbalance	OFF		
I RevPhaseUnbalance	OFF		

U 0PhaseUnbalance	OFF
I 0PhaseUnbalance	OFF

Integrated Power Analysis

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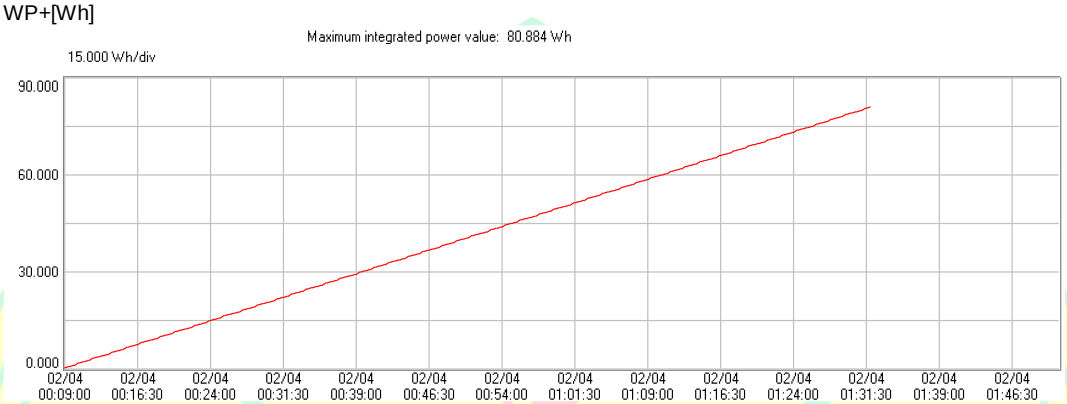
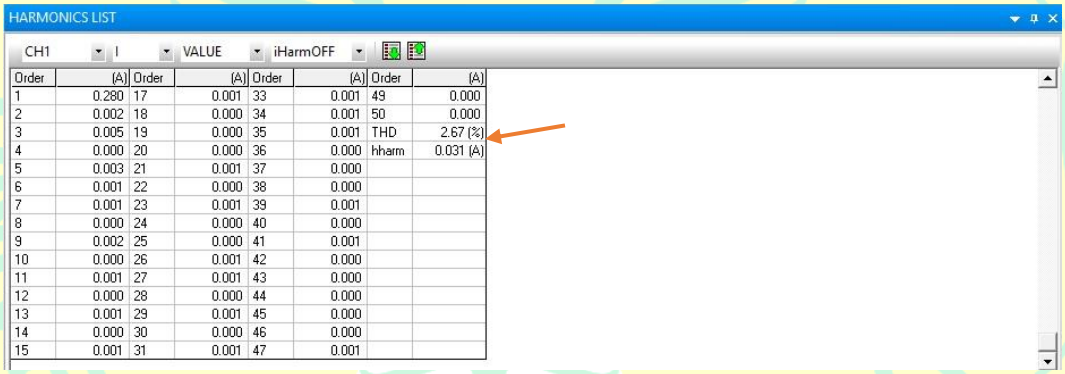
2020/02/04 00:09:00 - 2020/02/04 01:32:30

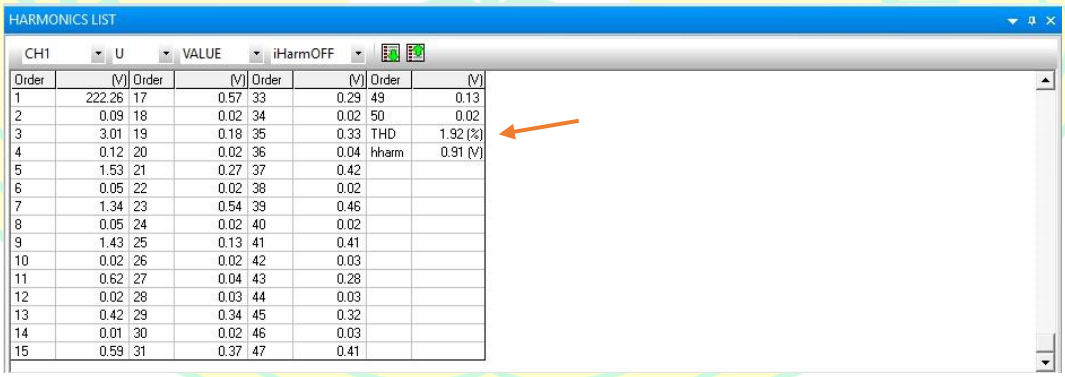
WP+[Wh]



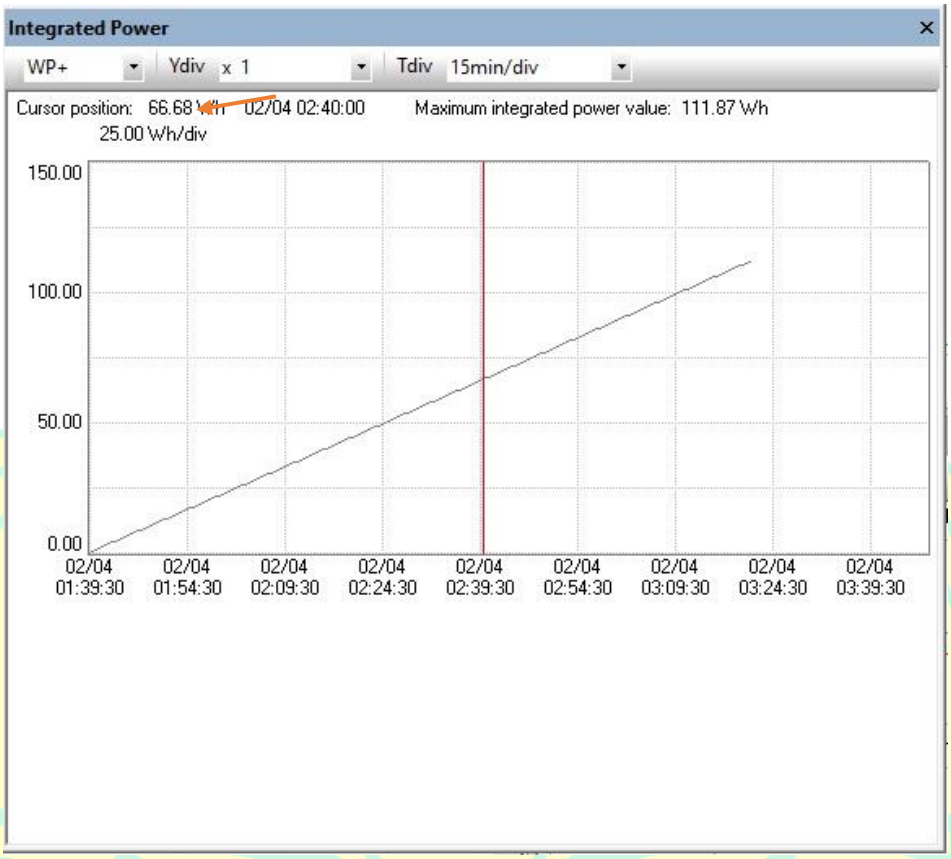
Lampiran 6 Hasil Penelitian Beban Linier 65 Watt



Order	(A)	Order	(A)	Order	(A)	Order	(A)
1	0.280	17	0.001	33	0.001	49	0.000
2	0.002	18	0.000	34	0.001	50	0.000
3	0.005	19	0.000	35	0.001	THD	2.67 (%)
4	0.000	20	0.000	36	0.000	hharm	0.031 (A)
5	0.003	21	0.001	37	0.000		
6	0.001	22	0.000	38	0.000		
7	0.001	23	0.001	39	0.001		
8	0.000	24	0.000	40	0.000		
9	0.002	25	0.000	41	0.001		
10	0.000	26	0.001	42	0.000		
11	0.001	27	0.001	43	0.000		
12	0.000	28	0.000	44	0.000		
13	0.001	29	0.001	45	0.000		
14	0.000	30	0.000	46	0.000		
15	0.001	31	0.001	47	0.001		



Order	(V)	Order	(V)	Order	(V)	Order	(V)
1	222.26	17	0.57	33	0.29	49	0.13
2	0.09	18	0.02	34	0.02	50	0.02
3	3.01	19	0.18	35	0.33	THD	1.92 (%)
4	0.12	20	0.02	36	0.04	hharm	0.91 (V)
5	1.53	21	0.27	37	0.42		
6	0.05	22	0.02	38	0.02		
7	1.34	23	0.54	39	0.46		
8	0.05	24	0.02	40	0.02		
9	1.43	25	0.13	41	0.41		
10	0.02	26	0.02	42	0.03		
11	0.62	27	0.04	43	0.28		
12	0.02	28	0.03	44	0.03		
13	0.42	29	0.34	45	0.32		
14	0.01	30	0.02	46	0.03		
15	0.59	31	0.37	47	0.41		



Time Plot Graph

Page 1

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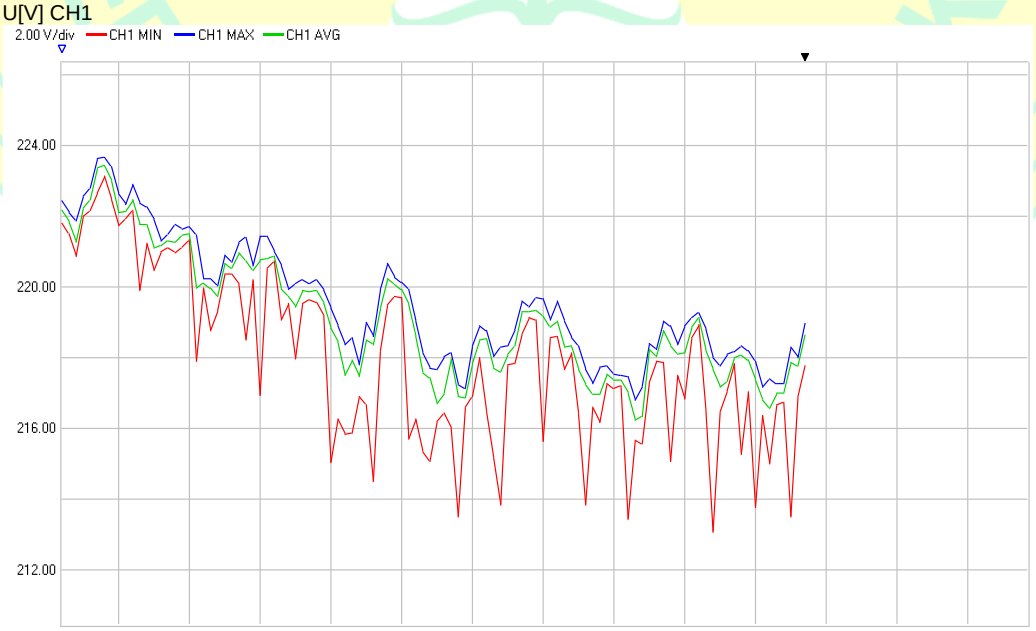
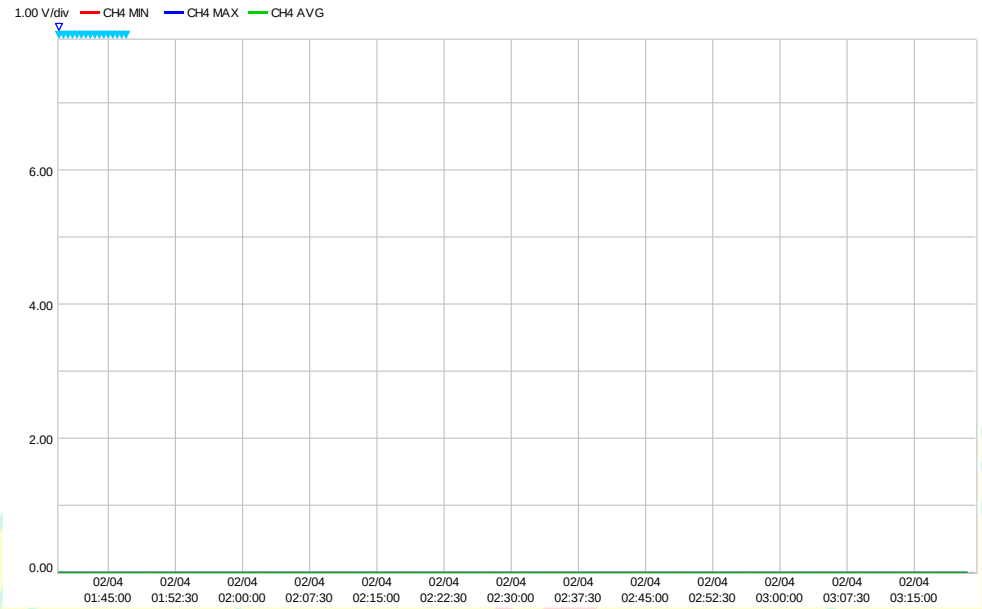
2020/02/04 01:39:30 - 2020/02/04 03:21:00

U[V] CH1



U[V] CH4

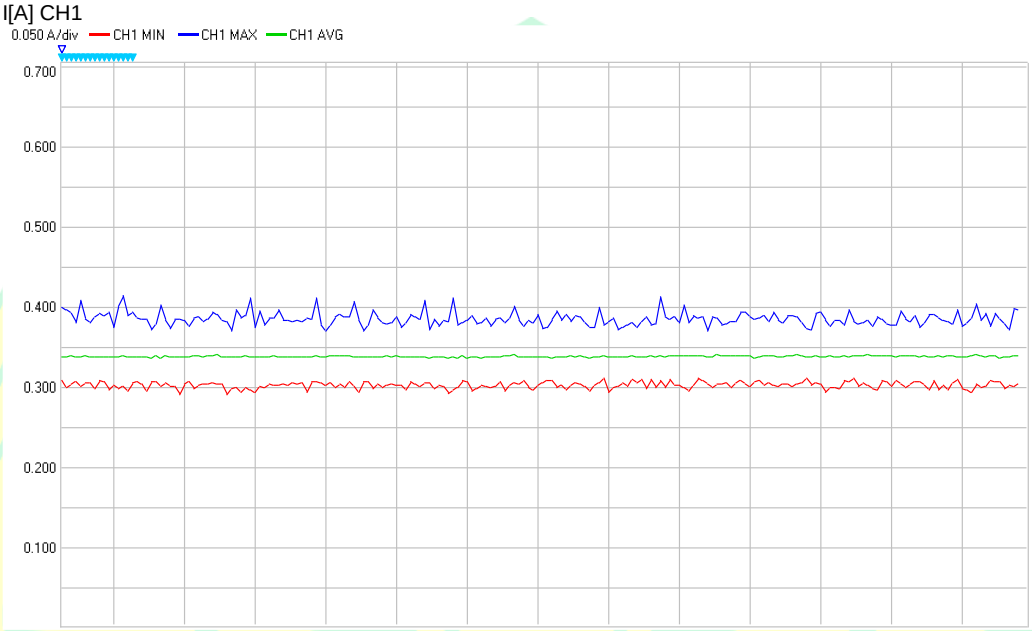


Time Plot
Graph

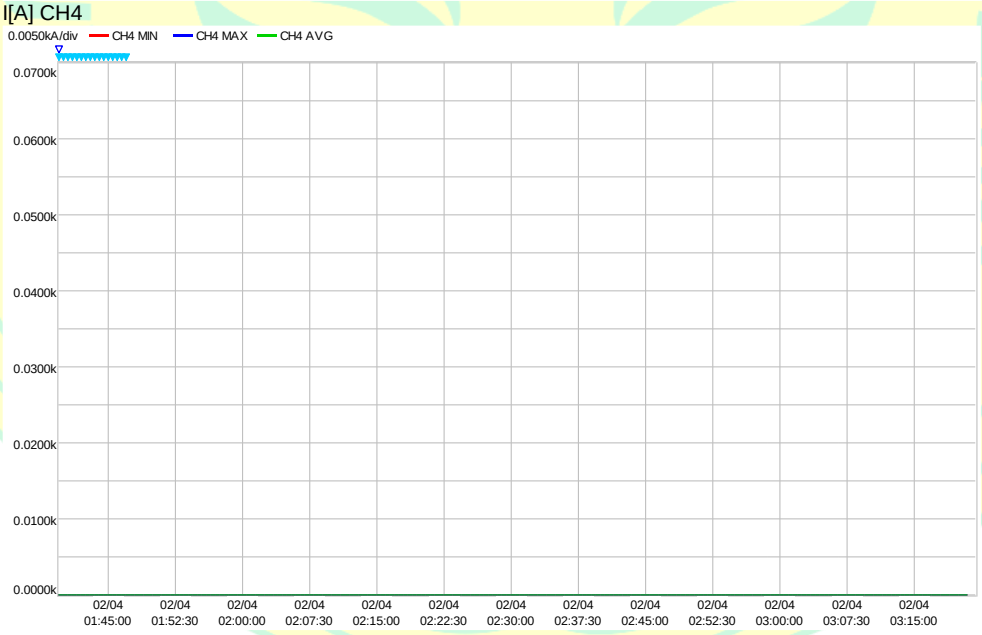
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\65 watt\B0020400

2020/02/04 01:39:30 - 2020/02/04 03:21:00

I[A] CH1



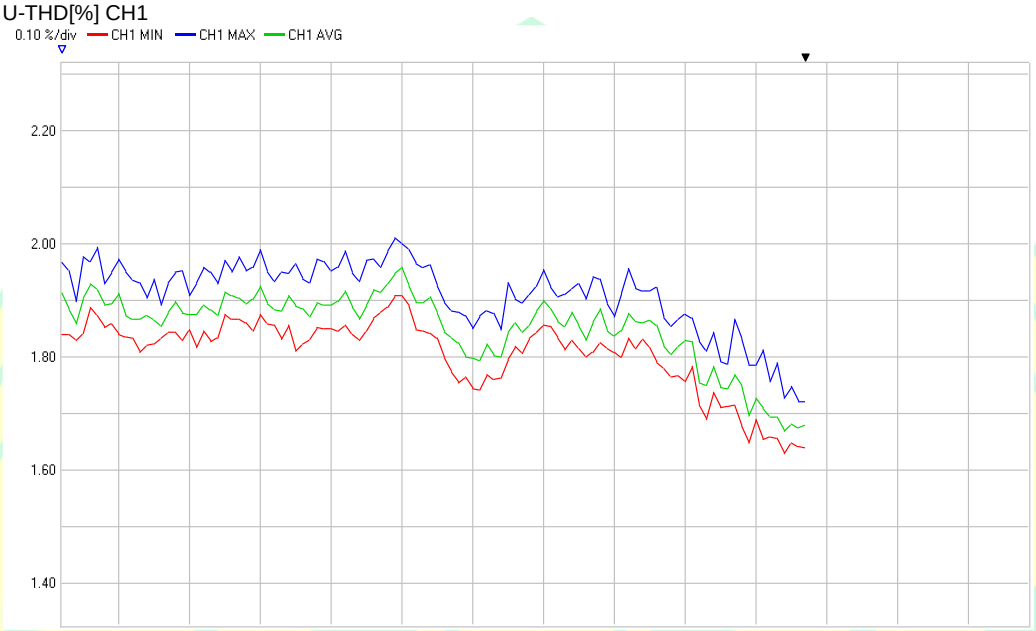
I[A] CH4



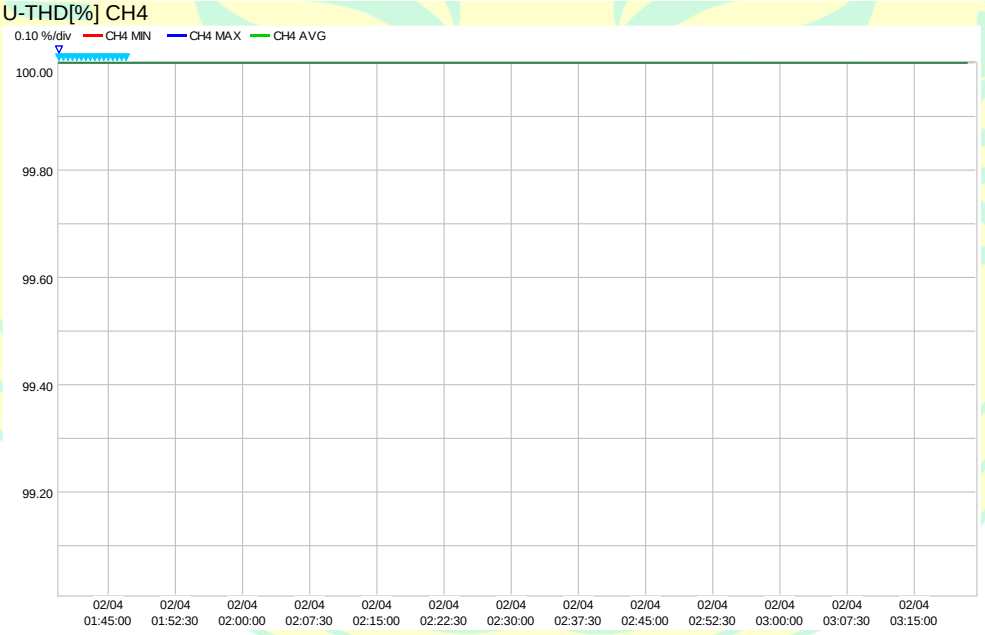
U-
THD

2020/02/04 01:39:30 - 2020/02/04 03:21:00

U-THD[%] CH1



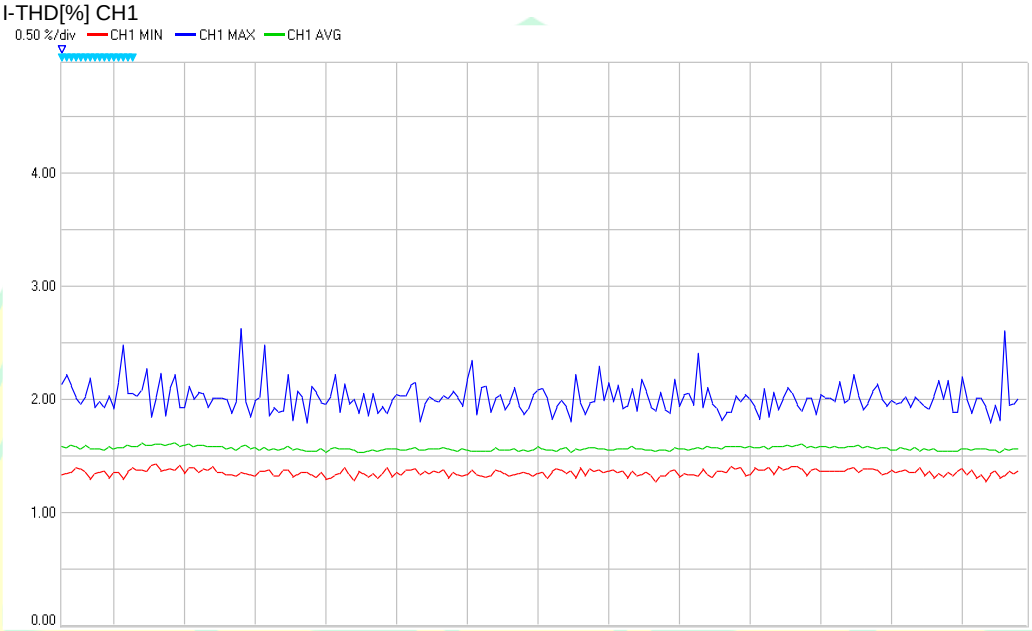
U-THD[%] CH4



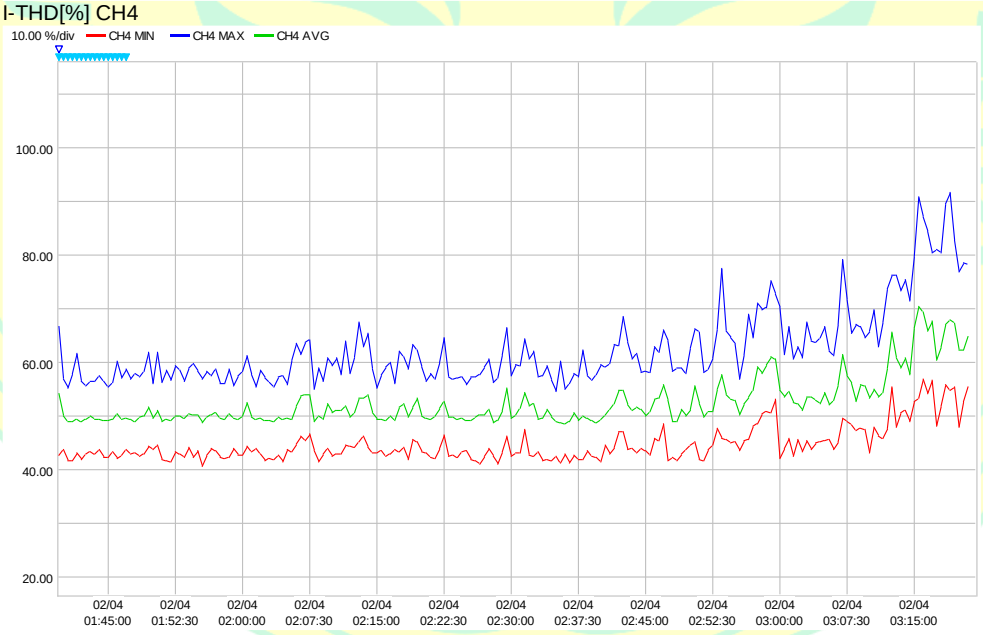
I-
THD

2020/02/04 01:39:30 - 2020/02/04 03:21:00

I-THD[%] CH1



I-THD[%] CH4



No. 1: 2020/02/04 01:39:00.136, Start, WDU

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:00.122	Dip	CH1	IN	
2020/02/04 01:39:00.136	Ithd	CH4	IN	
2020/02/04 01:39:00.136	Start			

No. 2: 2020/02/04 01:39:04.540, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:04.540	Ithd	CH4	OUT	00:00:04.404

No. 3: 2020/02/04 01:39:04.740, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:04.740	Ithd	CH4	IN	

