

## LAMPIRAN

### 7.1 Spesifikasi Komputer

No.	Komponen	Keterangan	Parameter yang Diubah
1	Prosesor	Intel i7-7700K <ul style="list-style-type: none"> <li>• Frekuensi standar 4,2 GHz</li> <li>• Frekuensi turbo 4,5 GHz</li> <li>• Rating daya 91 Watt</li> </ul>	<ul style="list-style-type: none"> <li>• Frekuensi dasar 100 MHz</li> <li>• Faktor pengali frekuensi 49</li> <li>• Tegangan <i>core</i> 1,4 Volt</li> <li>• Tegangan VCCIO 1,2 Volt</li> <li>• Tegangan <i>system agent</i> 1,225 Volt</li> </ul>
2	Kartu Grafis	MSI GTX 780 TI Lightning MOA Edition <ul style="list-style-type: none"> <li>• Frekuensi <i>core</i> 1608 MHz</li> <li>• Frekuensi memori 3500 MHz</li> <li>• Rating daya (standar) 250 Watt</li> </ul>	<ul style="list-style-type: none"> <li>• Mode operasi LN2</li> <li>• Rating daya (LN2) &gt;900 Watt<sup>1)2)</sup></li> </ul>
3	Memori	<ul style="list-style-type: none"> <li>• Slot 1: Corsair Vengeance LPX DDR4 8 GB 2400 MHz</li> <li>• Slot 2:</li> </ul>	<ul style="list-style-type: none"> <li>• Tegangan DRAM 1,3 Volt</li> <li>• Frekuensi DRAM 2700 MHz</li> </ul>

		Corsair Vengeance LPX DDR4 16 GB 2400 MHz	
4	<i>Boot Device</i>	Samsung M.2 SSD 960 Evo 250 GB	
5	<i>Storage Device</i>	Seagate Momentus Slim 2,5 inch HDD 500 GB 5400 RPM	
6	Motherboard	ASUS-Republic Of Gamers Maximus IX Apex <ul style="list-style-type: none"> <li>• Versi BIOS 0906</li> <li>• Chipset Intel Z270</li> </ul>	<ul style="list-style-type: none"> <li>• <i>CPU Load-line Calibration Level 5<sup>3)</sup></i></li> </ul>
7	Catu Daya	Corsair HX850 <ul style="list-style-type: none"> <li>• Rating daya 850 Watt</li> <li>• Efisiensi 96% (80+ Platinum)</li> </ul>	

- 1) Tidak ada informasi resmi.
- 2) Dengan penambahan kecepatan dan sistem pendingin yang sesuai.
- 3) Kompensasi drop tegangan prosesor saat beban penuh. Terdapat 7 level, level 1 menghasilkan drop tegangan yang masih besar sedangkan level 7 menghasilkan drop tegangan minimum.

## 7.2 Tabel Data Temperatur pada Pengujian Stabilitas

- 1) Temperatur Prosesor dan Kartu Grafis dengan Sistem Pendingin AIO *water cooler* dan *Heatsink*

No.	timestamp	CPU Package (°C)	GPU Temp (°C)
1	9/15/2018 8:08	58	68
2	9/15/2018 8:09	70	74
3	9/15/2018 8:10	57	75
4	9/15/2018 8:11	61	77
5	9/15/2018 8:12	59	76
6	9/15/2018 8:13	50	76
7	9/15/2018 8:14	65	76
8	9/15/2018 8:15	49	77
9	9/15/2018 8:16	55	76
10	9/15/2018 8:17	58	76
11	9/15/2018 8:18	57	76
12	9/15/2018 8:19	63	76
13	9/15/2018 8:20	56	76
14	9/15/2018 8:21	56	76
15	9/15/2018 8:22	71	76
16	9/15/2018 8:23	63	76
17	9/15/2018 8:24	61	77
18	9/15/2018 8:25	59	76
19	9/15/2018 8:26	60	77
20	9/15/2018 8:27	72	76
21	9/15/2018 8:28	66	76
22	9/15/2018 8:29	55	76
23	9/15/2018 8:30	57	76
24	9/15/2018 8:31	55	76
25	9/15/2018 8:32	62	76
26	9/15/2018 8:33	54	77
27	9/15/2018 8:34	62	76
28	9/15/2018 8:35	62	76
29	9/15/2018 8:36	66	77
30	9/15/2018 8:37	60	76
31	9/15/2018 8:38	67	76
32	9/15/2018 8:39	58	77
33	9/15/2018 8:40	56	76
34	9/15/2018 8:41	78	76
35	9/15/2018 8:42	54	77
36	9/15/2018 8:43	57	77
37	9/15/2018 8:44	69	76
38	9/15/2018 8:45	59	77
39	9/15/2018 8:46	65	77
40	9/15/2018 8:47	50	76
41	9/15/2018 8:48	55	77
42	9/15/2018 8:49	69	77
43	9/15/2018 8:50	69	77
44	9/15/2018 8:51	50	76
45	9/15/2018 8:52	57	76
46	9/15/2018 8:53	69	77
47	9/15/2018 8:54	66	77