No. 4: 2020/02/04 01:39:10.343, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:10.343	Ithd	CH4	OUT	00:00:05.603

No. 5: 2020/02/04 01:39:10.543, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:10.543	Ithd	CH4	IN	

No. 6: 2020/02/04 01:39:17.949, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:17.949	Ithd	CH4	OUT	00:00:07.406

No. 7: 2020/02/04 01:39:18.149, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:18.149	Ithd	CH4	IN	

No. 8: 2020/02/04 01:39:19.150, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:19.150	Ithd	CH4	OUT	00:00:01.001

No. 9: 2020/02/04 01:39:19.350, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:19.350	Ithd	CH4	IN	

No. 10: 2020/02/04 01:39:20.751, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:20.751	Ithd	CH4	OUT	00:00:01.401

No. 11: 2020/02/04 01:39:20.951, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:20.951	Ithd	CH4	IN	

No. 12: 2020/02/04 01:39:21.552, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:21.552	Ithd	CH4	OUT	00:00:00.601

No. 13: 2020/02/04 01:39:21.752, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:21.752	Ithd	CH4	IN	

No. 14: 2020/02/04 01:39:22.353, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:22.353	Ithd	CH4	OUT	00:00:00.601

No. 15: 2020/02/04 01:39:22.553, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:22.553	Ithd	CH4	IN	

No. 16: 2020/02/04 01:39:22.753, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:22.753	Ithd	CH4	OUT	00:00:00.200

No. 17: 2020/02/04 01:39:23.153, Ithd, CH4, IN

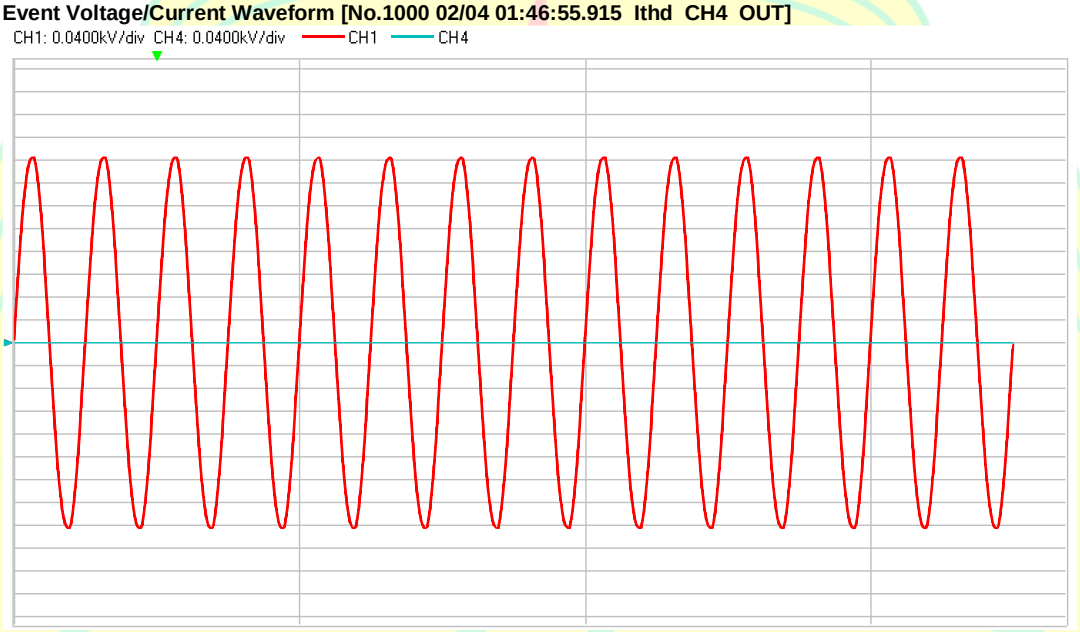
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 01:39:23.153	Ithd	CH4	IN	

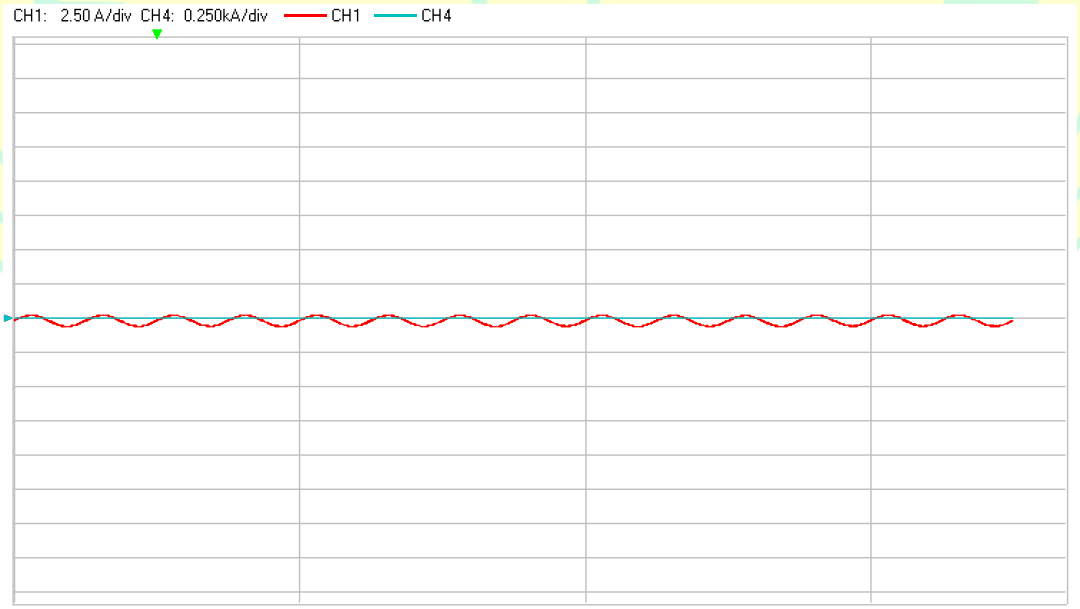
No. 18: 2020/02/04 01:39:23.353, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data

All Events
Waveforms

Event Voltage/Current Waveform [No.1000 02/04 01:46:55.915 Ithd CH4 OUT]





Setting List

MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

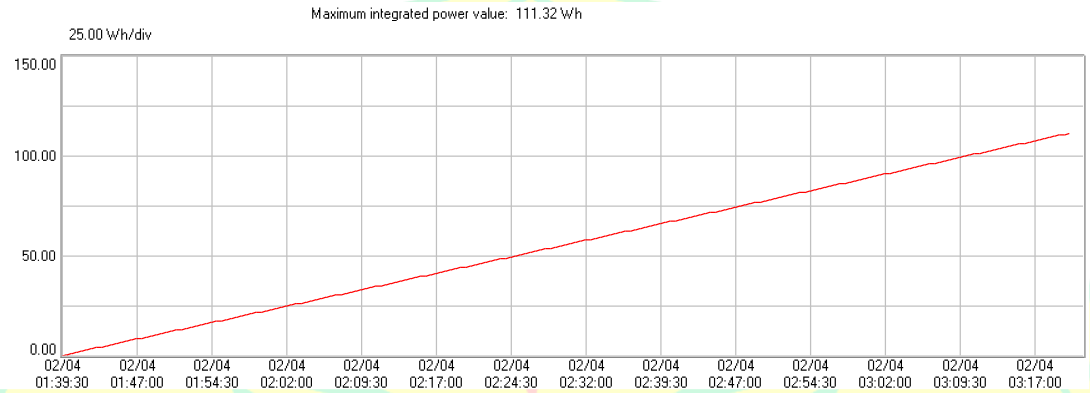
EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	
U THD	7.20 %	OFF	
I THD	40.00 %	50.00 %	
Hharm U Component	OFF	OFF	
Hharm I Component	OFF	OFF	
U RevPhaseUnbalance	OFF		
I RevPhaseUnbalance	OFF		

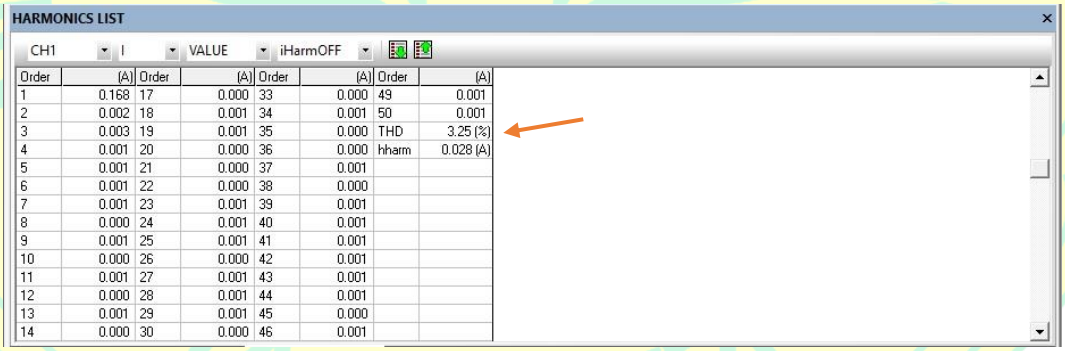
U 0PhaseUnbalance	OFF
I 0PhaseUnbalance	OFF

2020/02/04 01:39:30 - 2020/02/04 03:21:00

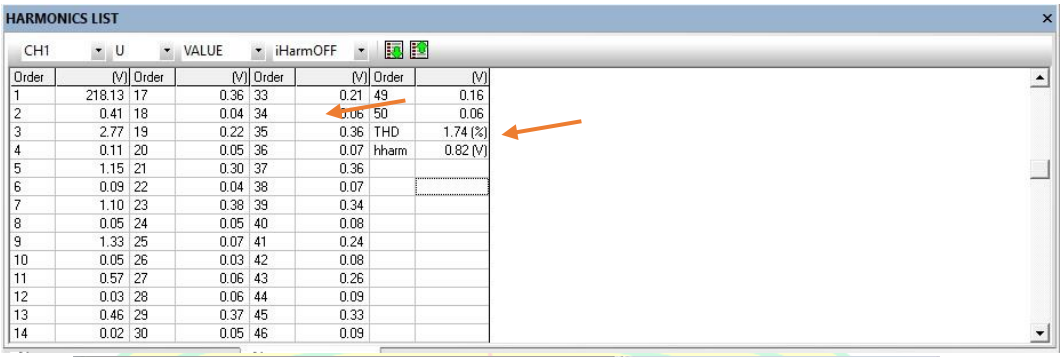
WP+[Wh]



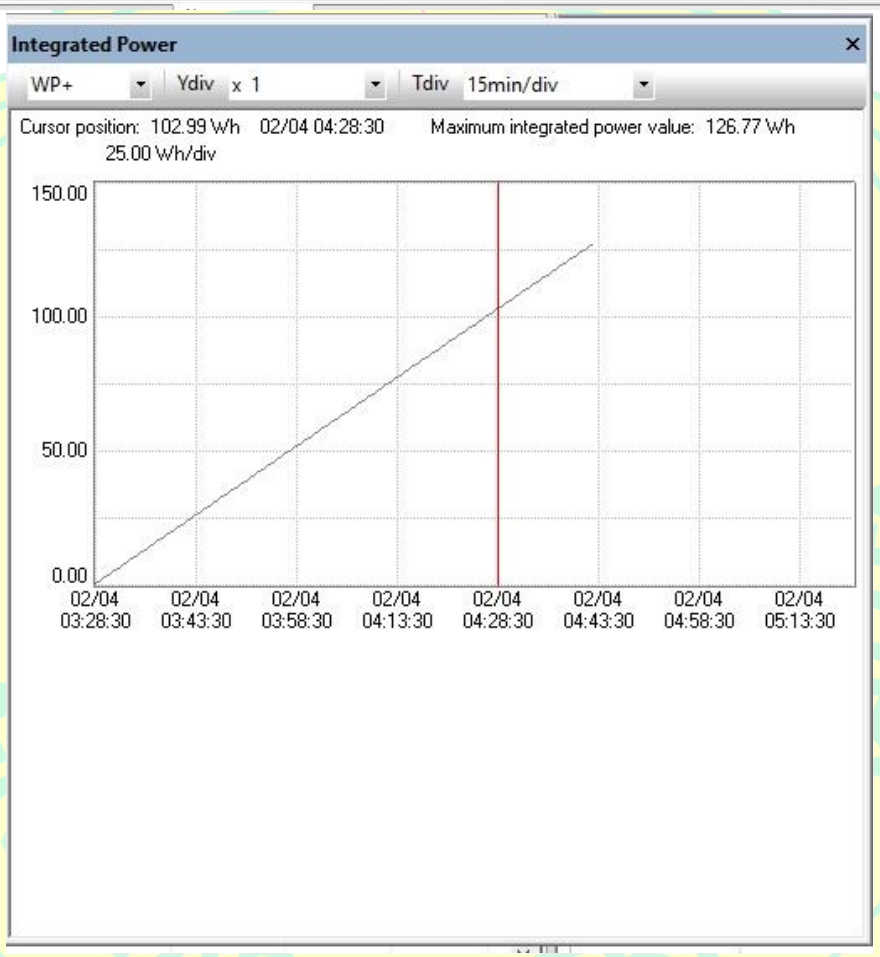
Lampiran 7 Hasil Penelitian Beban Linier 100 Watt



Order	(A)	Order	(A)	Order	(A)	Order	(A)
1	0.168	17	0.000	33	0.000	49	0.001
2	0.002	18	0.001	34	0.001	50	0.001
3	0.003	19	0.001	35	0.000	THD	3.25 (%)
4	0.001	20	0.000	36	0.000	hharm	0.028 (A)
5	0.001	21	0.000	37	0.001		
6	0.001	22	0.000	38	0.000		
7	0.001	23	0.001	39	0.001		
8	0.000	24	0.001	40	0.001		
9	0.001	25	0.001	41	0.001		
10	0.000	26	0.000	42	0.001		
11	0.001	27	0.001	43	0.001		
12	0.000	28	0.001	44	0.001		
13	0.001	29	0.001	45	0.000		
14	0.000	30	0.000	46	0.001		



Order	(V)	Order	(V)	Order	(V)	Order	(V)
1	218.13	17	0.36	33	0.21	49	0.16
2	0.41	18	0.04	34	0.06	50	0.06
3	2.77	19	0.22	35	0.36	THD	1.74 (%)
4	0.11	20	0.05	36	0.07	hharm	0.82 (V)
5	1.15	21	0.30	37	0.36		
6	0.09	22	0.04	38	0.07		
7	1.10	23	0.38	39	0.34		
8	0.05	24	0.05	40	0.08		
9	1.33	25	0.07	41	0.24		
10	0.05	26	0.03	42	0.08		
11	0.57	27	0.06	43	0.26		
12	0.03	28	0.06	44	0.09		
13	0.46	29	0.37	45	0.33		
14	0.02	30	0.05	46	0.09		

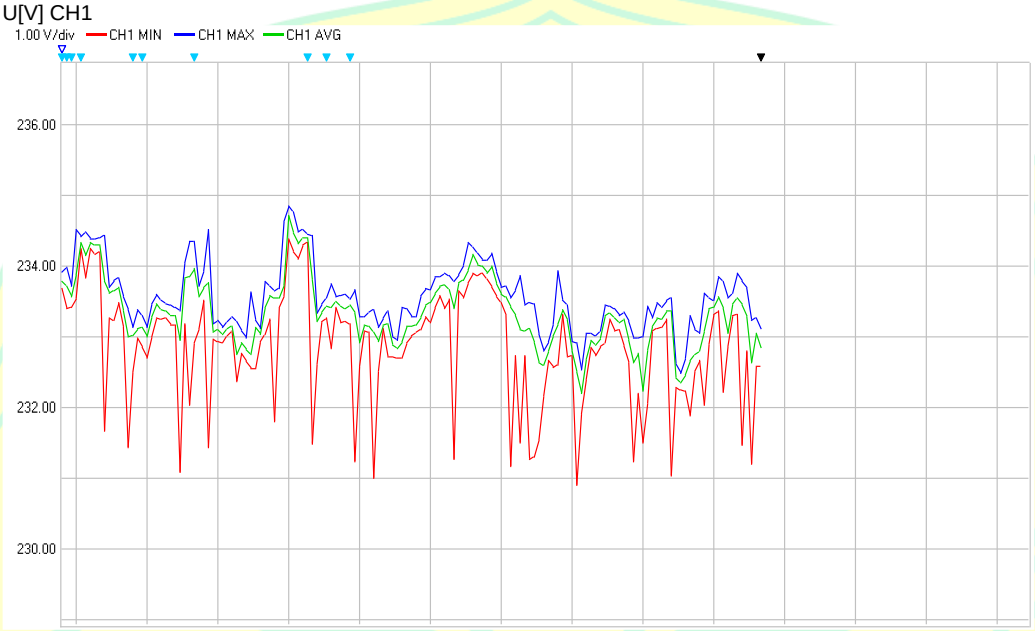


Time Plot
Graph

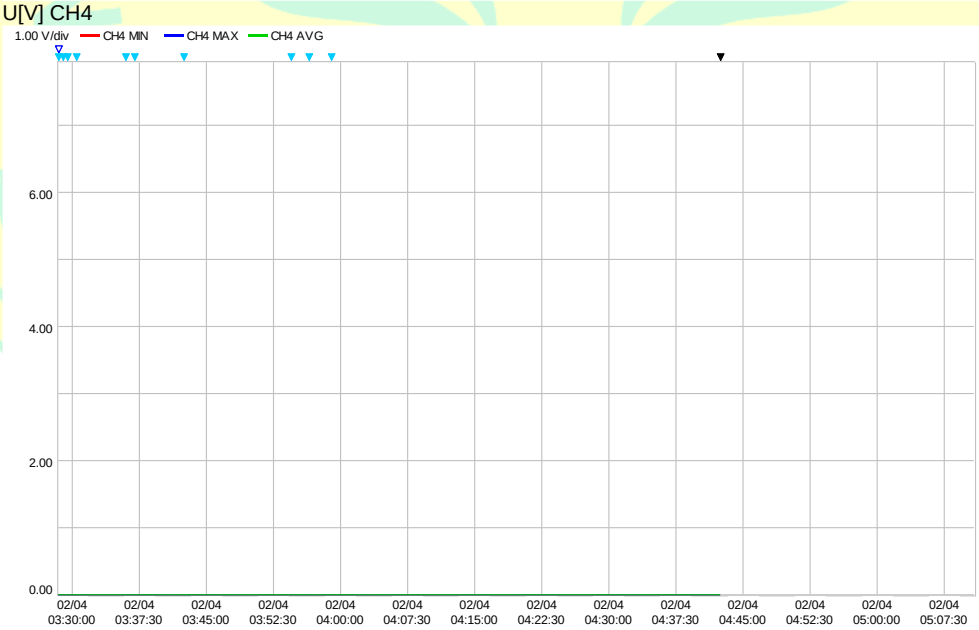
04/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\100 watt\B0020401

2020/02/04 03:28:30 - 2020/02/04 04:42:30

U[V] CH1



U[V] CH4

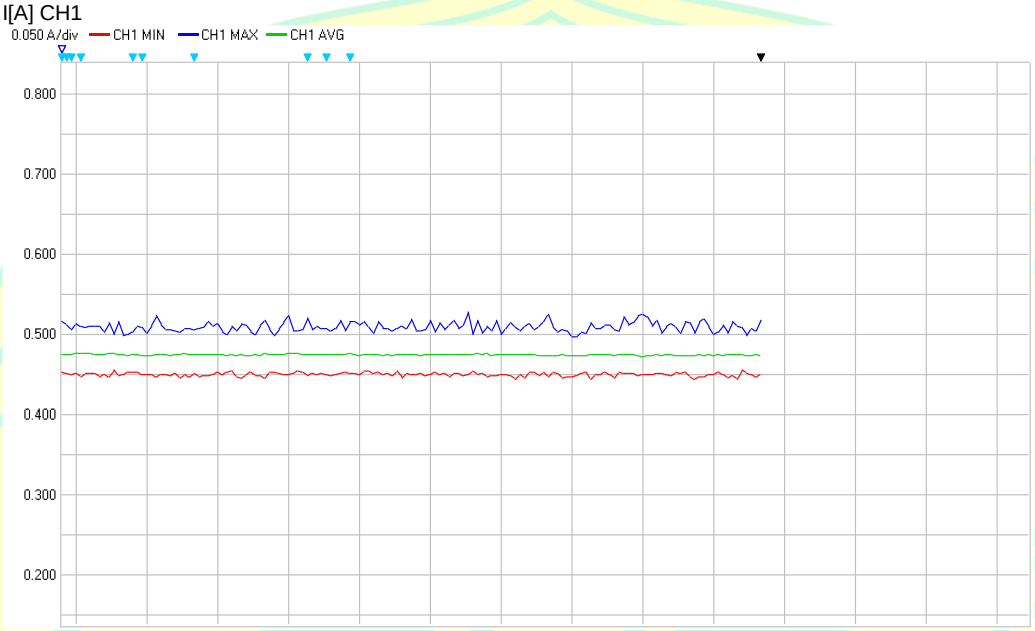


Time Plot
Graph

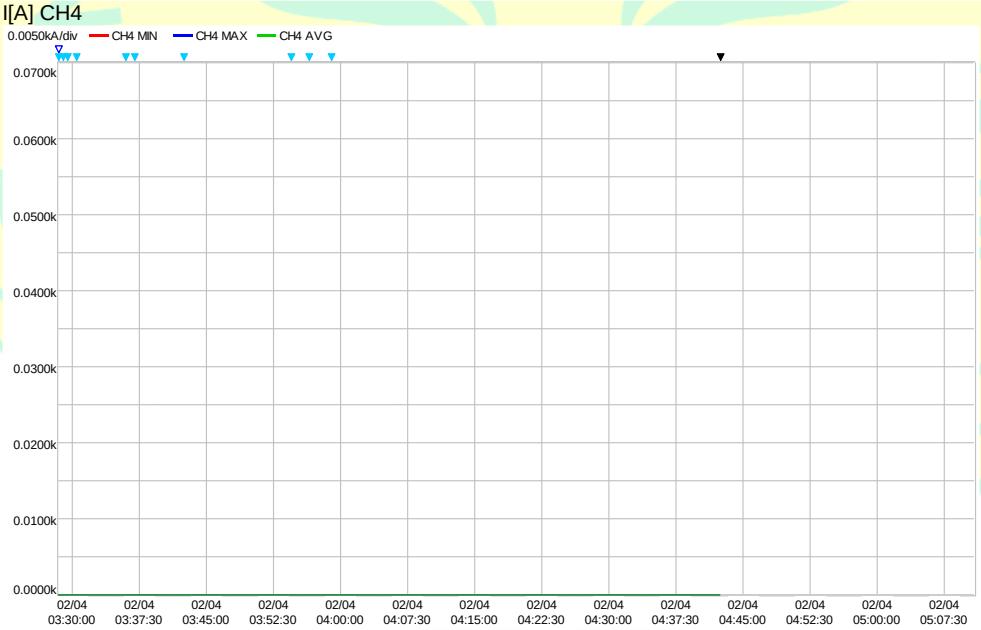
04/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\linier\100 watt\B0020401

2020/02/04 03:28:30 - 2020/02/04 04:42:30

I[A] CH1



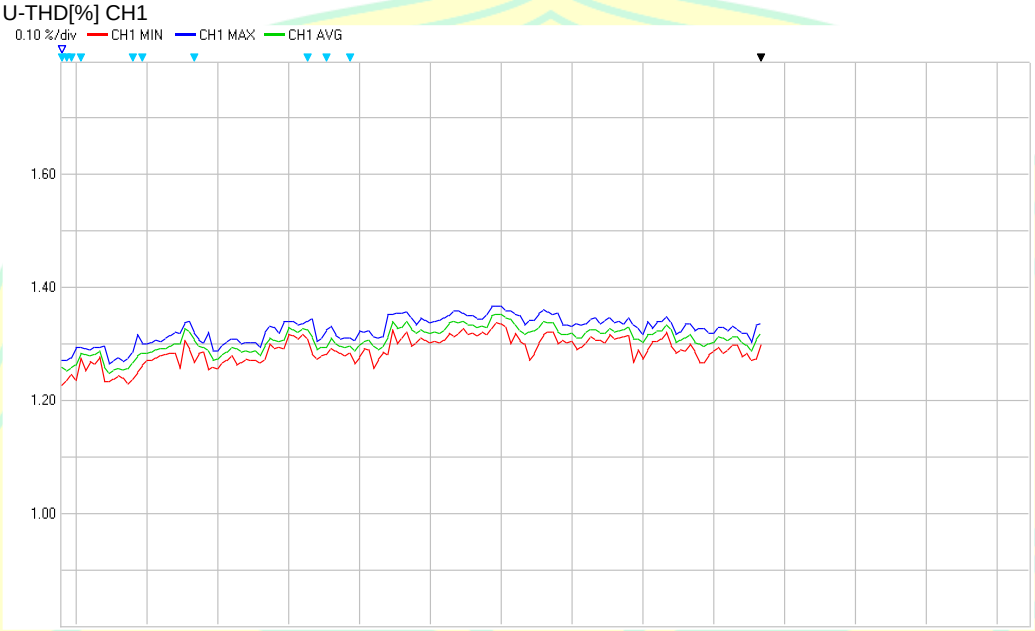
I[A] CH4



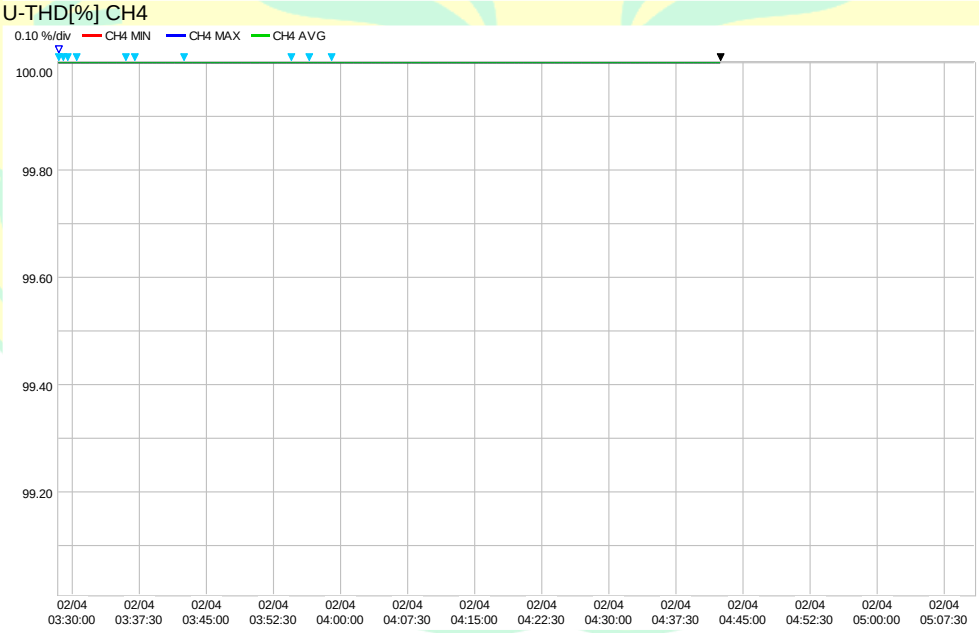
U-
THD

2020/02/04 03:28:30 - 2020/02/04 04:42:30

U-THD[%] CH1



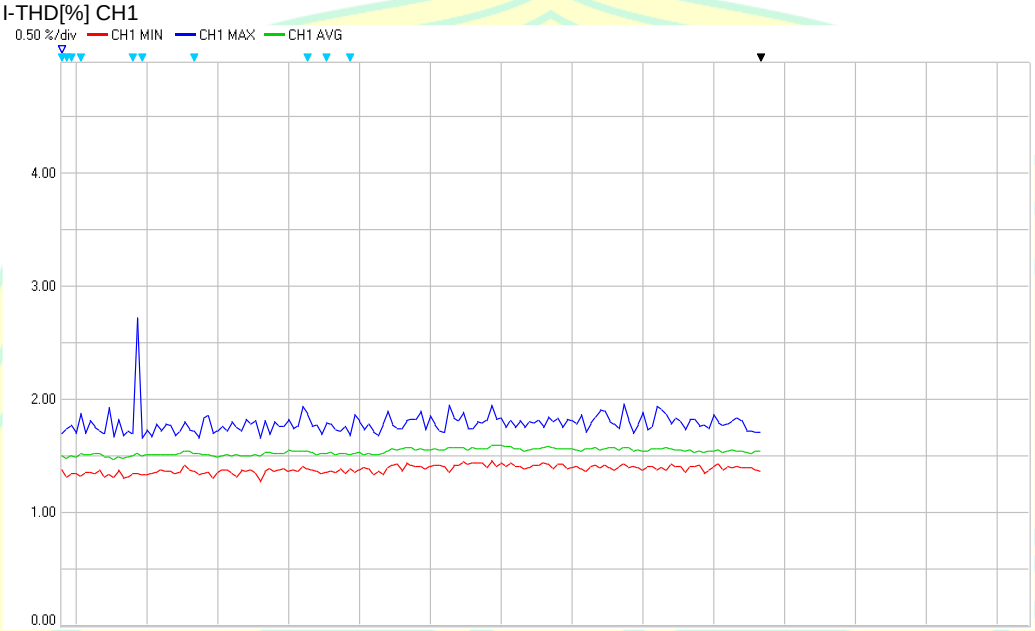
U-THD[%] CH4



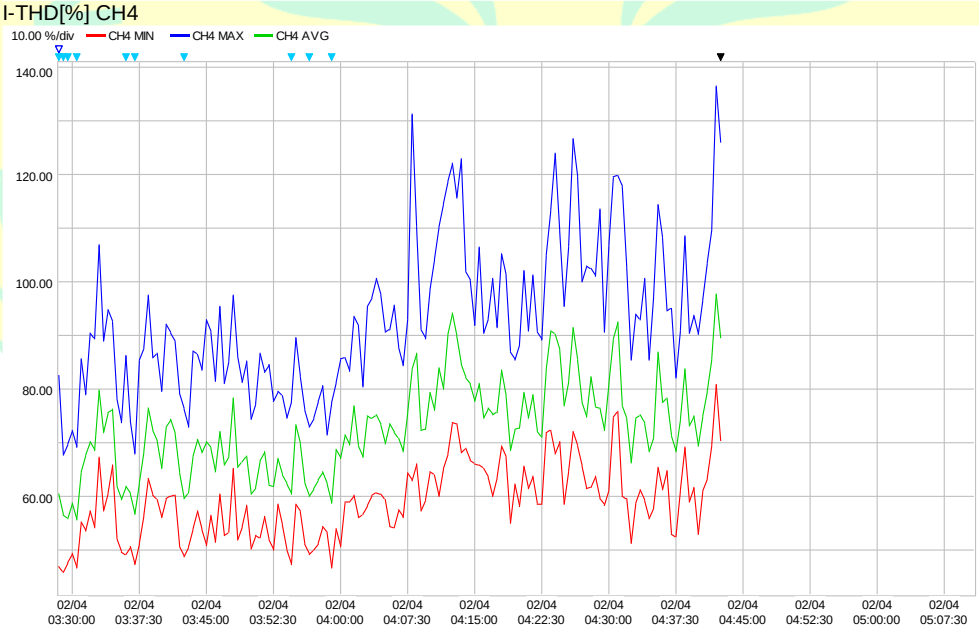
I-
THD

2020/02/04 03:28:30 - 2020/02/04 04:42:30

I-THD[%] CH1



I-THD[%] CH4



No. 1: 2020/02/04 03:28:00.061, Start, WDU

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:00.051	Dip	CH1	IN	
2020/02/04 03:28:00.061	Ithd	CH4	IN	
2020/02/04 03:28:00.061	Start			

No. 2: 2020/02/04 03:28:22.485, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:22.485	Ithd	CH4	OUT	00:00:22.424

No. 3: 2020/02/04 03:28:22.685, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:22.685	Ithd	CH4	IN	

No. 4: 2020/02/04 03:28:23.887, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:23.887	Ithd	CH4	OUT	00:00:01.202

No. 5: 2020/02/04 03:28:24.087, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:24.087	Ithd	CH4	IN	

No. 6: 2020/02/04 03:28:24.888, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:24.888	Ithd	CH4	OUT	00:00:00.801

No. 7: 2020/02/04 03:28:25.088, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:25.088	Ithd	CH4	IN	

No. 8: 2020/02/04 03:28:33.297, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:33.297	Ithd	CH4	OUT	00:00:08.209

No. 9: 2020/02/04 03:28:33.497, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:33.497	Ithd	CH4	IN	

No. 10: 2020/02/04 03:28:34.098, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:34.098	Ithd	CH4	OUT	00:00:00.601

No. 11: 2020/02/04 03:28:34.498, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:34.498	Ithd	CH4	IN	

No. 12: 2020/02/04 03:28:34.699, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:34.699	Ithd	CH4	OUT	00:00:00.201

No. 13: 2020/02/04 03:28:34.899, Ithd, CH4, IN

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:34.899	Ithd	CH4	IN	

No. 14: 2020/02/04 03:28:35.099, Ithd, CH4, OUT

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 03:28:35.099	Ithd	CH4	OUT	00:00:00.200

No. 15: 2020/02/04 03:28:35.299, Ithd, CH4, IN

	Date Time	Event Item	ch	IN/OUT	Data
	2020/02/04 03:28:35.299	Ithd	CH4	IN	

No. 16: 2020/02/04 03:28:58.922, Ithd, CH4, OUT

	Date Time	Event Item	ch	IN/OUT	Data
	2020/02/04 03:28:58.922	Ithd	CH4	OUT	00:00:23.623

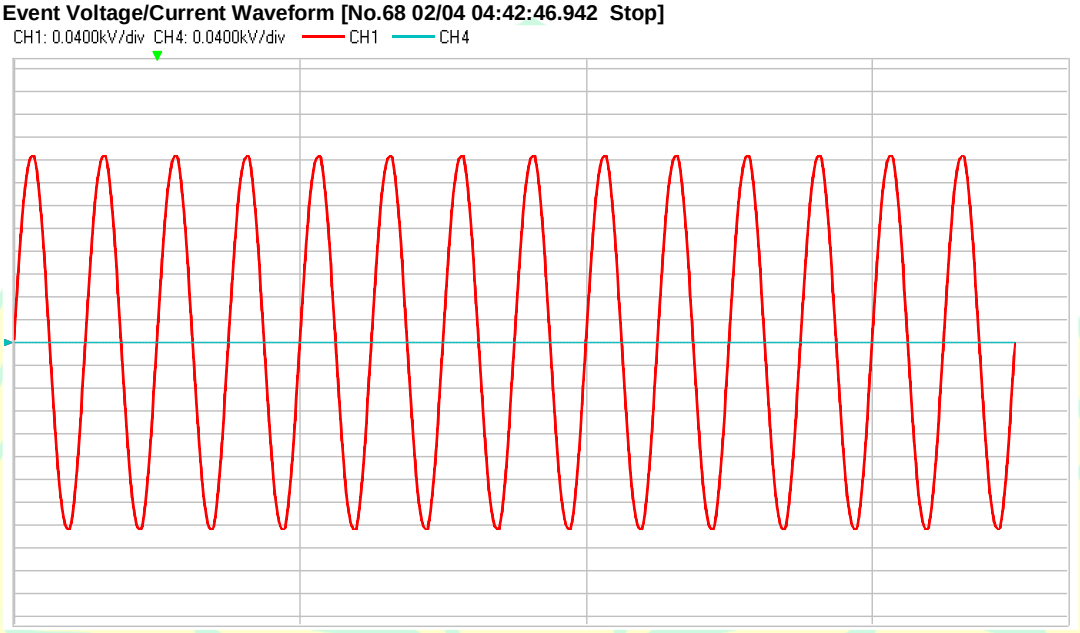
No. 17: 2020/02/04 03:28:59.122, Ithd, CH4, IN

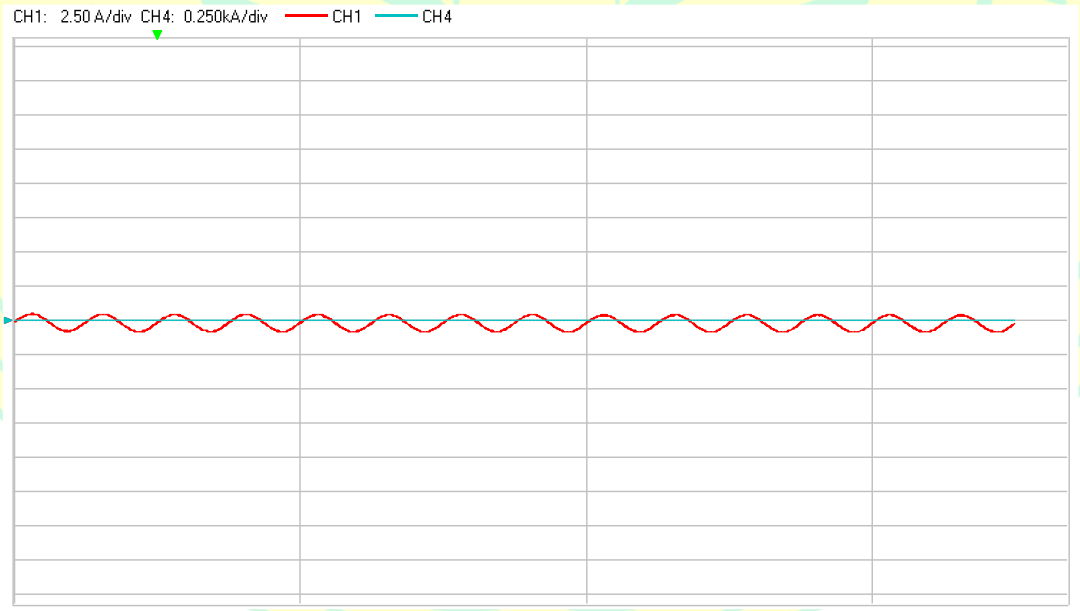
	Date Time	Event Item	ch	IN/OUT	Data
	2020/02/04 03:28:59.122	Ithd	CH4	IN	

No. 18: 2020/02/04 03:29:03.726, Ithd, CH4, OUT

	Date Time	Event Item	ch	IN/OUT	Data

Event Voltage/Current Waveform [No.68 02/04 04:42:46.942 Stop]





MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

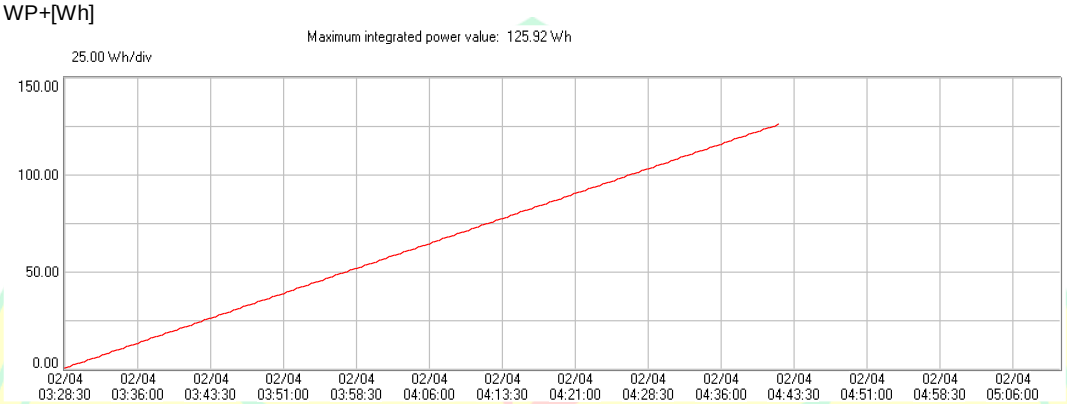
EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	
U THD	7.20 %	OFF	
I THD	40.00 %	50.00 %	
Hharm U Component	OFF	OFF	
Hharm I Component	OFF	OFF	
U RevPhaseUnbalance	OFF		
I RevPhaseUnbalance	OFF		

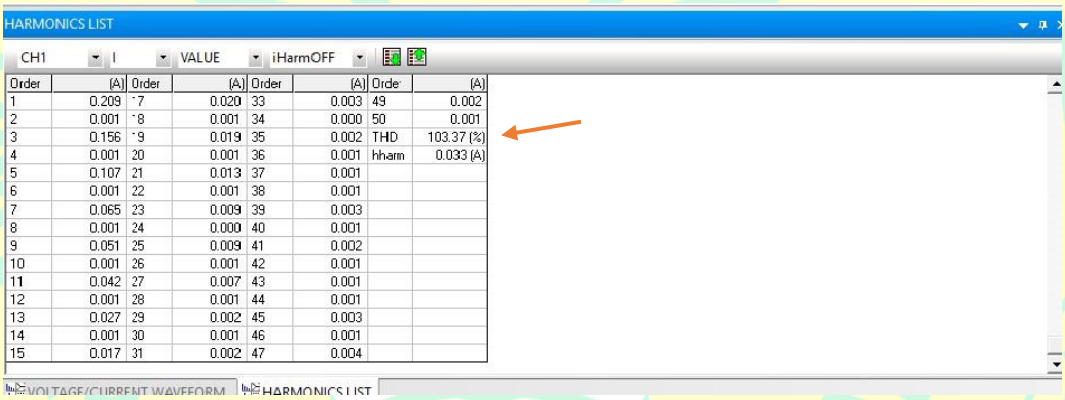
U 0PhaseUnbalance	OFF
I 0PhaseUnbalance	OFF

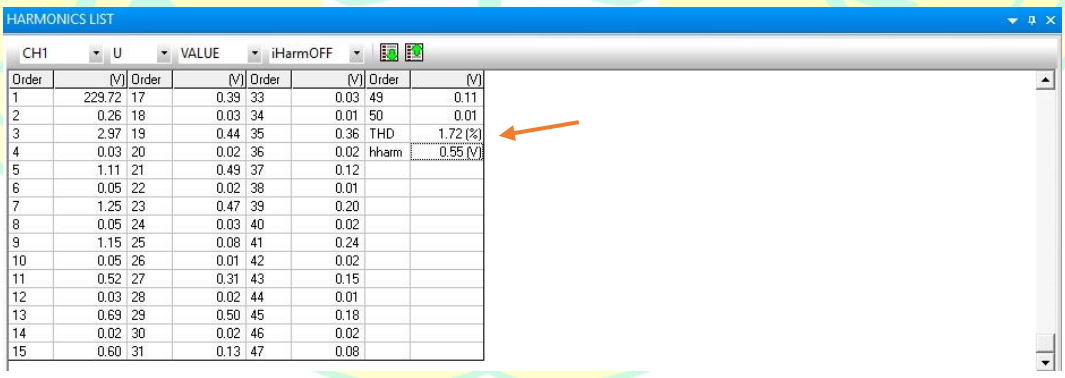
2020/02/04 03:28:30 - 2020/02/04 04:42:30

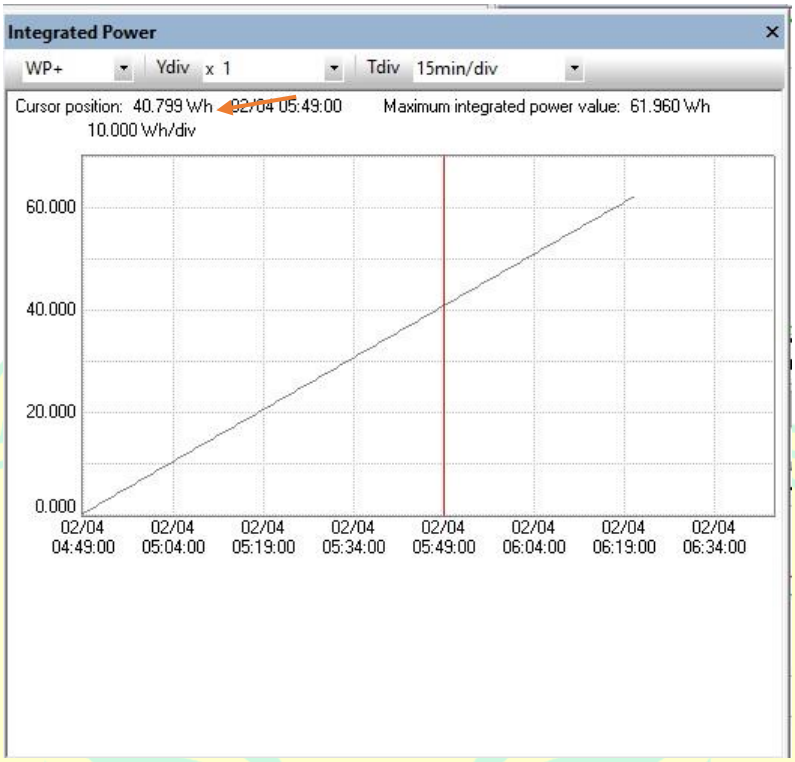
WP+[Wh]



Lampiran 8 Hasil Penelitian Beban Non Linier 46 Watt





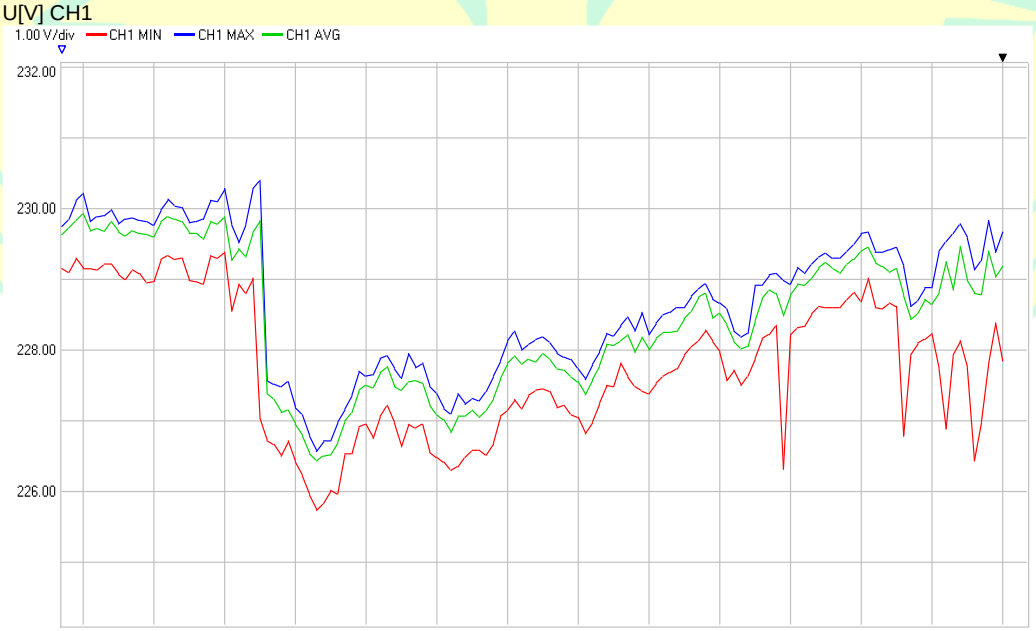


Time Plot
Graph

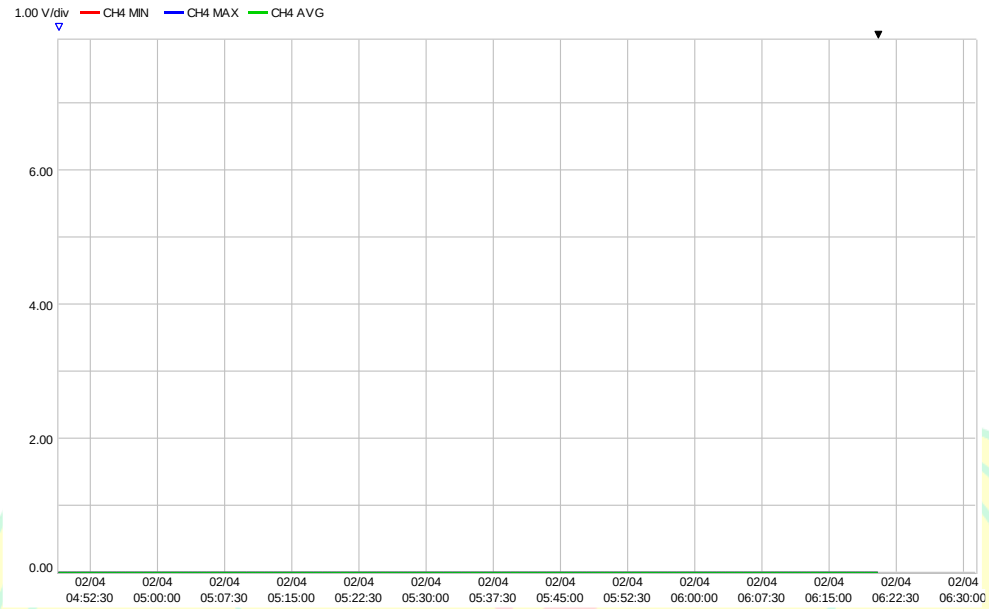
Page 1
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\46 watt\B0020400