48	9/15/2018 8:55	50	77
49	9/15/2018 8:56	62	77
50	9/15/2018 8:57	53	76
51	9/15/2018 8:58	65	77
52	9/15/2018 8:59	64	77
53	9/15/2018 9:00	60	76
54	9/15/2018 9:01	55	77
55	9/15/2018 9:02	67	77
56	9/15/2018 9:03	68	76
57	9/15/2018 9:04	58	77
58	9/15/2018 9:05	52	77
59	9/15/2018 9:06	66	77
60	9/15/2018 9:07	55	77
	Average	60.36666667	76.25

2) Temperatur Prosesor dan Kartu Grafis dengan Sistem Pendingin Komputer berbasis *Hybrid Cooling Engine*

No.	timestamp	CPU Package (°C)	GPU Temp (°C)
1	9/30/2018 7:36	57	43
2	9/30/2018 7:37	74	46
3	9/30/2018 7:38	56	48
4	9/30/2018 7:39	67	50
5	9/30/2018 7:40	61	51
6	9/30/2018 7:41	67	52
7	9/30/2018 7:42	58	53
8	9/30/2018 7:43	63	54
9	9/30/2018 7:44	74	54
10	9/30/2018 7:45	76	55
11	9/30/2018 7:46	73	55
12	9/30/2018 7:47	76	56
13	9/30/2018 7:48	77	56
14	9/30/2018 7:49	68	56
15	9/30/2018 7:50	81	56
16	9/30/2018 7:51	71	56
17	9/30/2018 7:52	77	57
18	9/30/2018 7:53	66	57
19	9/30/2018 7:54	76	57
20	9/30/2018 7:55	72	57
21	9/30/2018 7:56	78	57
22	9/30/2018 7:57	69	57
23	9/30/2018 7:58	67	57
24	9/30/2018 7:59	86	57
25	9/30/2018 8:00	74	57
26	9/30/2018 8:01	65	57
27	9/30/2018 8:02	64	58
28	9/30/2018 8:03	80	57
29	9/30/2018 8:04	67	57
30	9/30/2018 8:05	64	57
31	9/30/2018 8:06	79	57
32	9/30/2018 8:07	73	57
33	9/30/2018 8:08	65	57

34	9/30/2018 8:09	81	58
35	9/30/2018 8:10	66	58
36	9/30/2018 8:11	75	57
37	9/30/2018 8:12	81	57
38	9/30/2018 8:13	78	58
39	9/30/2018 8:14	78	58
40	9/30/2018 8:15	82	58
41	9/30/2018 8:16	77	58
42	9/30/2018 8:17	78	58
43	9/30/2018 8:18	71	58
44	9/30/2018 8:19	67	58
45	9/30/2018 8:20	63	58
46	9/30/2018 8:21	84	58
47	9/30/2018 8:22	71	58
48	9/30/2018 8:23	67	58
49	9/30/2018 8:24	70	58
50	9/30/2018 8:25	78	58
51	9/30/2018 8:26	69	58
52	9/30/2018 8:27	77	58
53	9/30/2018 8:28	84	58
54	9/30/2018 8:29	75	58
55	9/30/2018 8:30	67	58
56	9/30/2018 8:31	80	58
57	9/30/2018 8:32	63	58
58	9/30/2018 8:33	65	58
59	9/30/2018 8:34	67	57
60	9/30/2018 8:35	76	58
	Average	71.85	56.23333333

### 7.3 Dokumentasi Alat



Gambar 7.1. Sistem Pendingin AIO Water Cooler



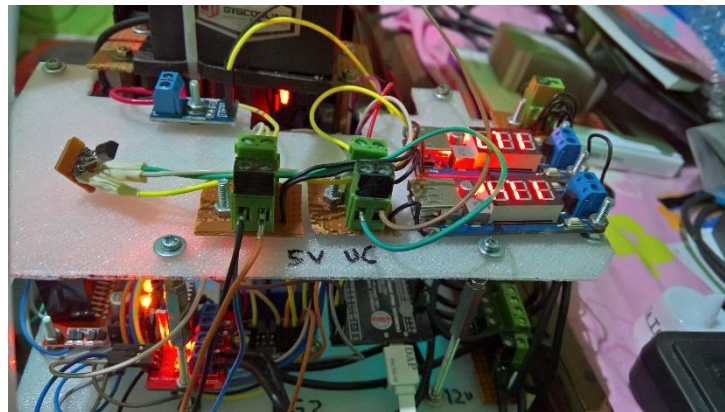
Gambar 7.2. *Heatsink* Kartu Grafis



Gambar 7.3. Pengujian Beban Nol



Gambar 7.4. Radiator dan *Water Block* Prosesor



Gambar 7.5. Sistem Pengendali Temperatur



Gambar 7.6. Tes *Benchmarking* Unigine Superposition



Gambar 7.7. Konsumsi Daya Maksimum Komputer dan Sistem Pendingin