2020/02/04 04:49:00 - 2020/02/04 06:20:30

U[V] CH1



U[V] CH4

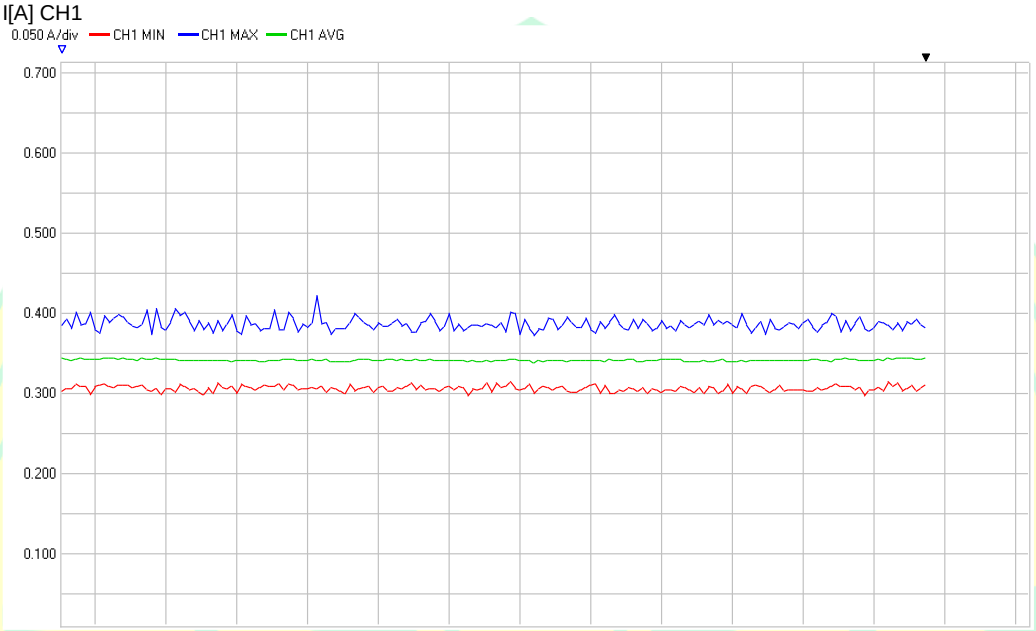


Time Plot
Graph

06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\46 watt\B0020400

2020/02/04 04:49:00 - 2020/02/04 06:20:30

I[A] CH1

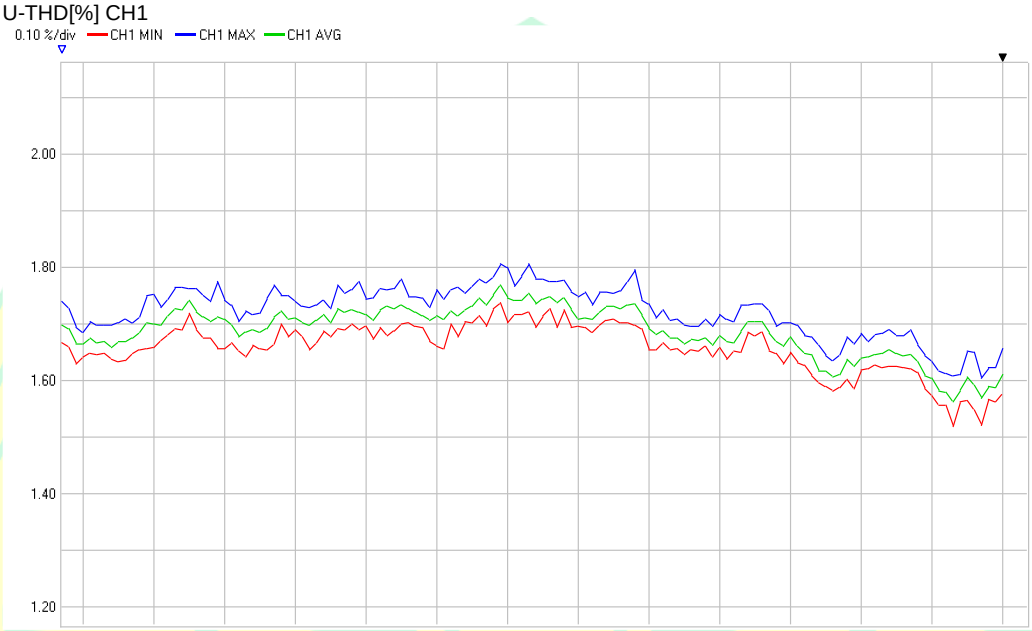


I[A] CH4

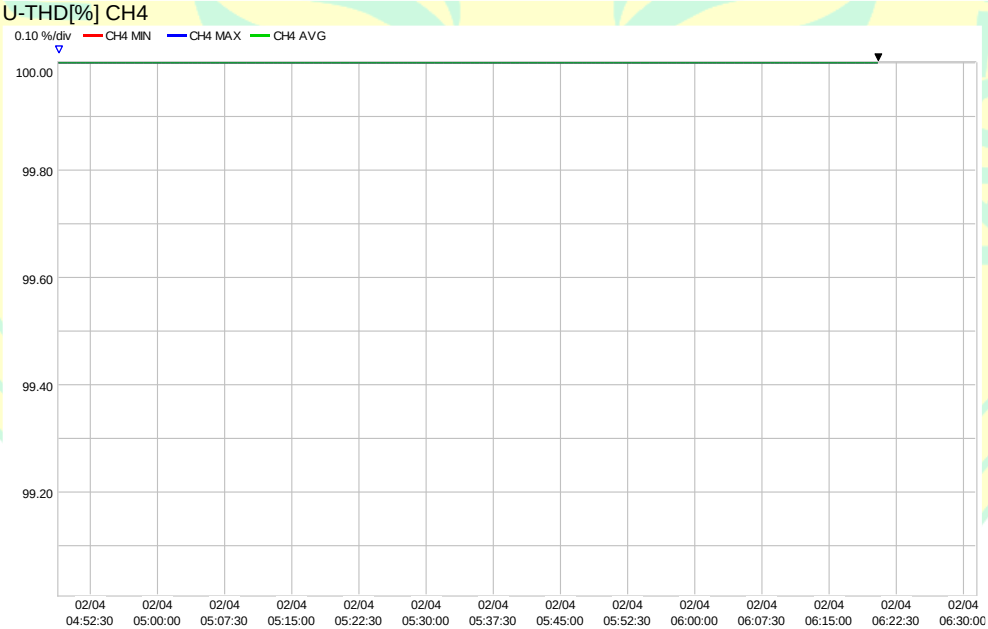
U-THD

2020/02/04 04:49:00 - 2020/02/04 06:20:30

U-THD[%] CH1



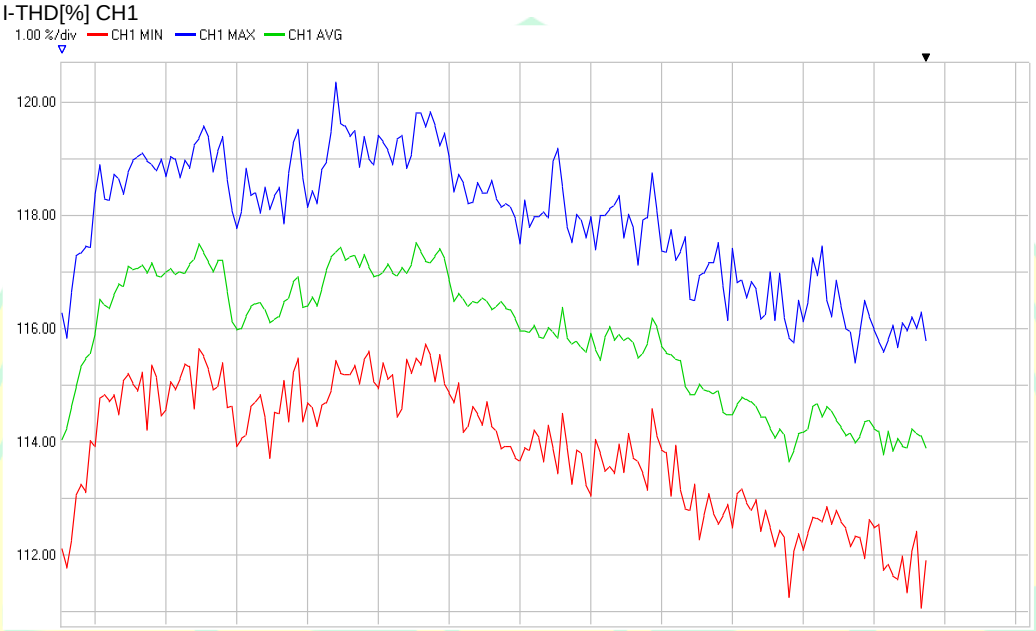
U-THD[%] CH4



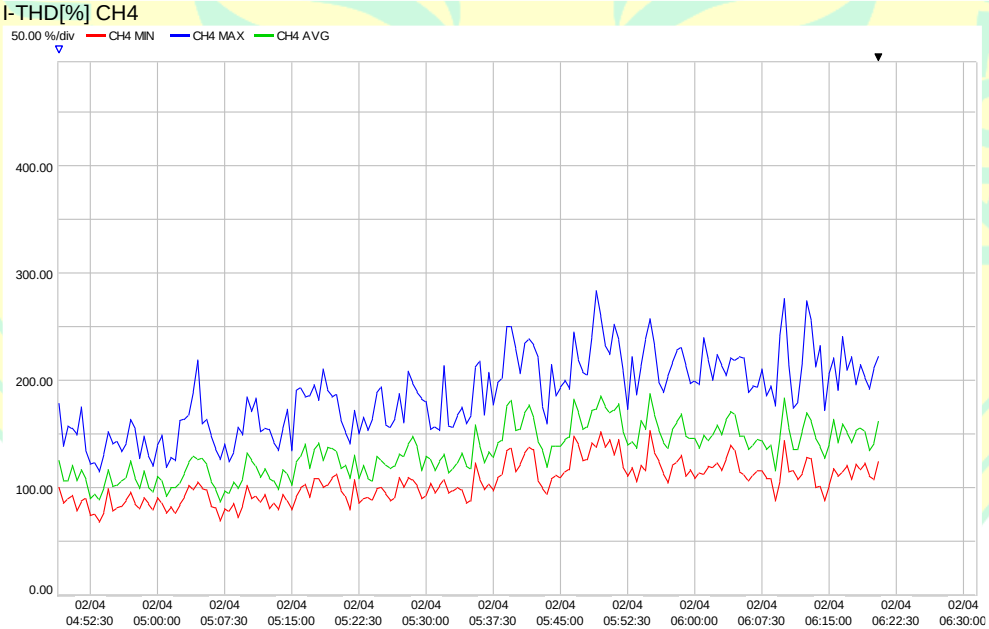
I-
THD

2020/02/04 04:49:00 - 2020/02/04 06:20:30

I-THD[%] CH1



I-THD[%] CH4



List for All Events
Details

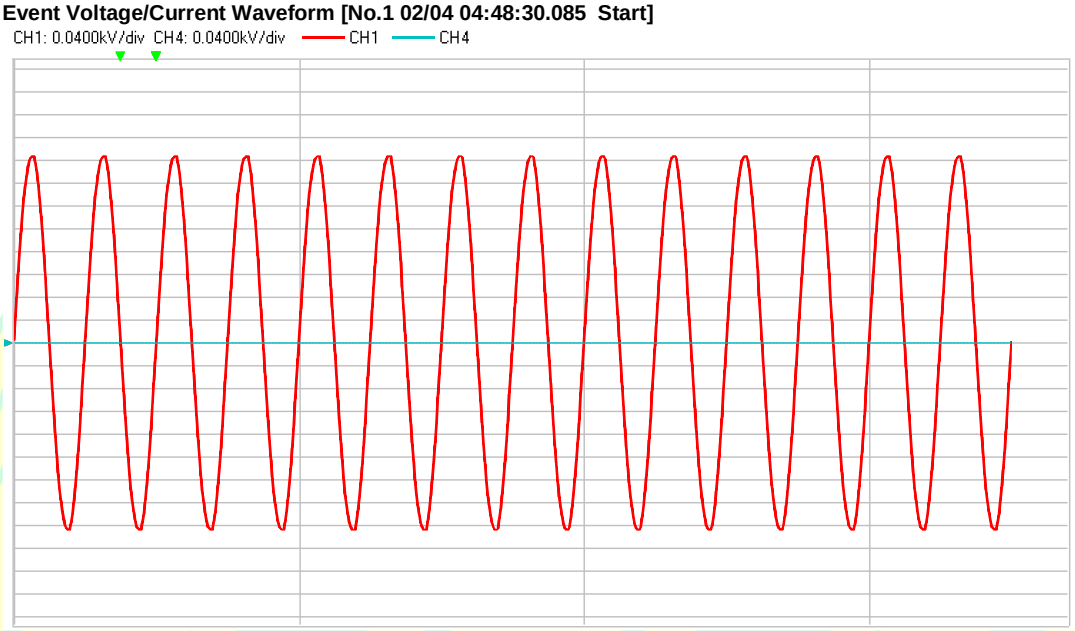
No. 1: 2020/02/04 04:48:30.085, Start, WDU

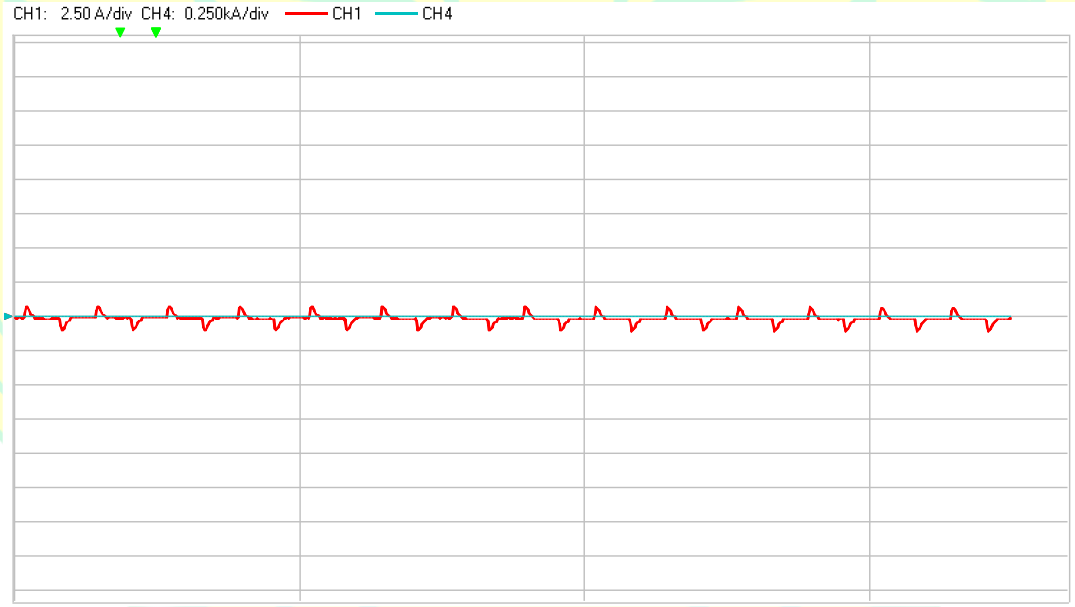
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 04:48:30.075	Dip	CH1	IN	
2020/02/04 04:48:30.085	Ithd	CH1	IN	
2020/02/04 04:48:30.085	Ithd	CH4	IN	
2020/02/04 04:48:30.085	Start			

No. 2: 2020/02/04 06:20:56.977, Stop

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 06:20:56.977	Stop			

Event Voltage/Current Waveform [No.1 02/04 04:48:30.085 Start]





MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	
U THD	7.20 %	OFF	
I THD	40.00 %	50.00 %	

Hharm U Component	OFF	OFF
Hharm I Component	OFF	OFF
U RevPhaseUnbalance	OFF	
I RevPhaseUnbalance	OFF	
U 0PhaseUnbalance	OFF	
I 0PhaseUnbalance	OFF	

Integrated Power Analysis

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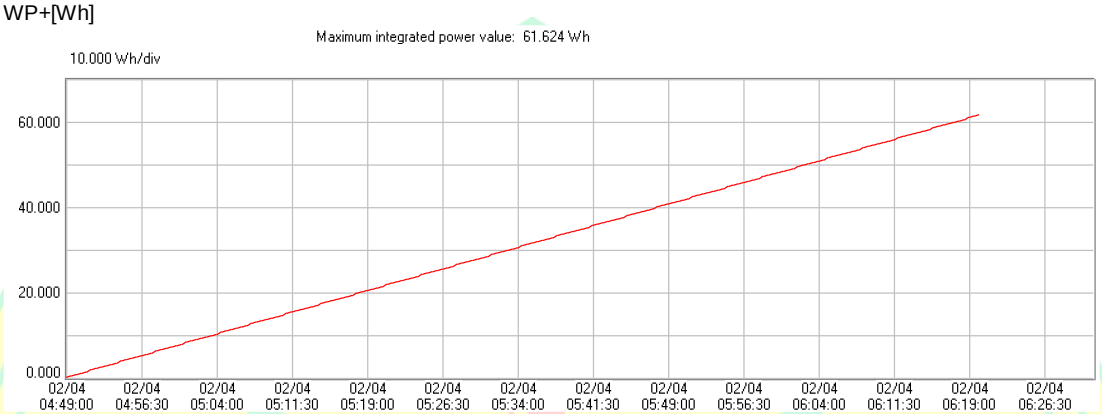
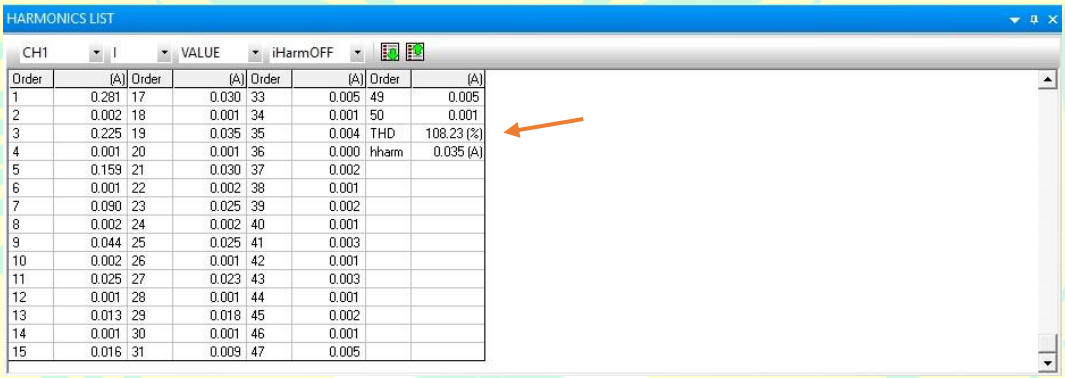
2020/02/04 04:49:00 - 2020/02/04 06:20:30

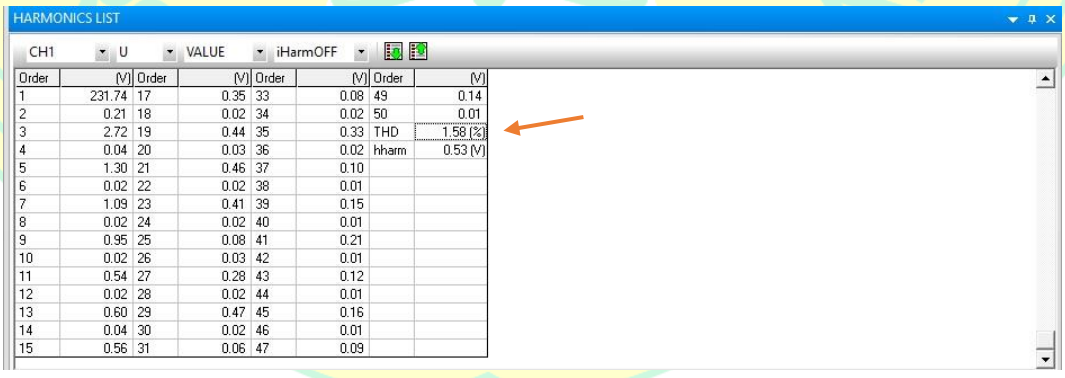
WP+[Wh]



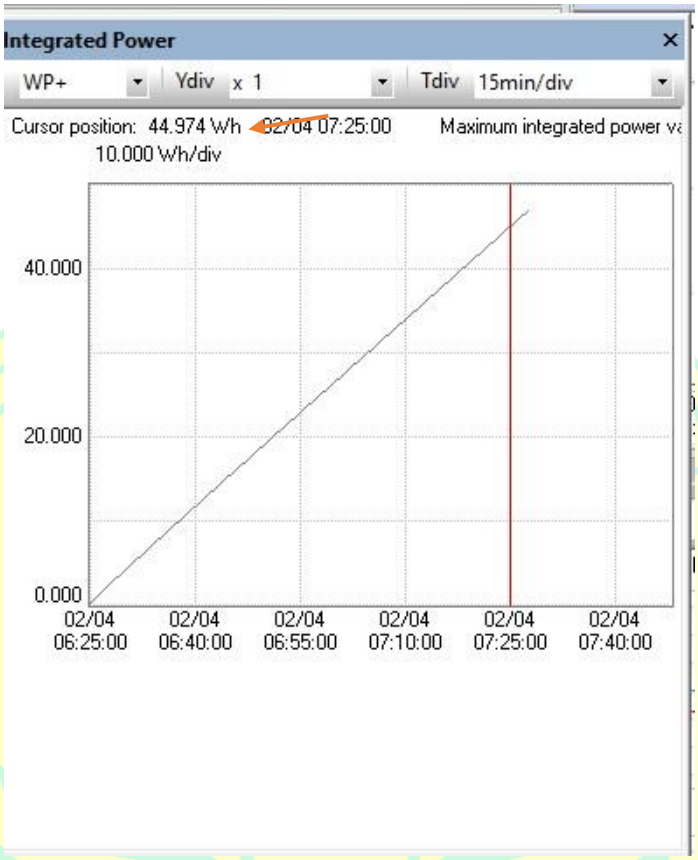
Lampiran 9 Hasil Penelitian Beban Non Linier 50 Watt



Order	(A)	Order	(A)	Order	(A)	Order	(A)
1	0.281	17	0.030	33	0.005	49	0.005
2	0.002	18	0.001	34	0.001	50	0.001
3	0.225	19	0.035	35	0.004	THD	108.23 (%)
4	0.001	20	0.001	36	0.000	hharm	0.035 (A)
5	0.159	21	0.030	37	0.002		
6	0.001	22	0.002	38	0.001		
7	0.090	23	0.025	39	0.002		
8	0.002	24	0.002	40	0.001		
9	0.044	25	0.025	41	0.003		
10	0.002	26	0.001	42	0.001		
11	0.025	27	0.023	43	0.003		
12	0.001	28	0.001	44	0.001		
13	0.013	29	0.018	45	0.002		
14	0.001	30	0.001	46	0.001		
15	0.016	31	0.009	47	0.005		



Order	(V)	Order	(V)	Order	(V)	Order	(V)
1	231.74	17	0.35	33	0.08	49	0.14
2	0.21	18	0.02	34	0.02	50	0.01
3	2.72	19	0.44	35	0.33	THD	1.58 (%)
4	0.04	20	0.03	36	0.02	hharm	0.53 (V)
5	1.30	21	0.46	37	0.10		
6	0.02	22	0.02	38	0.01		
7	1.09	23	0.41	39	0.15		
8	0.02	24	0.02	40	0.01		
9	0.95	25	0.08	41	0.21		
10	0.02	26	0.03	42	0.01		
11	0.54	27	0.28	43	0.12		
12	0.02	28	0.02	44	0.01		
13	0.60	29	0.47	45	0.16		
14	0.04	30	0.02	46	0.01		
15	0.56	31	0.06	47	0.09		

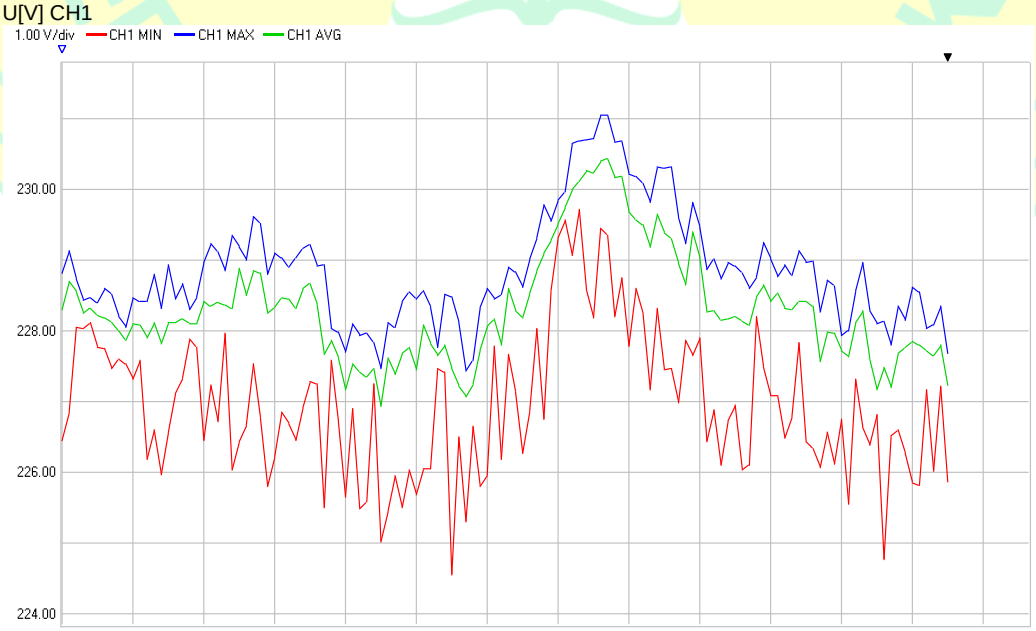


Time Plot Graph

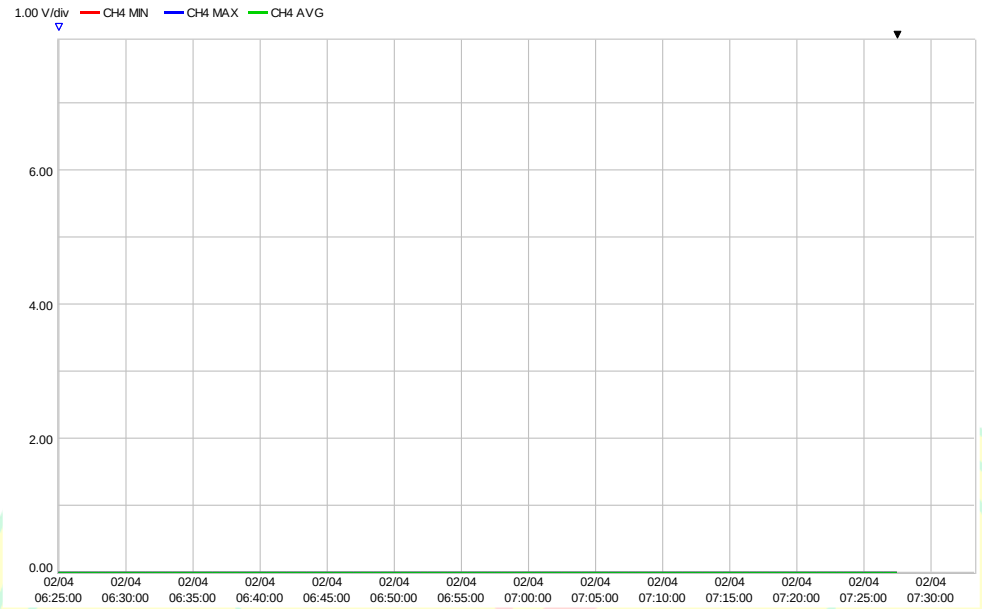
Page 1
04/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\50 watt\B0020400

2020/02/04 06:25:00 - 2020/02/04 07:27:30

U[V] CH1



U[V] CH4

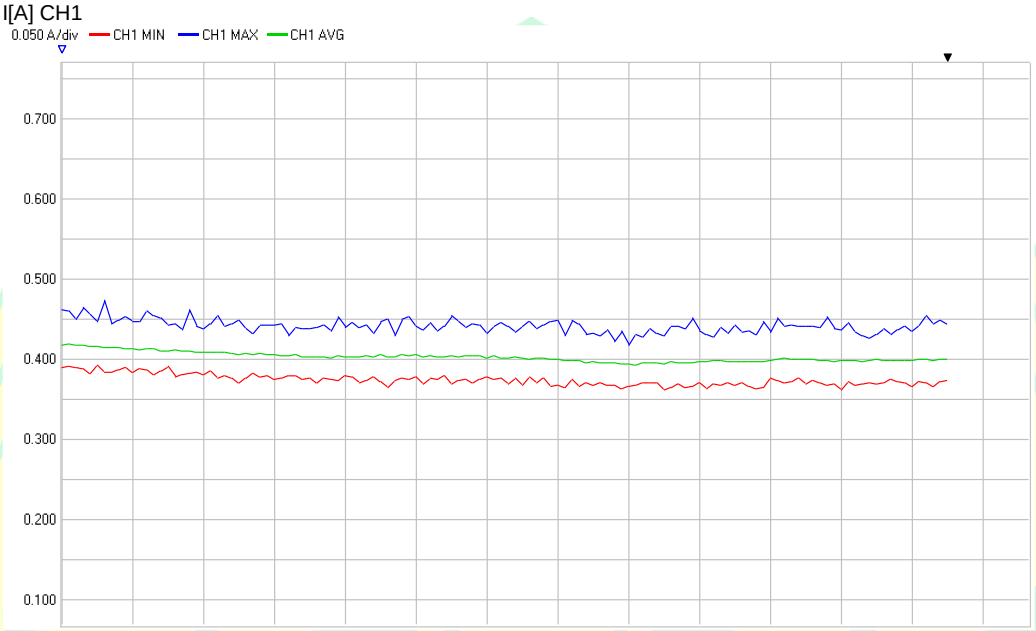


Time Plot
Graph

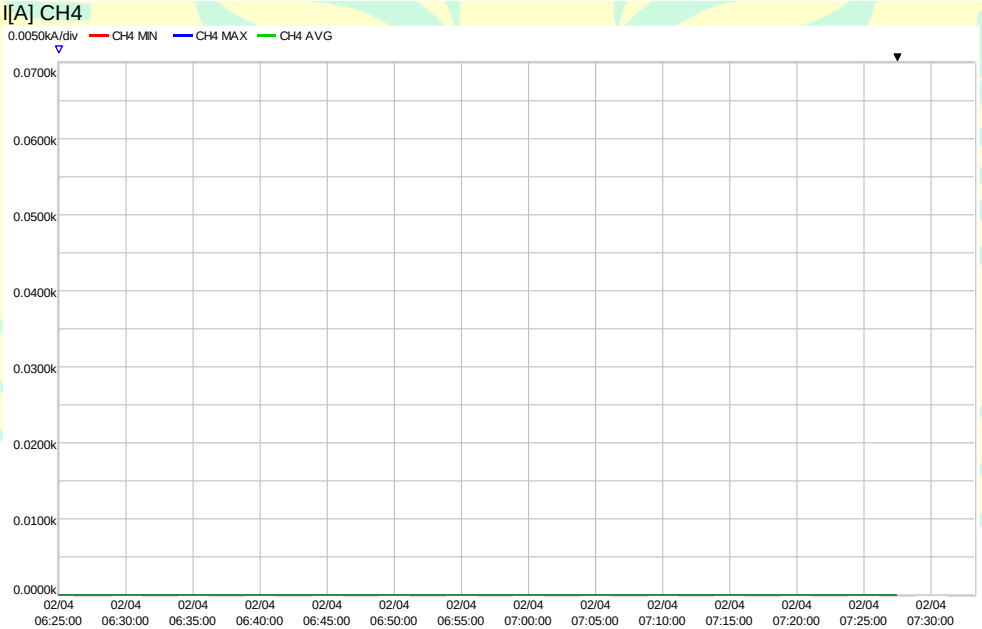
04/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\50 watt\B0020400

2020/02/04 06:25:00 - 2020/02/04 07:27:30

I[A] CH1



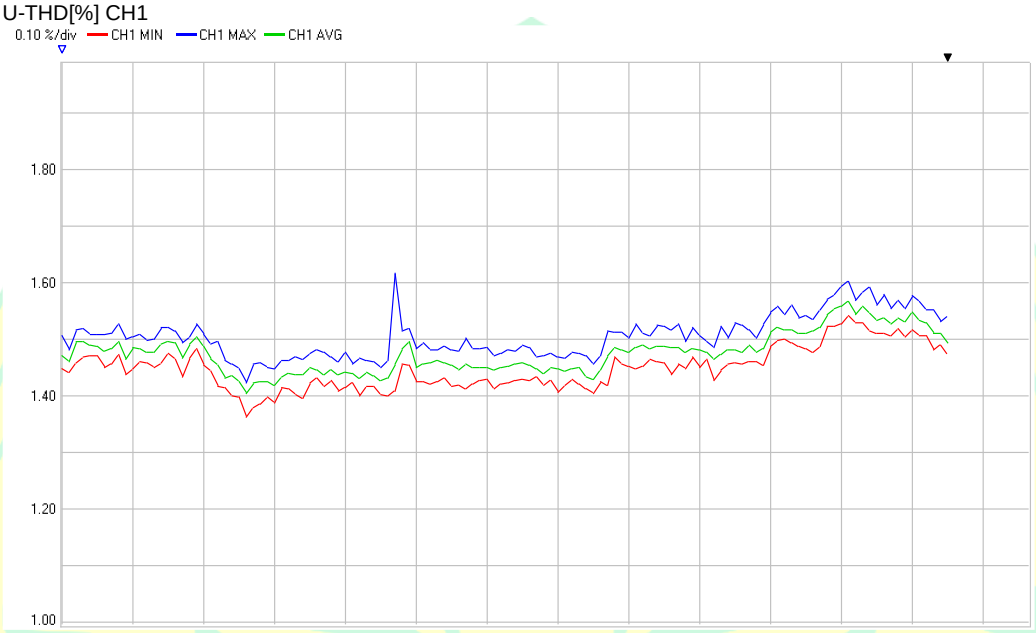
I[A] CH4



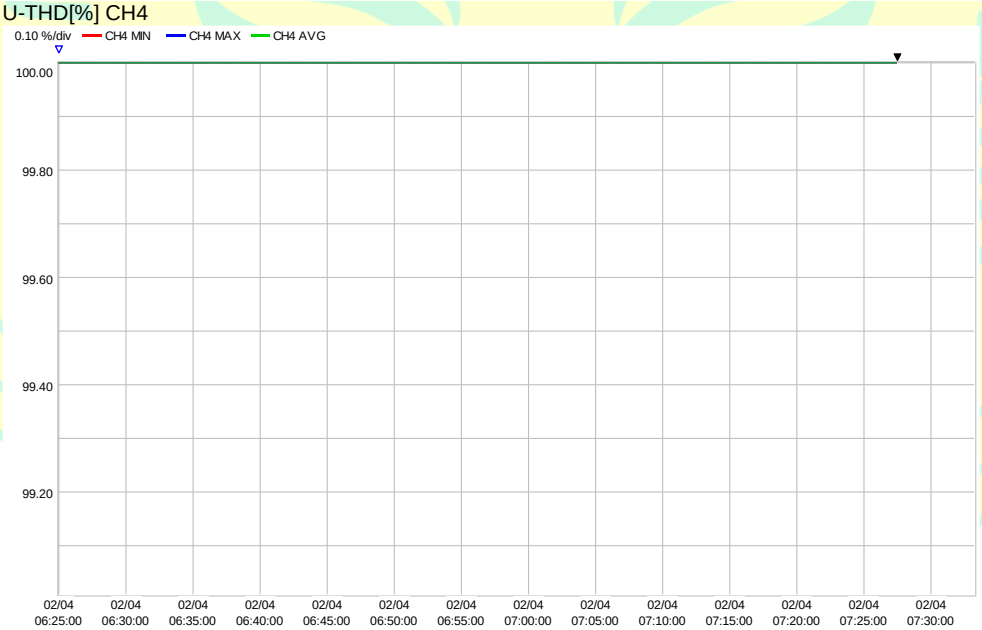
U-
THD

2020/02/04 06:25:00 - 2020/02/04 07:27:30

U-THD[%] CH1



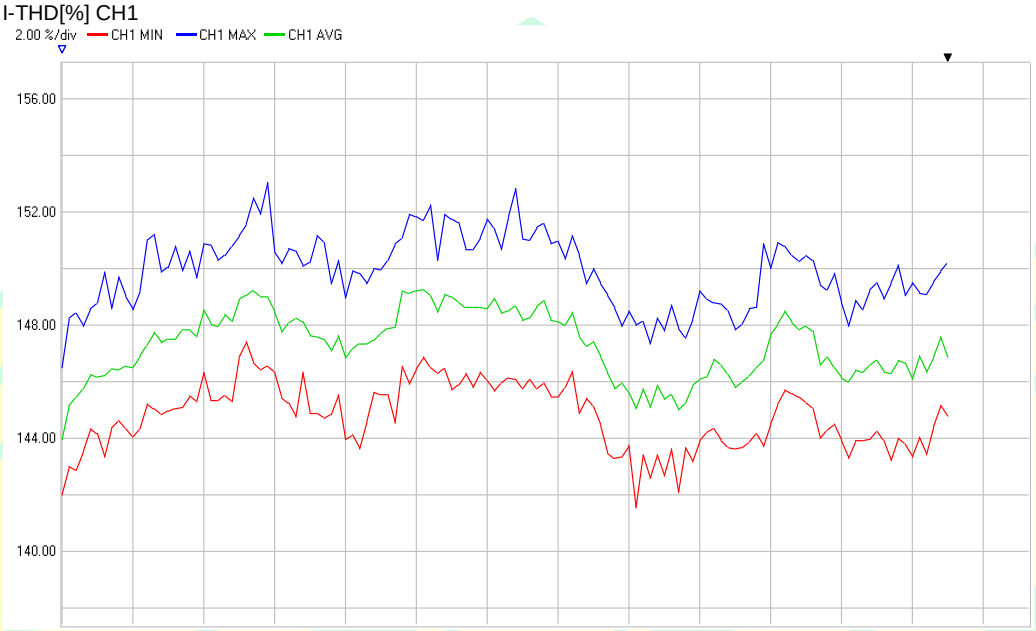
U-THD[%] CH4



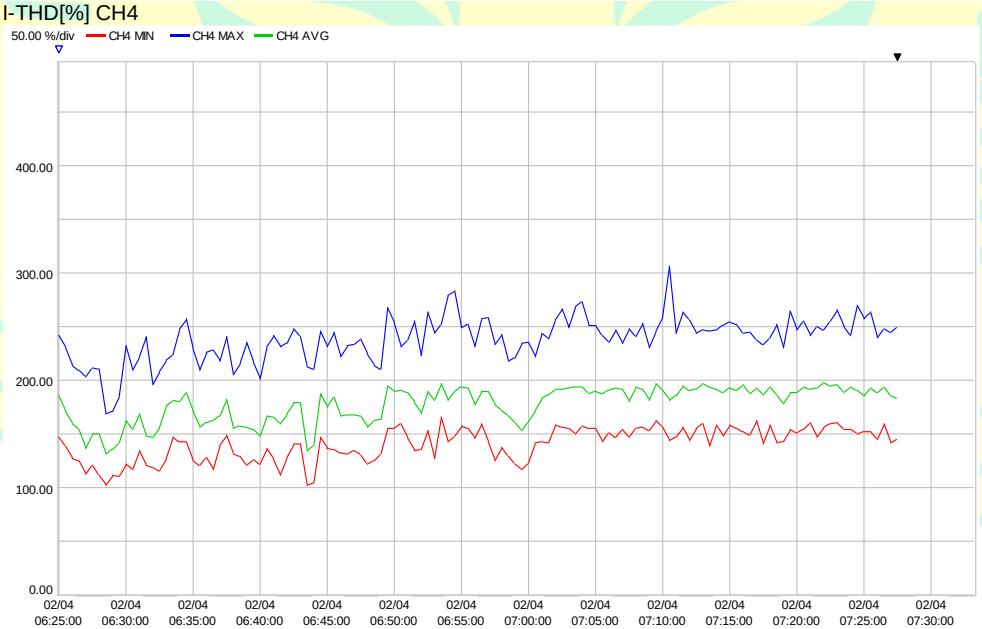
I-
THD

2020/02/04 06:25:00 - 2020/02/04 07:27:30

I-THD[%] CH1



I-THD[%] CH4



List for All Events
Details

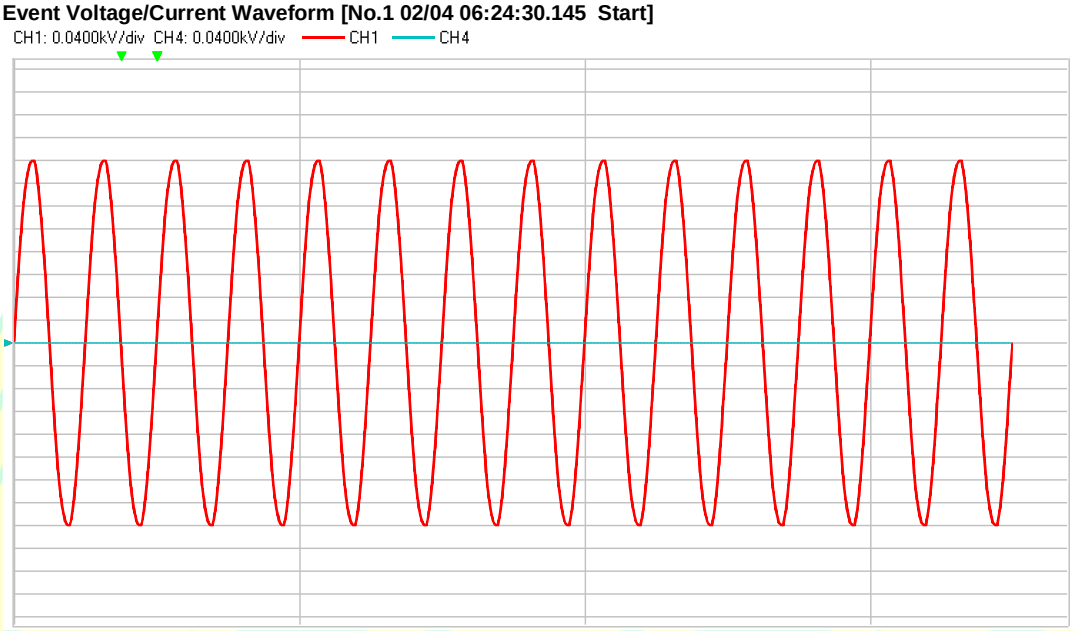
No. 1: 2020/02/04 06:24:30.145, Start, WDU

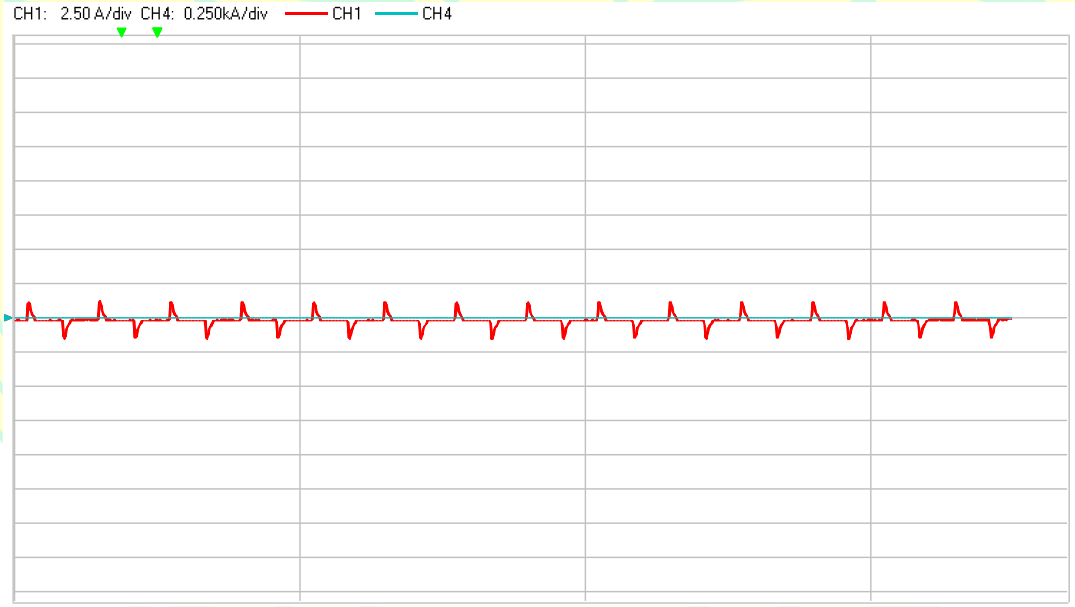
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 06:24:30.135	Dip	CH1	IN	
2020/02/04 06:24:30.145	Ithd	CH1	IN	
2020/02/04 06:24:30.145	Ithd	CH4	IN	
2020/02/04 06:24:30.145	Start			

No. 2: 2020/02/04 07:27:30.835, Stop

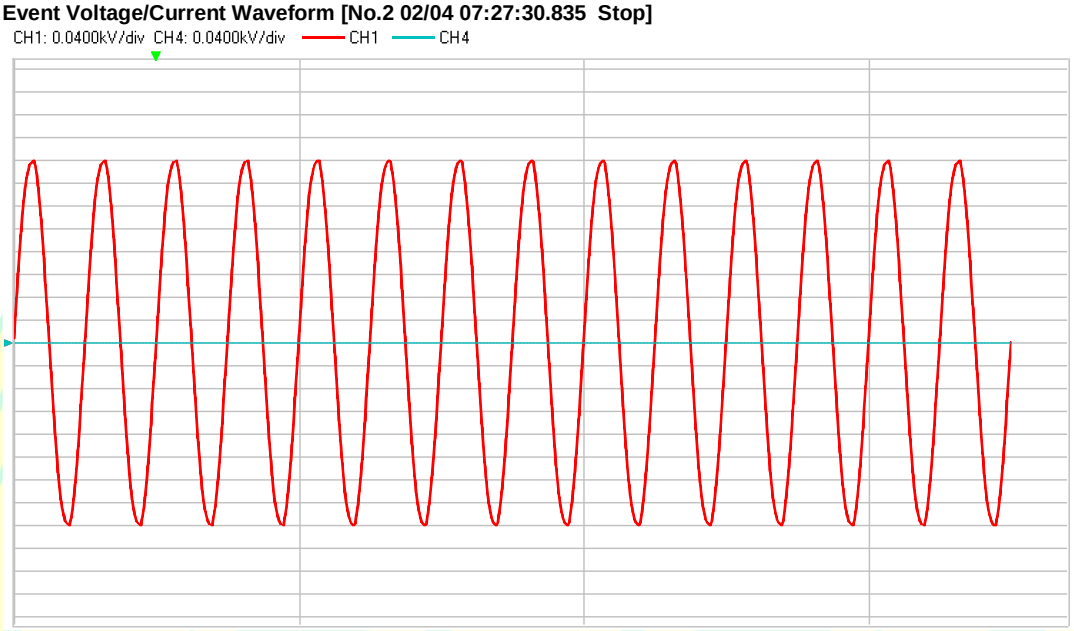
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 07:27:30.835	Stop			

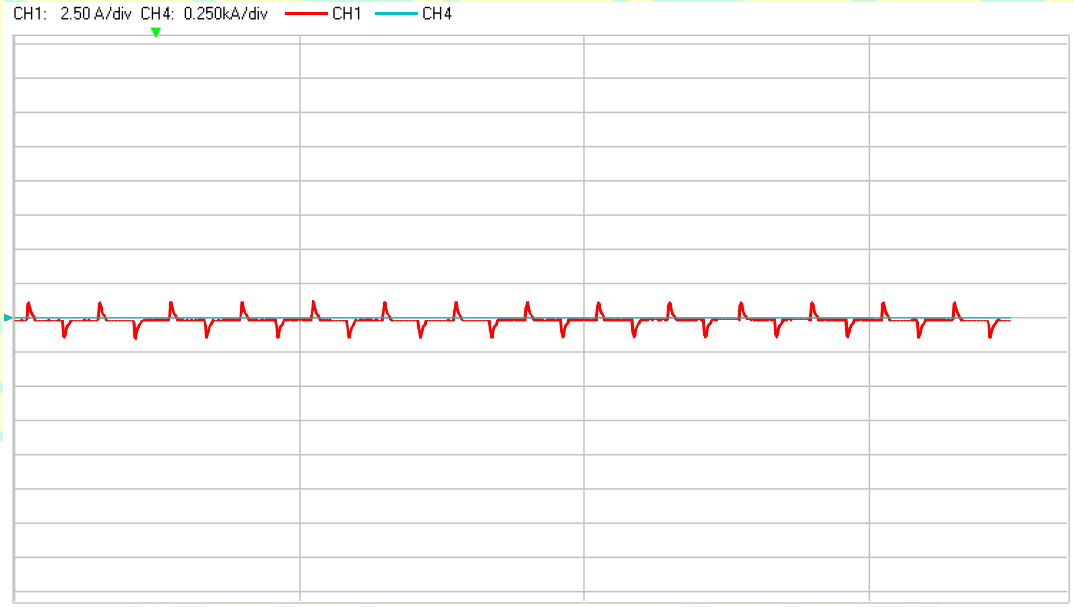
Event Voltage/Current Waveform [No.1 02/04 06:24:30.145 Start]





Event Voltage/Current Waveform [No.2 02/04 07:27:30.835 Stop]





MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

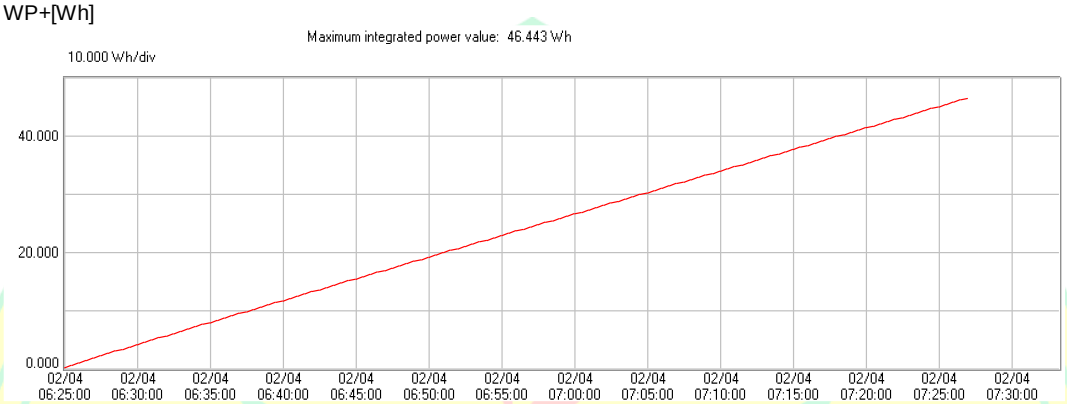
EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	
U THD	7.20 %	OFF	
I THD	40.00 %	50.00 %	
Hharm U Component	OFF	OFF	
Hharm I Component	OFF	OFF	
U RevPhaseUnbalance	OFF		
I RevPhaseUnbalance	OFF		

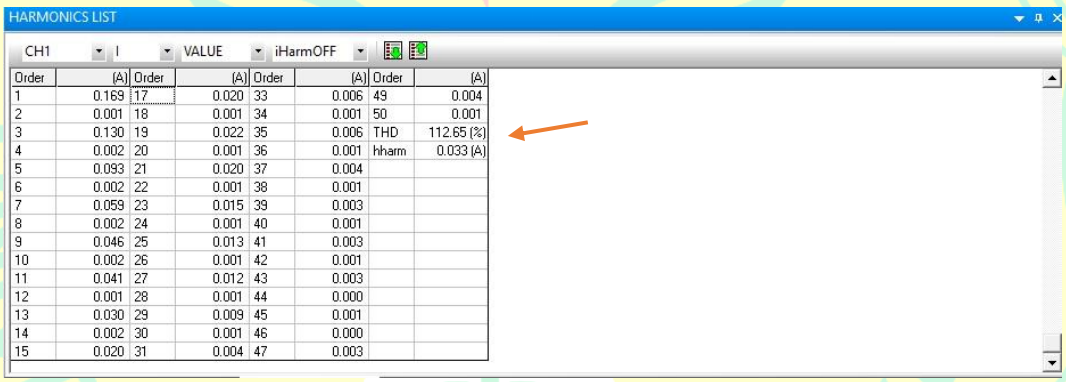
U 0PhaseUnbalance	OFF
I 0PhaseUnbalance	OFF

2020/02/04 06:25:00 - 2020/02/04 07:27:30

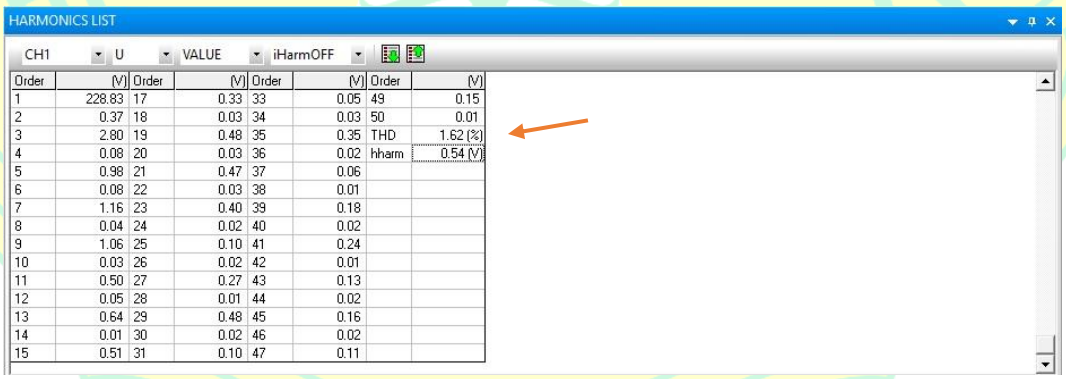
WP+[Wh]



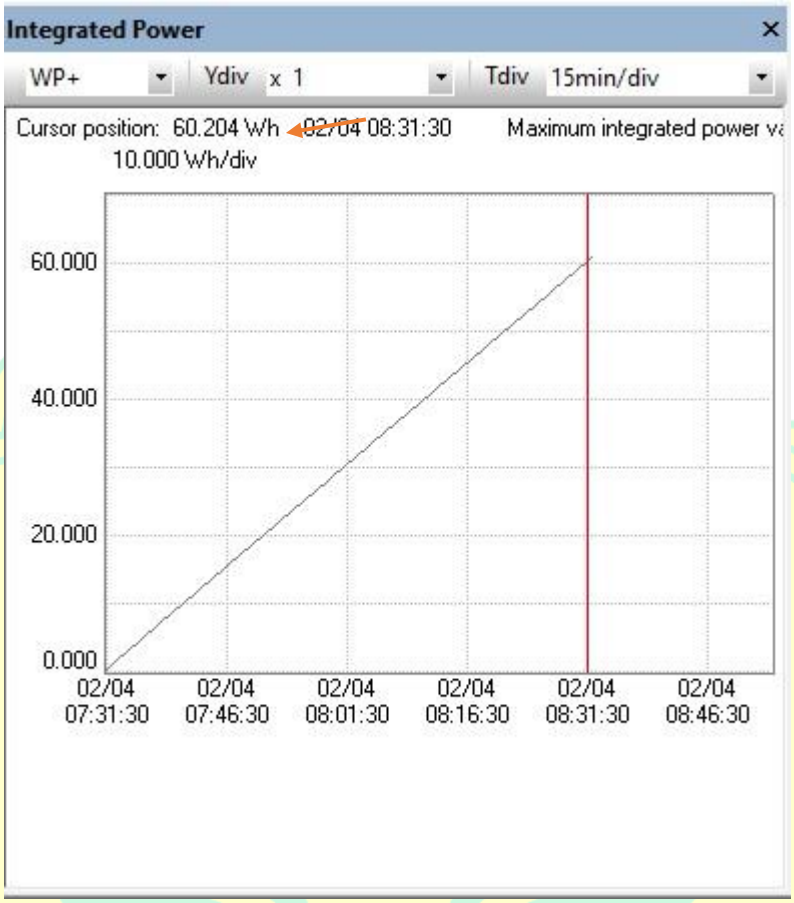
Lampiran 10 Hasil Penelitian Beban Non Linier 70 Watt



Order	(A)	Order	(A)	Order	(A)	Order	(A)
1	0.169	17	0.020	33	0.006	49	0.004
2	0.001	18	0.001	34	0.001	50	0.001
3	0.130	19	0.022	35	0.006	THD	112.65 (%)
4	0.002	20	0.001	36	0.001	hharm	0.033 (A)
5	0.093	21	0.020	37	0.004		
6	0.002	22	0.001	38	0.001		
7	0.059	23	0.015	39	0.003		
8	0.002	24	0.001	40	0.001		
9	0.046	25	0.013	41	0.003		
10	0.002	26	0.001	42	0.001		
11	0.041	27	0.012	43	0.003		
12	0.001	28	0.001	44	0.000		
13	0.030	29	0.009	45	0.001		
14	0.002	30	0.001	46	0.000		
15	0.020	31	0.004	47	0.003		



Order	(V)	Order	(V)	Order	(V)	Order	(V)
1	228.83	17	0.33	33	0.05	49	0.15
2	0.37	18	0.03	34	0.03	50	0.01
3	2.80	19	0.48	35	0.35	THD	1.62 (%)
4	0.08	20	0.03	36	0.02	hharm	0.54 (V)
5	0.98	21	0.47	37	0.06		
6	0.08	22	0.03	38	0.01		
7	1.16	23	0.40	39	0.18		
8	0.04	24	0.02	40	0.02		
9	1.06	25	0.10	41	0.24		
10	0.03	26	0.02	42	0.01		
11	0.50	27	0.27	43	0.13		
12	0.05	28	0.01	44	0.02		
13	0.64	29	0.48	45	0.16		
14	0.01	30	0.02	46	0.02		
15	0.51	31	0.10	47	0.11		

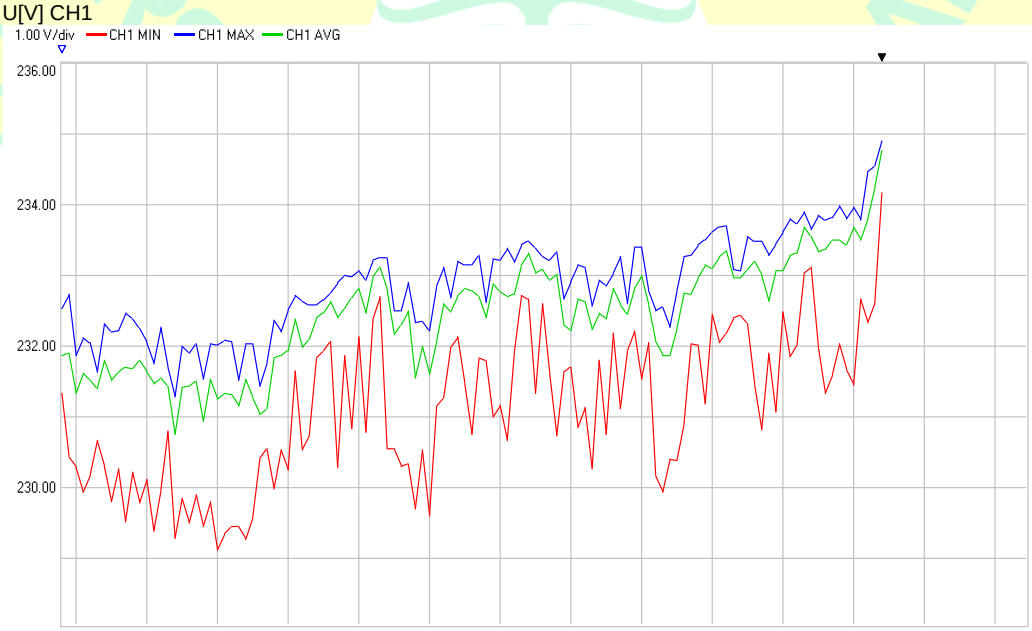


Time Plot Graph

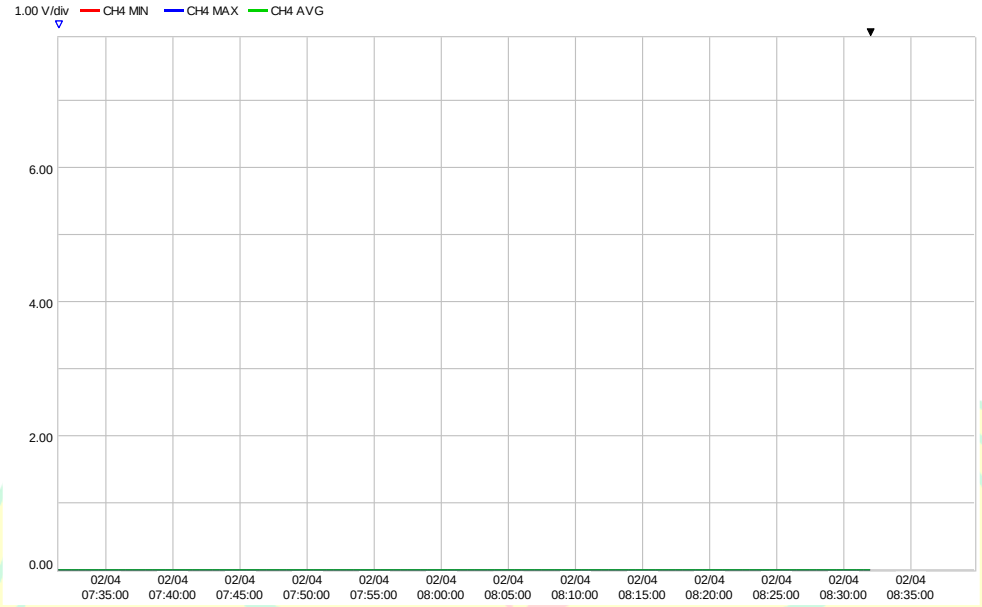
Page 1
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\70 watt\B0020400

2020/02/04 07:31:30 - 2020/02/04 08:32:00

U[V] CH1



U[V] CH4

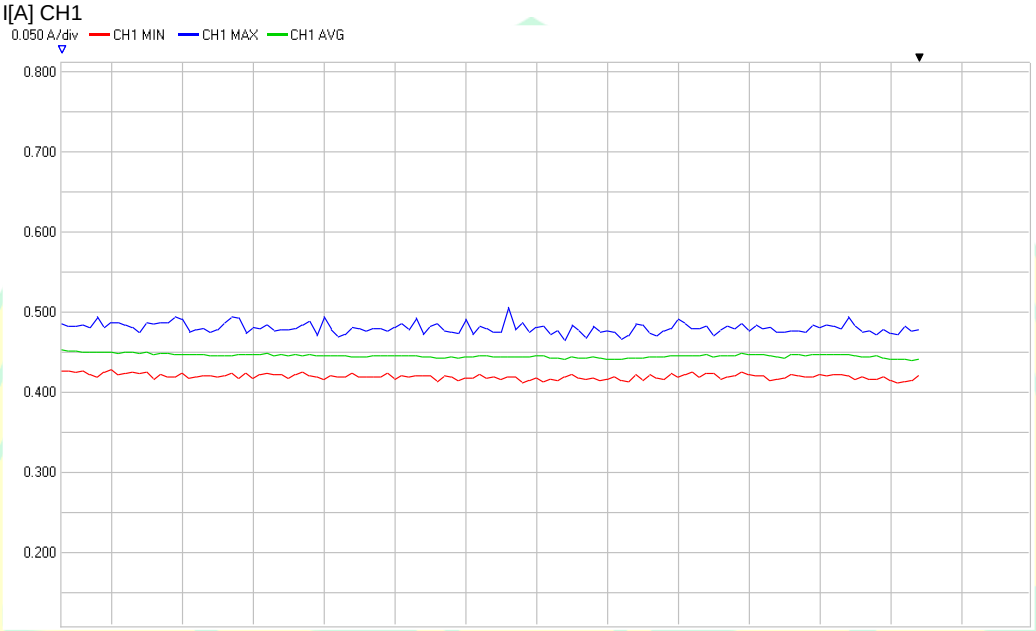


Time Plot
Graph

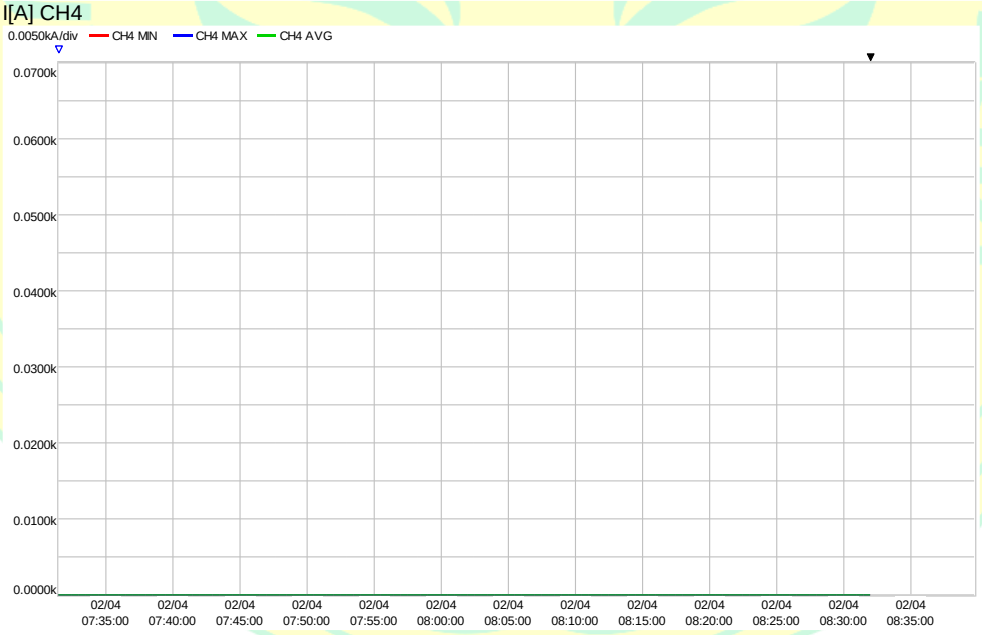
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\70 watt\B0020400

2020/02/04 07:31:30 - 2020/02/04 08:32:00

I[A] CH1



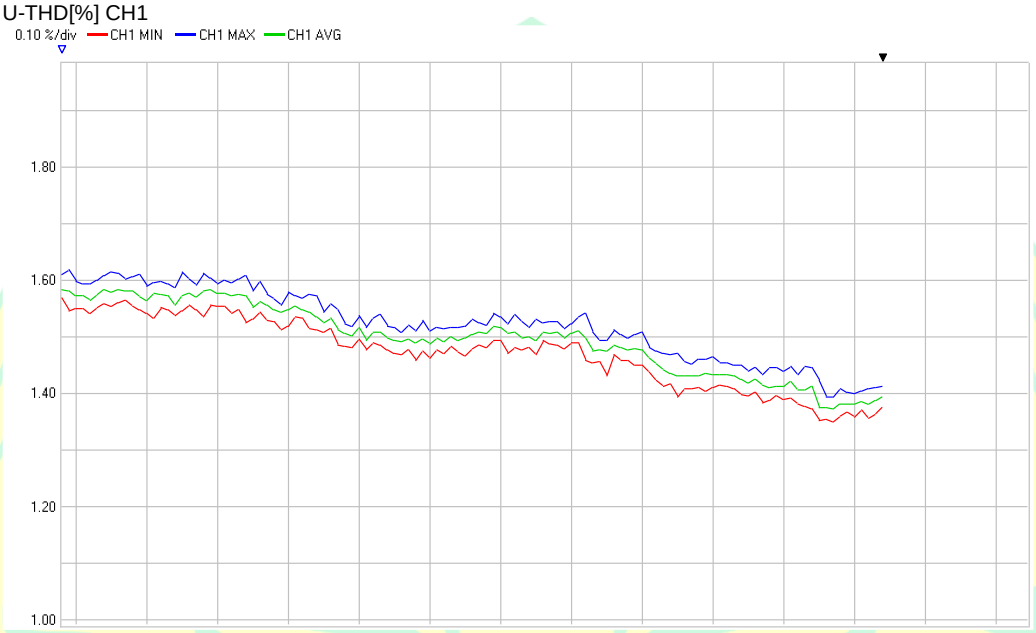
I[A] CH4



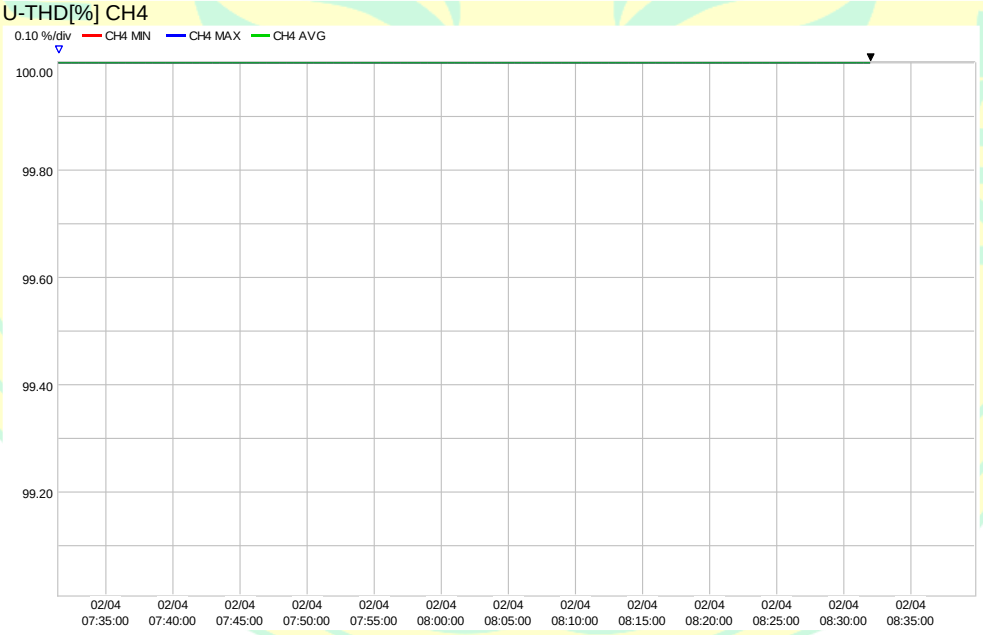
U-
THD

2020/02/04 07:31:30 - 2020/02/04 08:32:00

U-THD[%] CH1



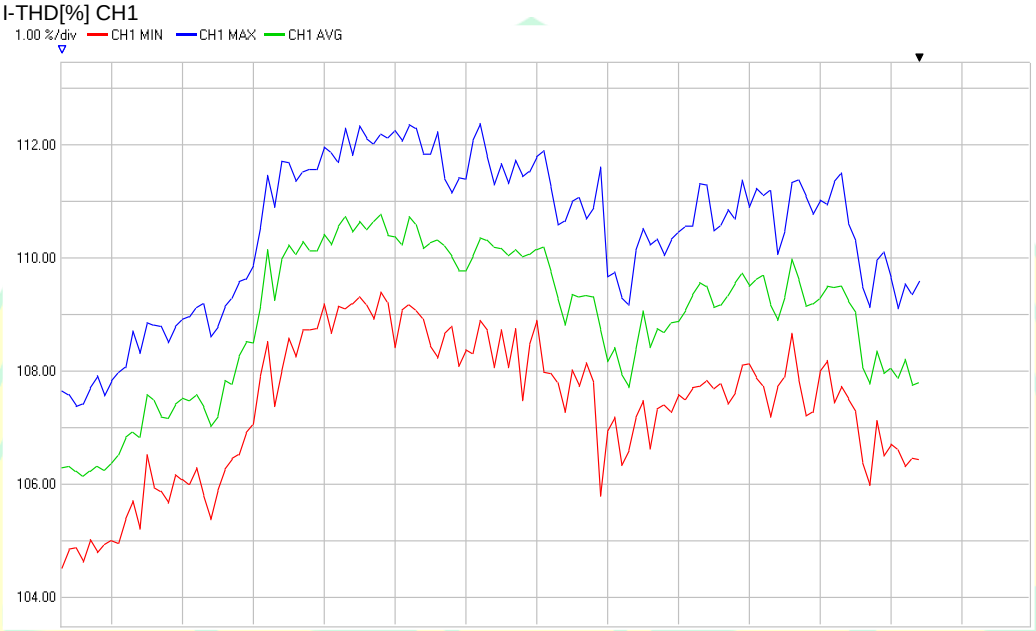
U-THD[%] CH4



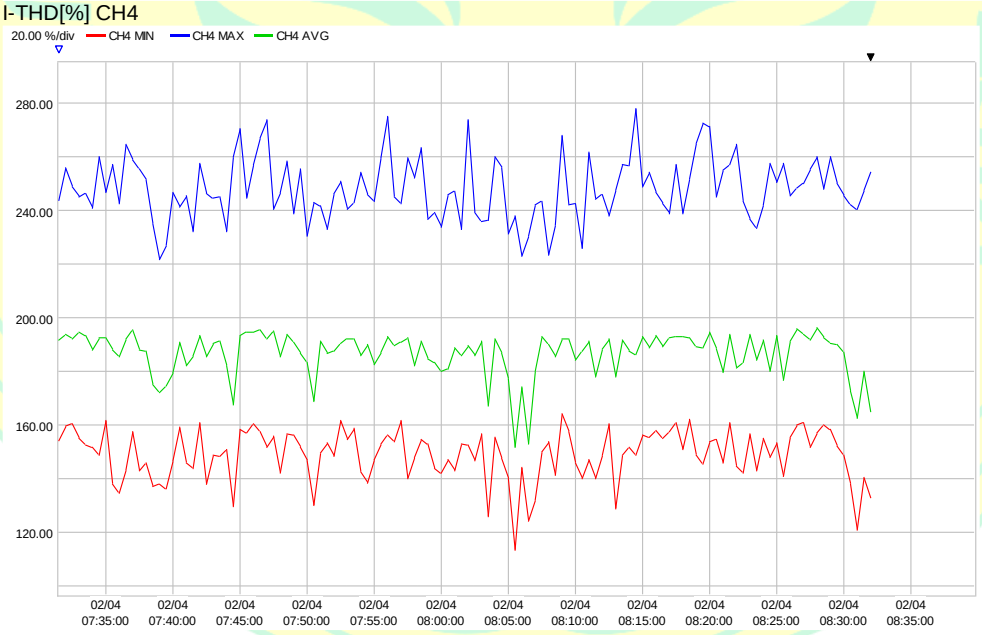
I-
THD

2020/02/04 07:31:30 - 2020/02/04 08:32:00

I-THD[%] CH1



I-THD[%] CH4



List for All Events
Details

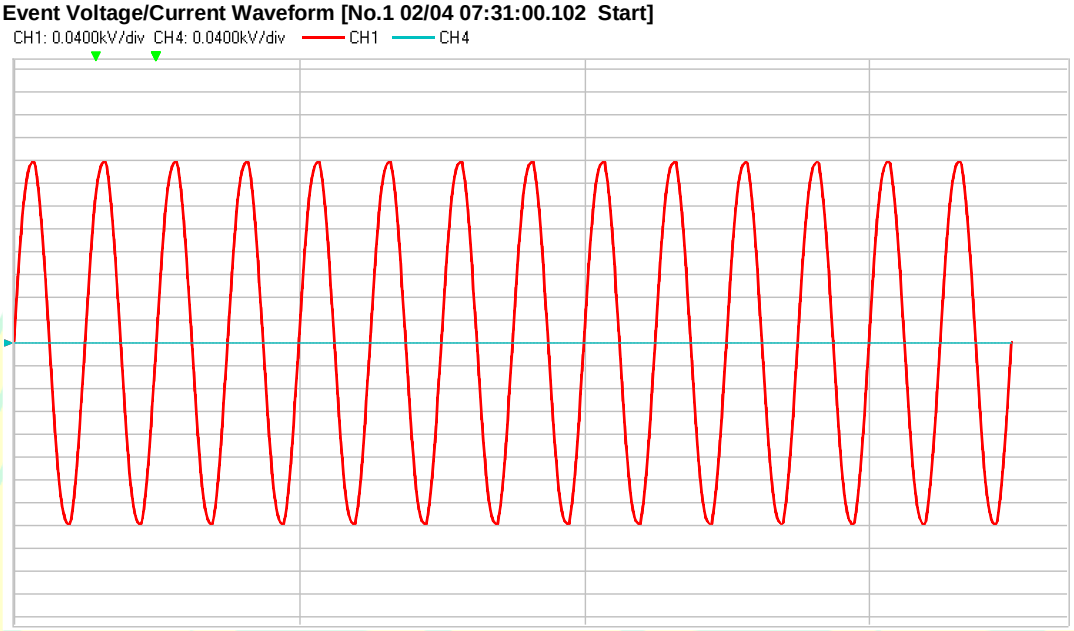
No. 1: 2020/02/04 07:31:00.102, Start, WDU

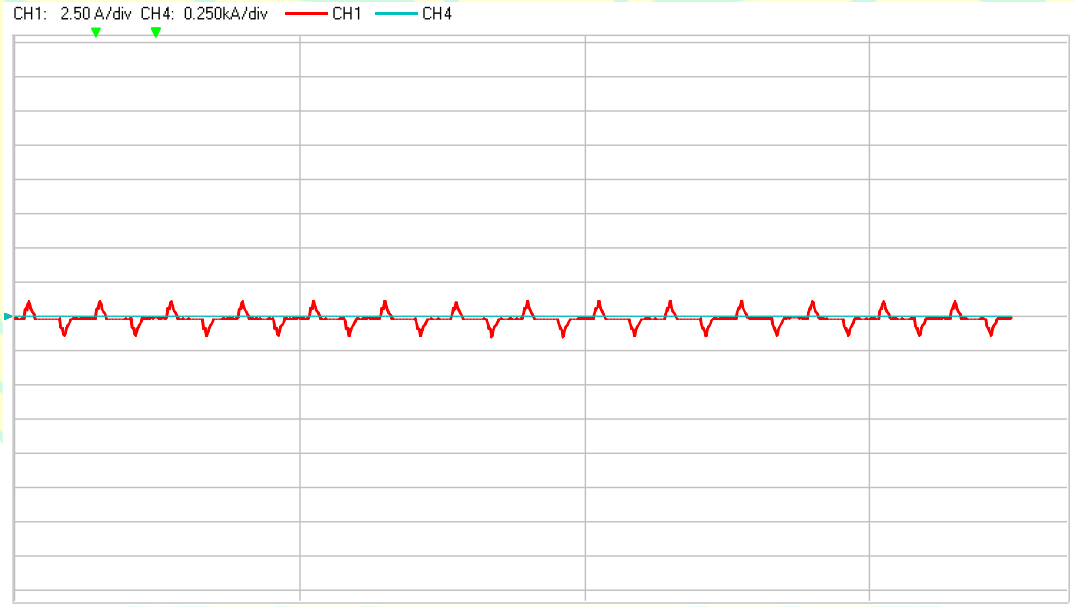
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 07:31:00.085	Dip	CH1	IN	
2020/02/04 07:31:00.102	Ithd	CH1	IN	
2020/02/04 07:31:00.102	Ithd	CH4	IN	
2020/02/04 07:31:00.102	Start			

No. 2: 2020/02/04 08:32:22.829, Stop

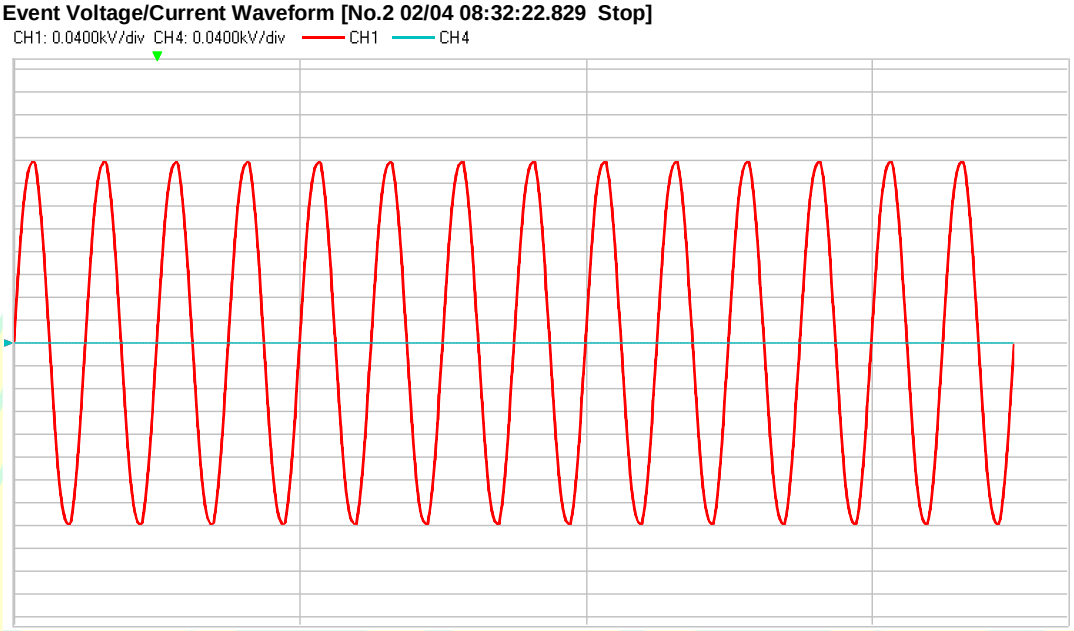
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 08:32:22.829	Stop			

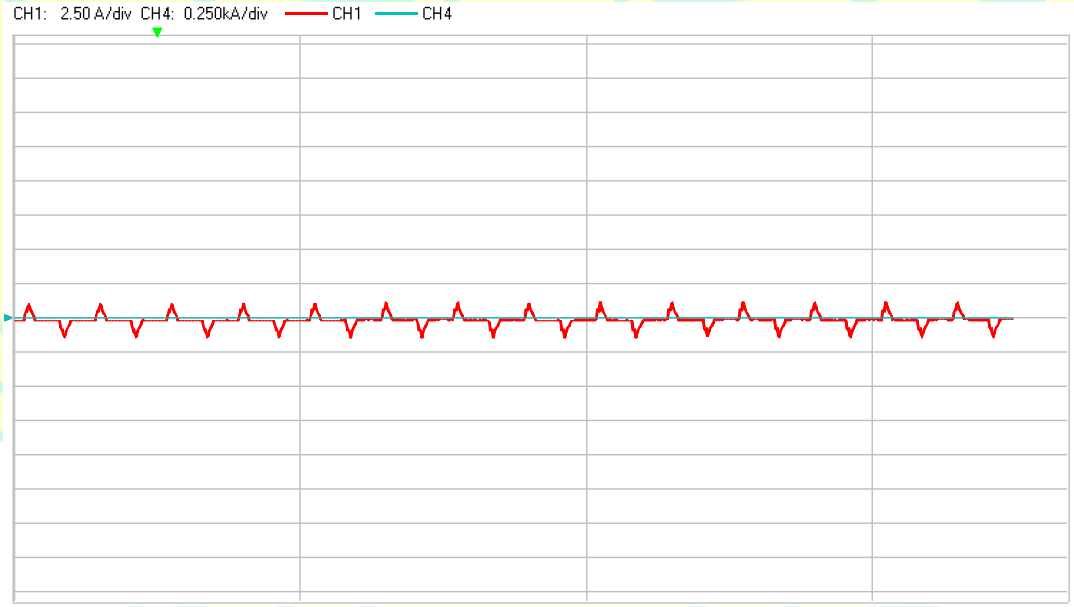
Event Voltage/Current Waveform [No.1 02/04 07:31:00.102 Start]





Event Voltage/Current Waveform [No.2 02/04 08:32:22.829 Stop]





MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	
U THD	7.20 %	OFF	
I THD	40.00 %	50.00 %	
Hharm U Component	OFF	OFF	
Hharm I Component	OFF	OFF	
U RevPhaseUnbalance	OFF		
I RevPhaseUnbalance	OFF		

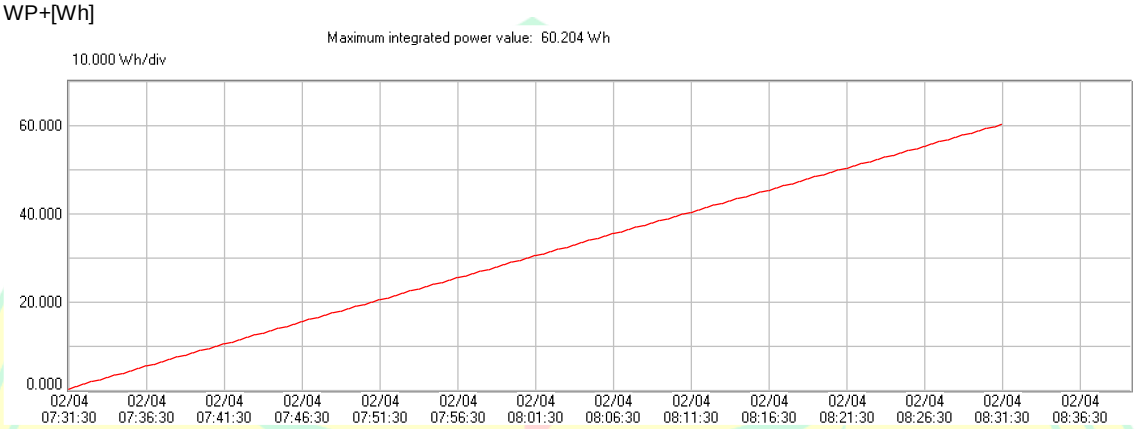
U 0PhaseUnbalance OFF
I 0PhaseUnbalance OFF

Integrated Power Analysis

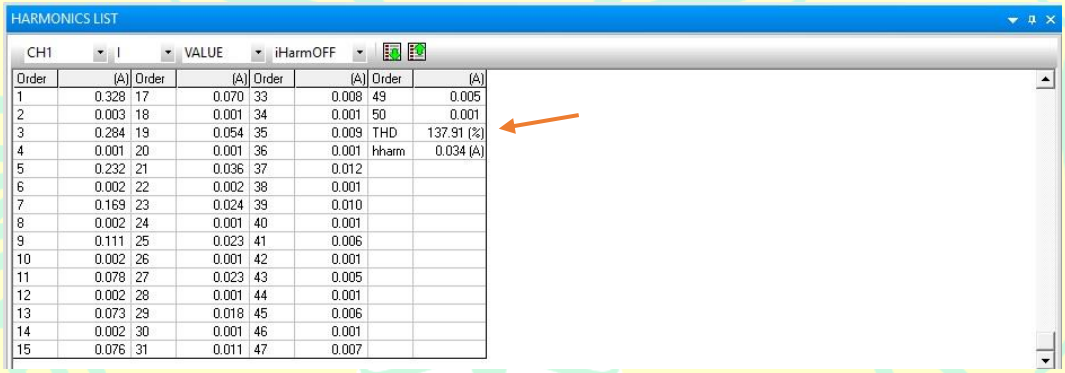
Page 9
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\70 watt\B0020400

2020/02/04 07:31:30 - 2020/02/04 08:32:00

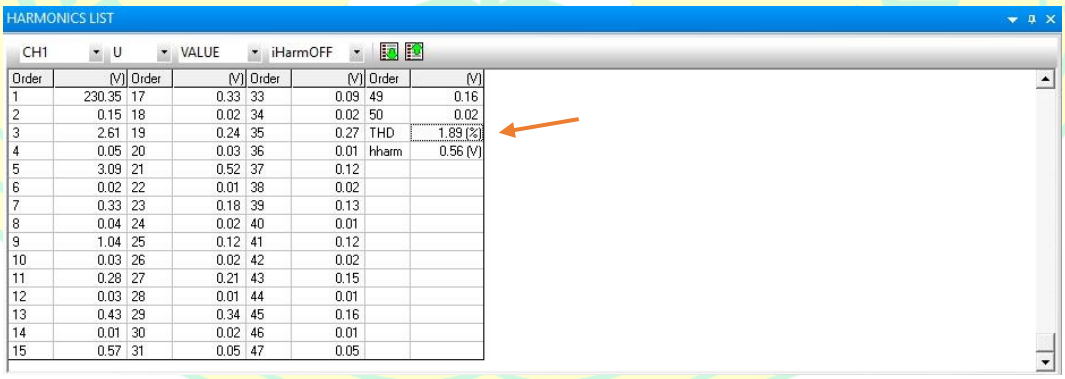
WP+[Wh]



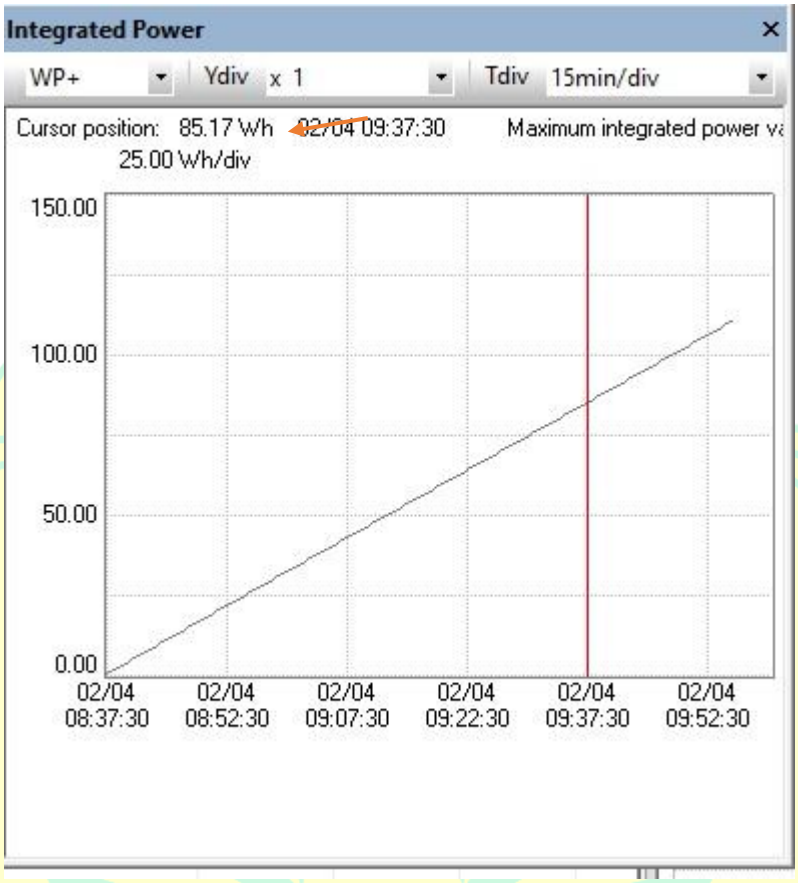
Lampiran 11 Hasil Penelitian Beban Non Linier 100 Watt



Order	(A)	Order	(A)	Order	(A)	Order	(A)
1	0.328	17	0.070	33	0.008	49	0.005
2	0.003	18	0.001	34	0.001	50	0.001
3	0.284	19	0.054	35	0.009	THD	137.91 (%)
4	0.001	20	0.001	36	0.001	hharm	0.034 (A)
5	0.232	21	0.036	37	0.012		
6	0.002	22	0.002	38	0.001		
7	0.169	23	0.024	39	0.010		
8	0.002	24	0.001	40	0.001		
9	0.111	25	0.023	41	0.006		
10	0.002	26	0.001	42	0.001		
11	0.078	27	0.023	43	0.005		
12	0.002	28	0.001	44	0.001		
13	0.073	29	0.018	45	0.006		
14	0.002	30	0.001	46	0.001		
15	0.076	31	0.011	47	0.007		



Order	(V)	Order	(V)	Order	(V)	Order	(V)
1	230.35	17	0.33	33	0.09	49	0.16
2	0.15	18	0.02	34	0.02	50	0.02
3	2.61	19	0.24	35	0.27	THD	1.89 (%)
4	0.05	20	0.03	36	0.01	hharm	0.56 (V)
5	3.09	21	0.52	37	0.12		
6	0.02	22	0.01	38	0.02		
7	0.33	23	0.18	39	0.13		
8	0.04	24	0.02	40	0.01		
9	1.04	25	0.12	41	0.12		
10	0.03	26	0.02	42	0.02		
11	0.28	27	0.21	43	0.15		
12	0.03	28	0.01	44	0.01		
13	0.43	29	0.34	45	0.16		
14	0.01	30	0.02	46	0.01		
15	0.57	31	0.05	47	0.05		

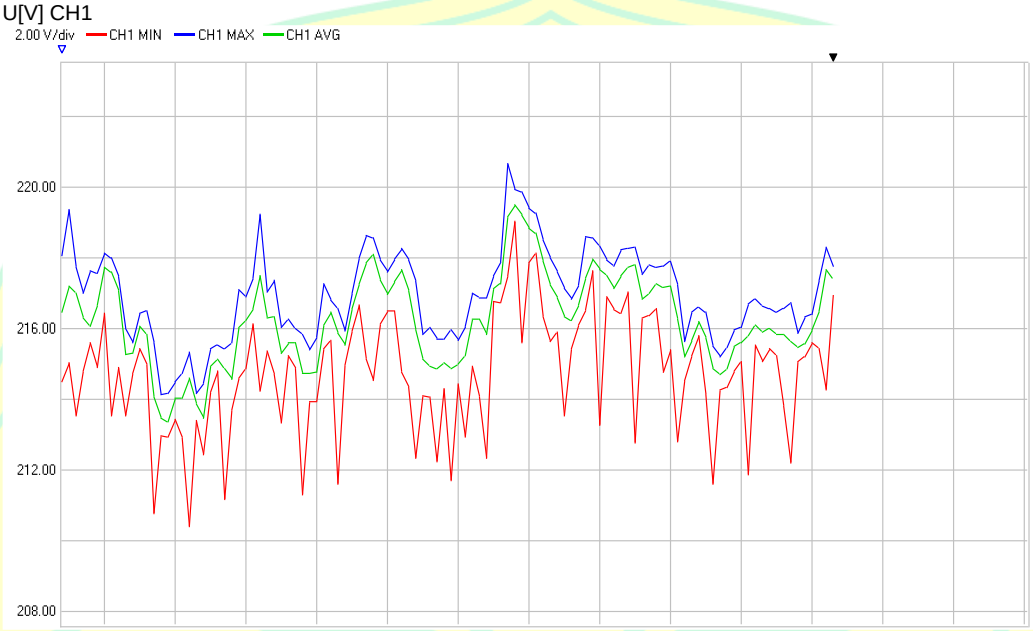


Time Plot
Graph

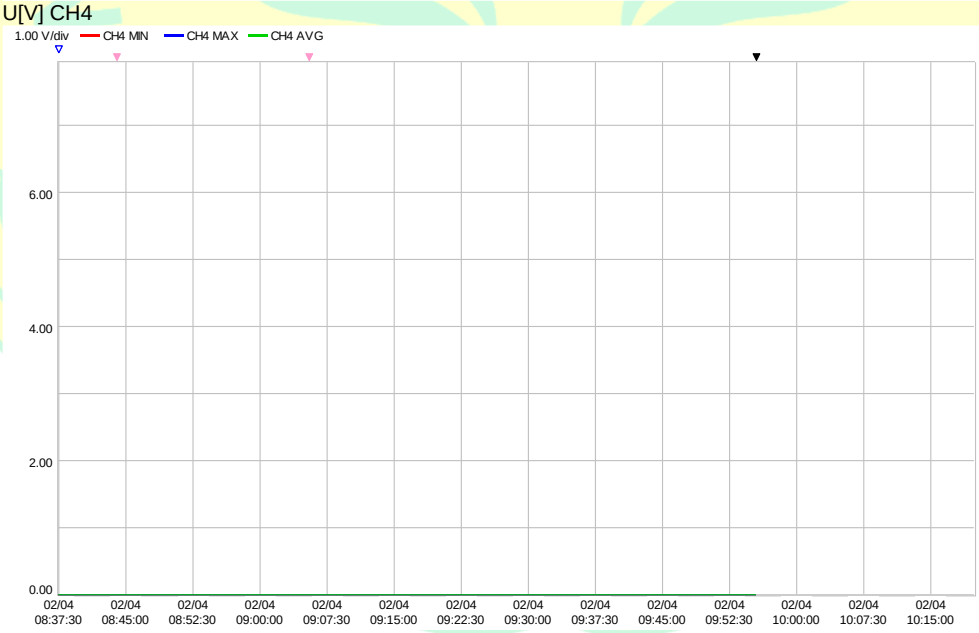
06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\100 watt\B0020400

2020/02/04 08:37:30 - 2020/02/04 09:55:30

U[V] CH1



U[V] CH4

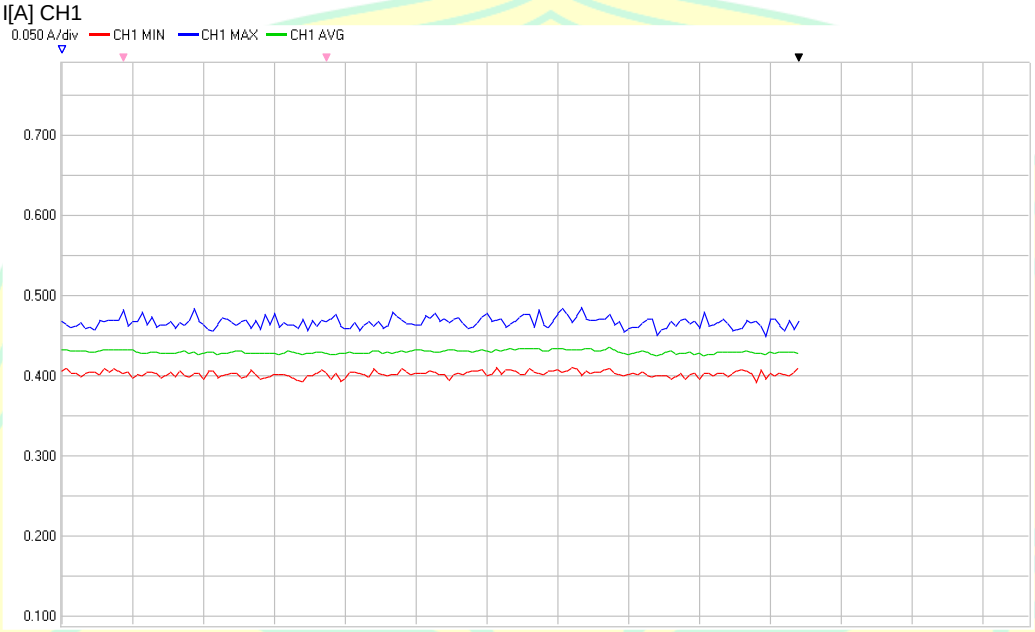


Time Plot
Graph

06/02/2020 D:\PENELITIAN PAK FATUR\PENELITIAN FATUR 1\Penelitian ACC\non linier\100 watt\B0020400

2020/02/04 08:37:30 - 2020/02/04 09:55:30

I[A] CH1



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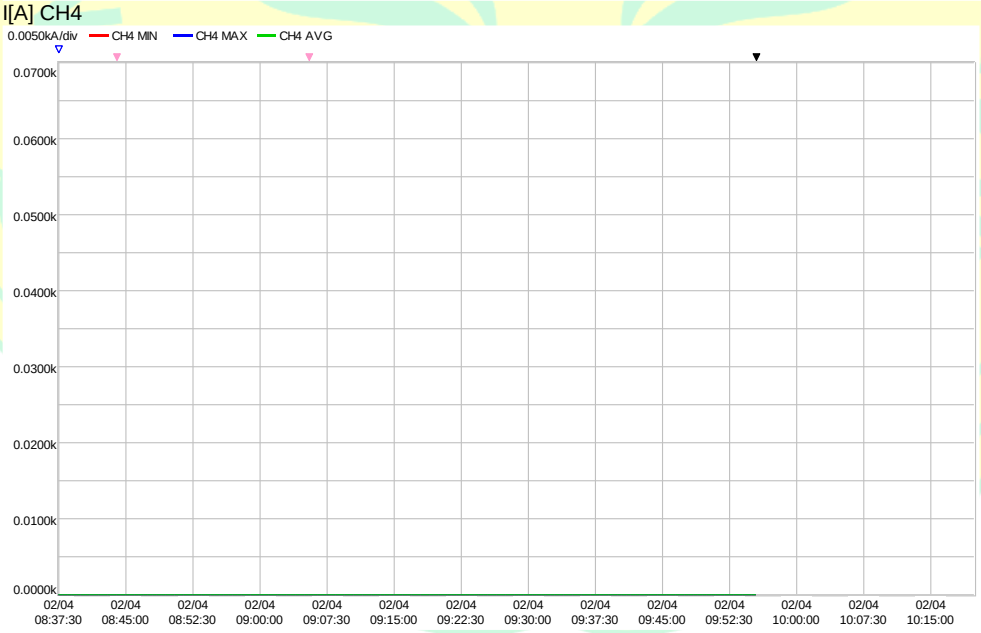
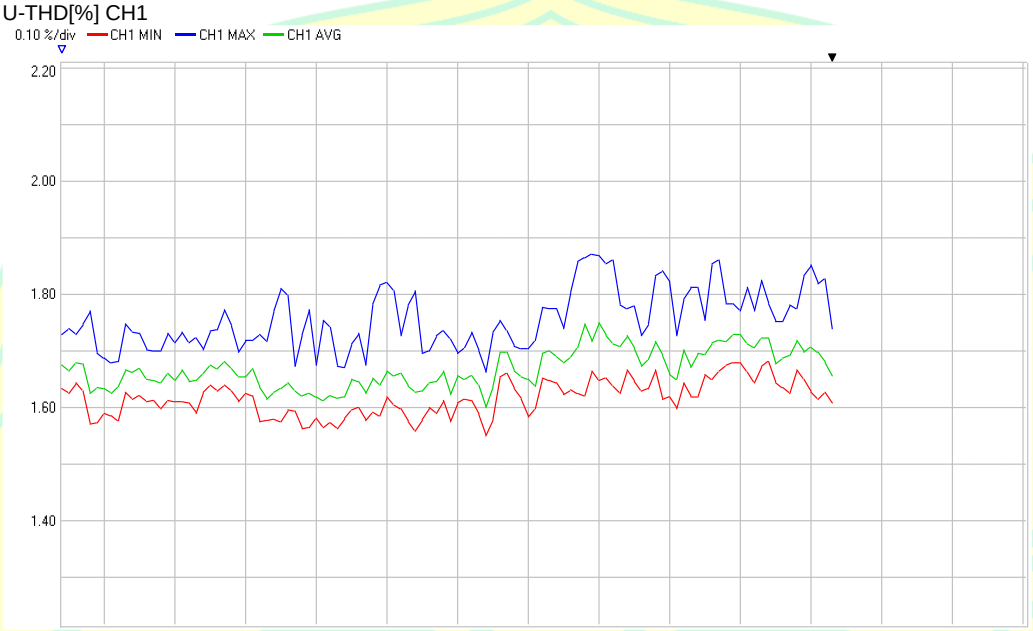


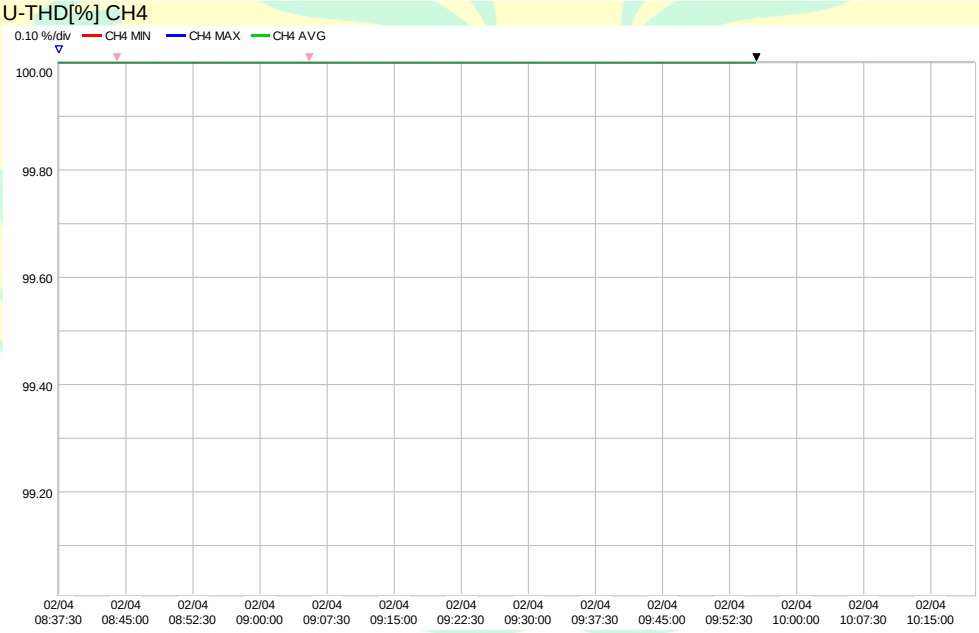
U-
THD

2020/02/04 08:37:30 - 2020/02/04 09:55:30

U-THD[%] CH1



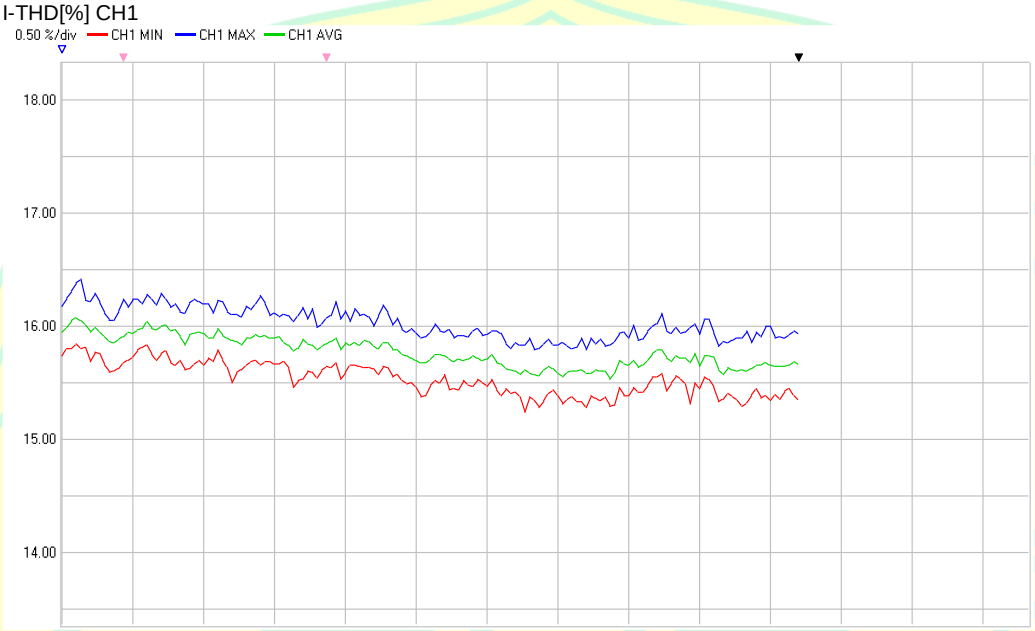
U-THD[%] CH4



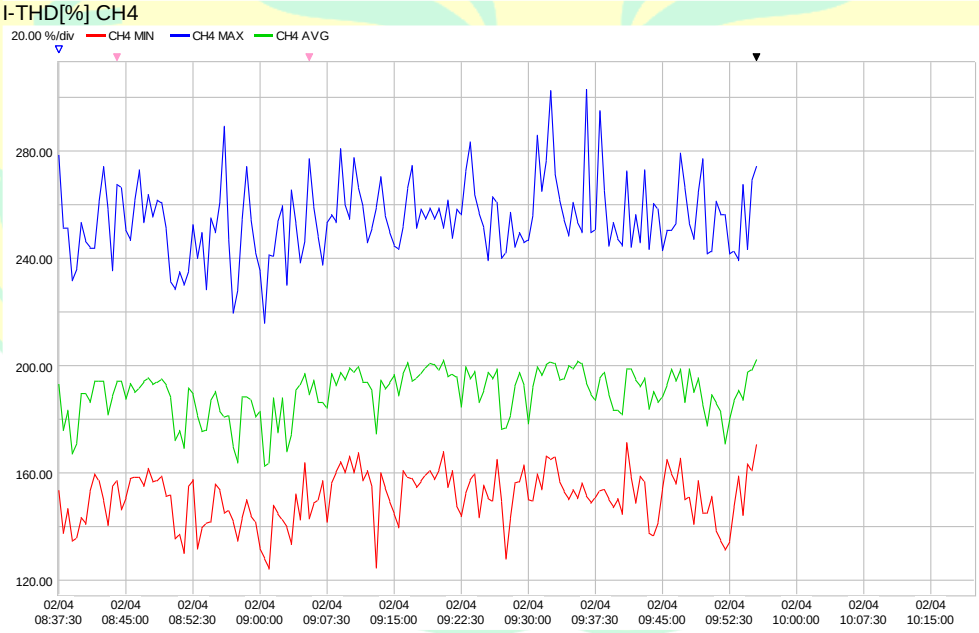
I-
THD

2020/02/04 08:37:30 - 2020/02/04 09:55:30

I-THD[%] CH1



I-THD[%] CH4



No. 1: 2020/02/04 08:37:00.030, Start, WDU

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 08:37:00.020	Dip	CH1	IN	
2020/02/04 08:37:00.030	Ithd	CH4	IN	
2020/02/04 08:37:00.030	Start			

No. 2: 2020/02/04 08:43:52.955, Wave, CH1

Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 08:43:52.955	Wave	CH1		

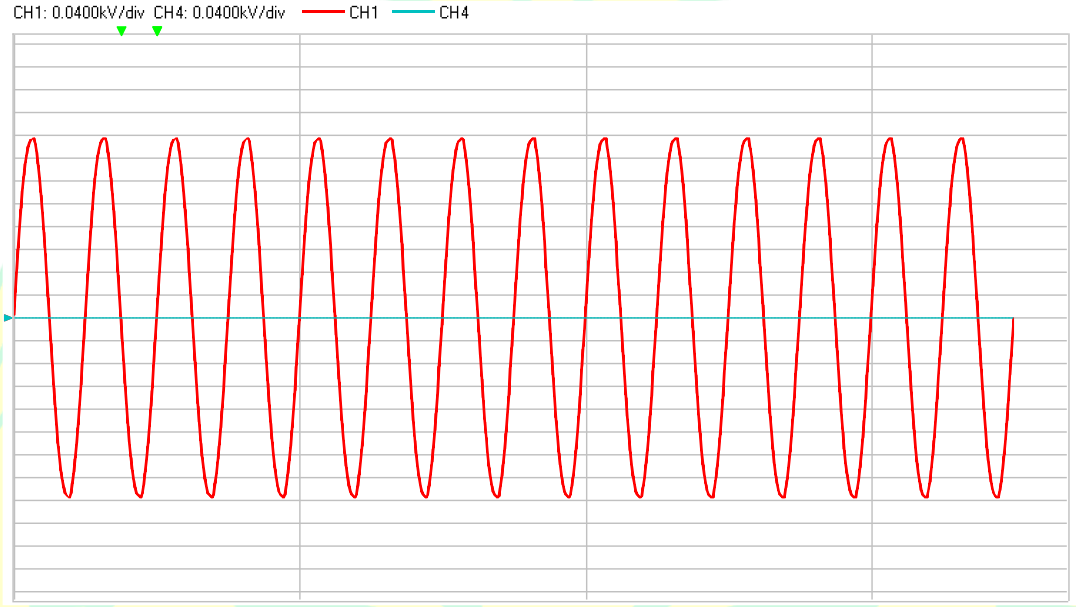
No. 3: 2020/02/04 09:05:10.286, Wave, CH1

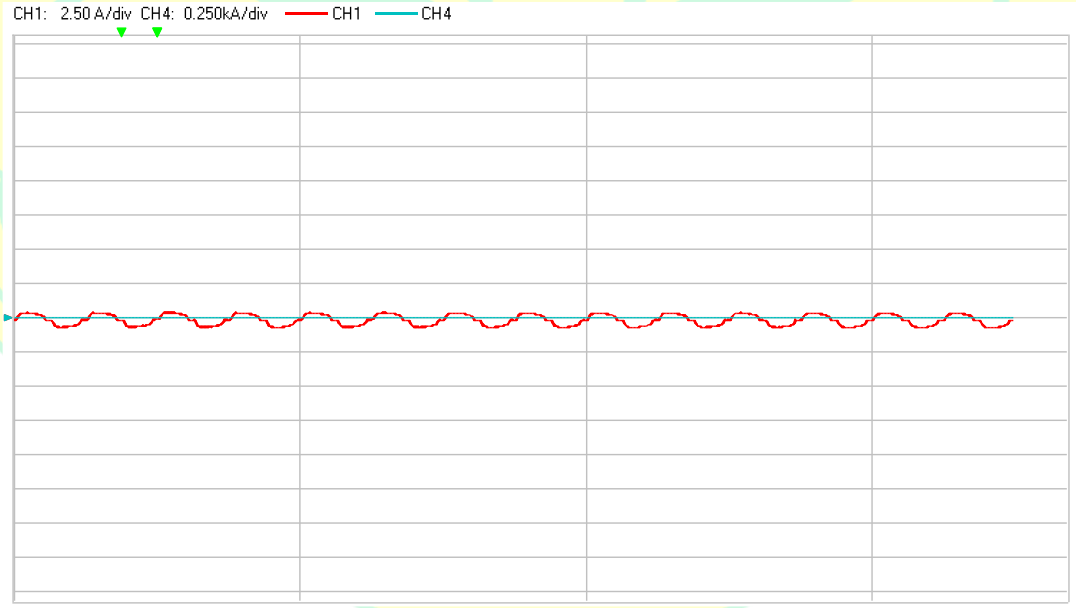
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 09:05:10.286	Wave	CH1		

No. 4: 2020/02/04 09:55:45.840, Stop

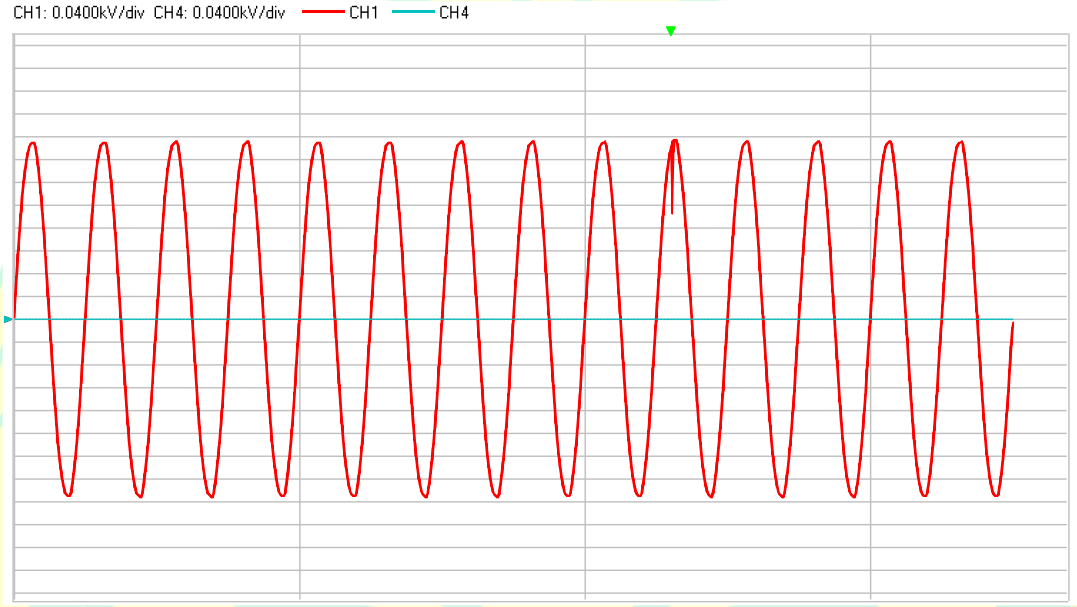
Date Time	Event Item	ch	IN/OUT	Data
2020/02/04 09:55:45.840	Stop			

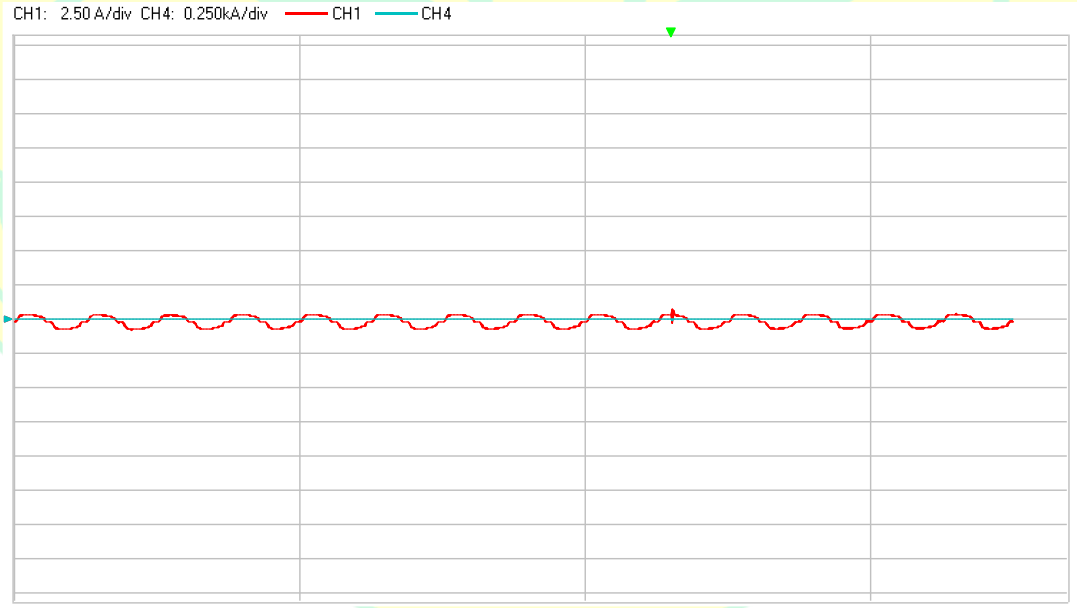
Event Voltage/Current Waveform [No.1 02/04 08:37:00.030 Start]



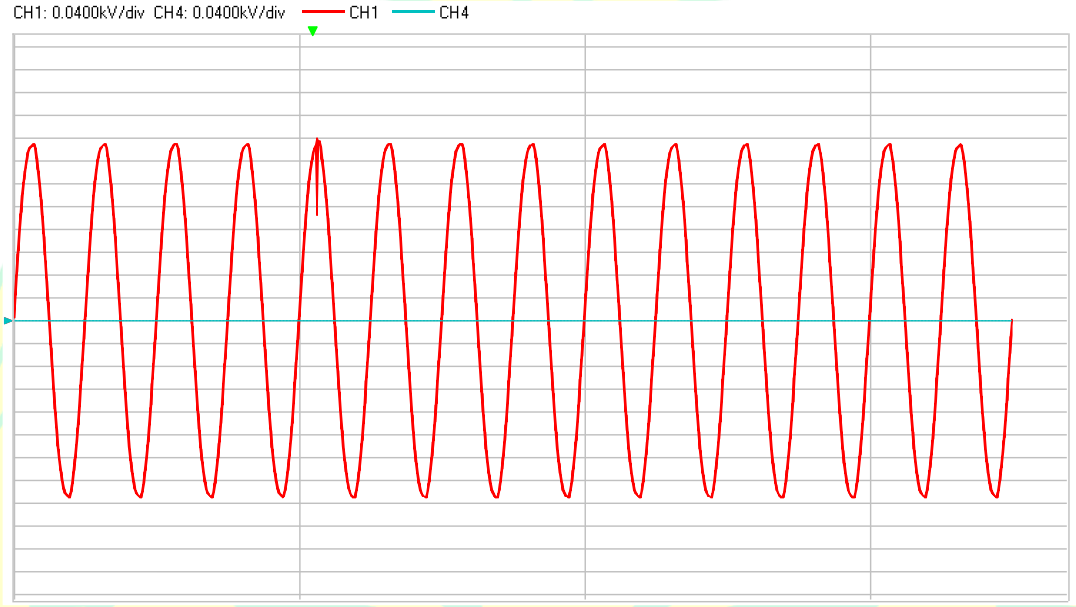


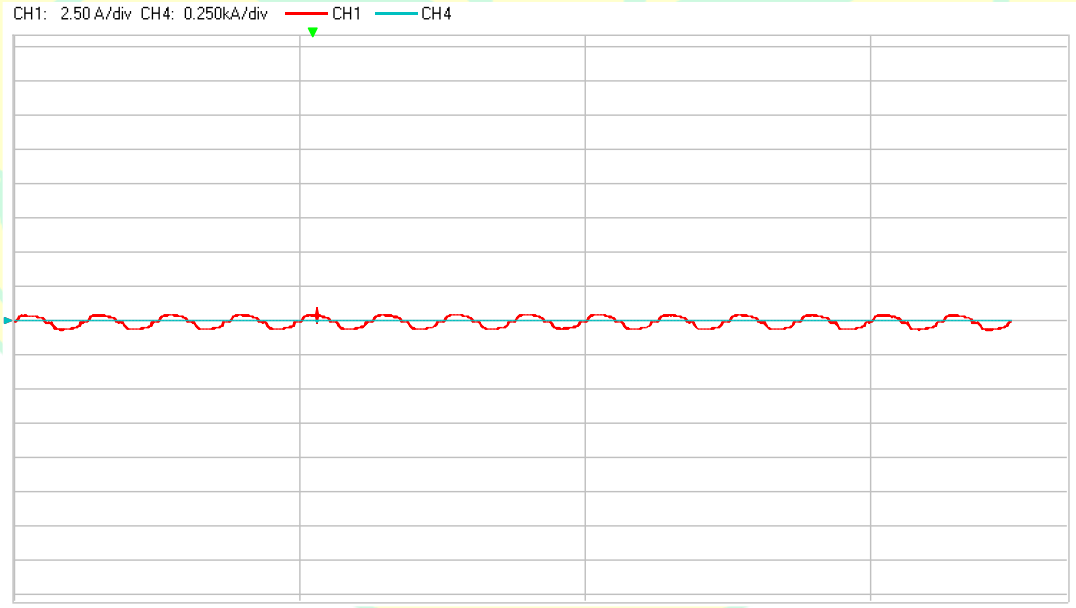
Event Voltage/Current Waveform [No.2 02/04 08:43:52.955 Wave CH1]



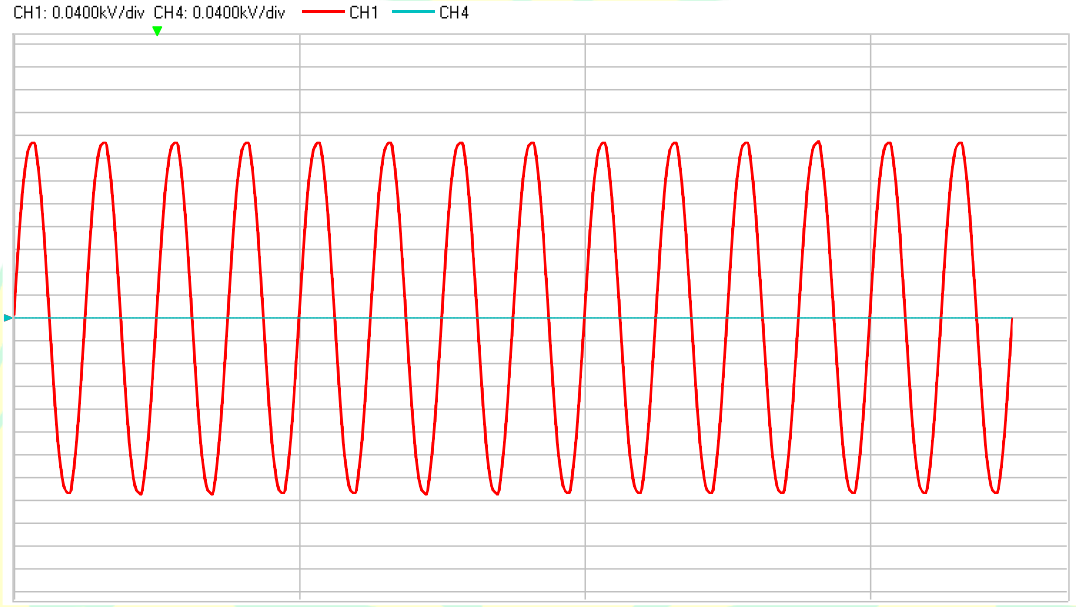


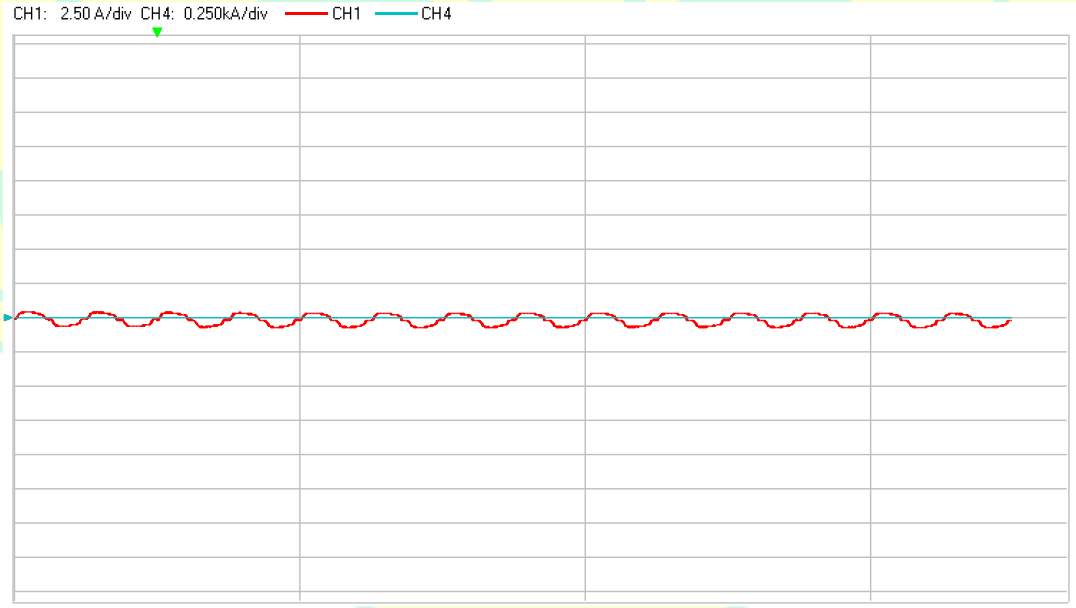
Event Voltage/Current Waveform [No.3 02/04 09:05:10.286 Wave CH1]





Event Voltage/Current Waveform [No.4 02/04 09:55:45.840 Stop]





MEASURE

	123ch	4ch
Wiring	1P2W	ACDC
Clamp	CT9667(500A)	CT9667(5kA)
U Range	600.00 V	600.00 V
PT Ratio	0001.00	0001.00
I Range	50.000 A	5.0000kA
CT Ratio	0001.00	0001.00
U din	415.00 V	
Frequency	50Hz	
Sync Source	U1	
URMS Type	PHASE-N	
Harm Calc	U,I,P:ALL Levels	
THD Type	THD_F	
PF Type	PF	
Flicker	Plt,Pst	
Flicker Filter	230V Ed1	
Recording Items	ALL DATA	
TIME PLOT Interval	30 sec	
Disp COPY Interval	OFF	
Time Start	OFF	
Repeat Record	OFF	
Serial No.	160537103	
PW3198 Version	1.07	

EVENT VOLTAGE

	123ch	4ch
U Transient	0.2800kV	0.2800kV
Slide	OFF	
Urms Swell	110.00 %	
Urms Dip	90.00 %	
U Interrupt	10.00 %	
Frequency	OFF	
Frequency 1Wave	OFF	
Compare U Wave	20.0%	
Timer Event	OFF	
External Event	OFF	
Continuous Event	OFF	
Hysteresis	1.000 %	

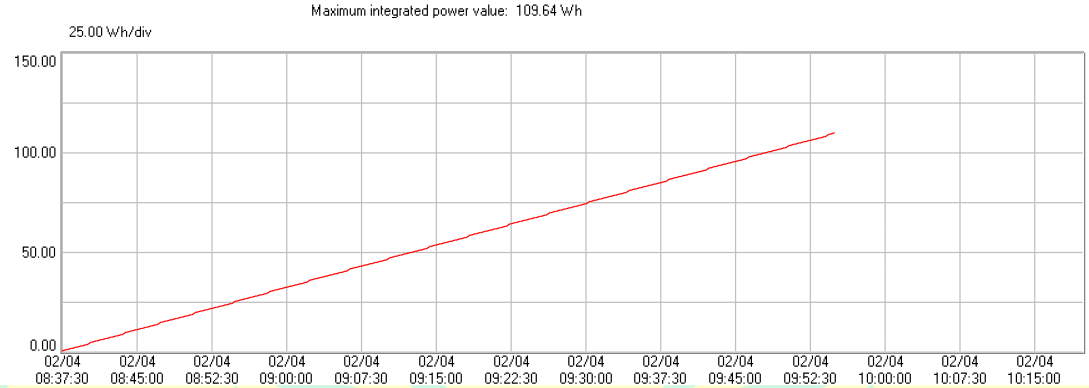
EVENT POWER

	123ch	4ch	SENSE
U RMS High	OFF	30.00 V	
U RMS Low	OFF	0.00 V	
U RMS (SENSE)	OFF	10.00 V	
Inrush Current	OFF	OFF	
I RMS	OFF	0.0000kA	
I RMS(sense)	OFF	OFF	
U Peak	0.8300kV	0.0300kV	
U DC Change		OFF	
I Peak	OFF	0.050kA	
I DC Change		OFF	
Active Power P	OFF	OFF	
Reactive Power Q	OFF	OFF	
Apparent power S	OFF	OFF	
Power Factor	OFF	OFF	
K Factor	OFF	OFF	

U THD	7.20 %	OFF
I THD	40.00 %	50.00 %
Hharm U Component	OFF	OFF
Hharm I Component	OFF	OFF
U RevPhaseUnbalance	OFF	
I RevPhaseUnbalance	OFF	
U 0PhaseUnbalance	OFF	
I 0PhaseUnbalance	OFF	

2020/02/04 08:37:30 - 2020/02/04 09:55:30

WP+[Wh]



DAFTAR RIWAYAT HIDUP

Fajar Faturachman , lahir Bogor pada tanggal 2 Maret 1997 merupakan anak keempat dari empat bersaudara dari pasangan Ibu yang bernama Sumardiyah dan Ayah yang bernama Sukoyo Tinggal di Jl. Sindang Barang Pilar 1 Rt. 03/07 Bogor Barat.

Pendidikan formal yang ditempuh : Sekolah Dasar Negeri (SDN) 03 Sindang Barang Bogor, lulus pada tahun 2009, Sekolah Menengah Pertama Negeri (SMPN) 7 Bogor lulus pada tahun 2012, Sekolah Menengah Atas Negeri (SMAN) 6 Bogor, lulus pada tahun 2015. Diterima di Universitas Negeri Jakarta (UNJ) pada tahun 2015 melalui jalur Mandiri, pada Program Studi Pendidikan Teknik Elektro, Fakultas Teknik.

Selama perkuliahan telah melaksanakan pengalaman Praktik Kerja Lapangan (PKL) di PT. Nusapala selama 1 bulan, dan Praktik Keterampilan Mengajar (PKM) di SMK Bunda Kandung pada bulan Agustus sampai Desember 2018. Selama pendidikan juga penulis aktif dalam organisasi Badan Eksekutif Mahasiswa Prodi dan juga sebagai Duta Universitas Negeri Jakarta.