
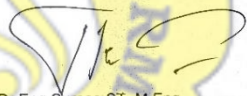


## LAMPIRAN

### Lampiran 1. Surat Perintah Kerja

	<b>KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI</b> <b>UNIVERSITAS JENDERAL SOEDIRMAN</b> <b>FAKULTAS TEKNIK</b> <b>JURUSAN TEKNIK ELEKTRO</b> Jl. Mayjend Sungkono KM 05 Blater Purbalingga Telp/Fax. (0281) 6596700, 6596689 E-mail : ft@unsoed.ac.id
<hr/>	
<b>SURAT PERINTAH KERJA</b> <b>NOMOR : 2841/UN23.08.6.01/PP.05.02/2018</b>	
Wakil Dekan Bidang Akademik Fakultas Teknik Universitas Jenderal Soedirman dengan ini menyatakan bahwa mahasiswa tersebut di bawah ini :	
Nama	: HANDY YUSUF FAUZAN
Nim	: H1C014028
Program studi	: Teknik Elektro
akan memulai Tugas Akhir pada tanggal 19 Oktober 2018 (Semester Gasal 2018/2019) dengan Topik dan Dosen Pembimbing terlampir.	
Surat Perintah Kerja Tugas Akhir ini harus selesai maksimal dua ( 2 ) semester / di hitung sejak tanggal di mulainya Tugas Akhir ( sejak dikeluarkanya SPK Tugas Akhir ).	
Purbalingga, 19 Oktober 2018 Ketua Jurusan Teknik Elektro	
 Dr. Eng Suroso ST, M. Eng NIP.19781224 200112 1 002	

(Rangkap 3: Bapendik, Dosen Pembimbing, Mahasiswa)

D:\SPK dan sminar TI\SPK TA EL, GEO, SIP\SPK TA EL\SURAT PERINTAH KERJA.doc

Lampiran : DAFTAR MAHASISWA TUGAS AKHIR  
LAMPIRAN SURAT NOMOR : 2841/UN23.08.6.01/PP.05.02/2018

No	Nama	Nim	Dosen Pembimbing	Waktu	Topik
1.	HANDY YUSUF FAUZAN	H1C014028	1. Eko Muryantoro, ST., MT NIP. 197805112009121002 2. Imron Rosyadi, ST., MSc NIP. 197909242003121003 3. NIP.	19 Oktober 2018 (Semester Gasa 2018/2019)	Studi Analisis Pengaruh Antena YAGI Terhadap Performansi Jarak Dari LoRa DRAGINO 915 MHz

Purbalingga, 19 Oktober 2018  
Ketua Jurusan Teknik Elektro

Dr. Eng. Suroso ST, M. Eng.  
NIP. 19781224 200112 1 002



KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI  
UNIVERSITAS JENDERAL SOEDIRMAN  
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Jl. Mayjend Sungkono KM 05 Blater Purbalingga Telp/Fax. (0281) 6596700, 6596689  
E-mail : ft@unsoed.ac.id

**SURAT TUGAS PEMBIMBING TUGAS AKHIR**  
**NOMOR : 2842/UN23.08.6.01/PP.05.02/2018**

Wakil Dekan Bidang Akademik Fakultas Teknik Universitas Jenderal Soedirman menugaskan Saudara :

Pembimbing I :  
Nama : Eko Murdiyantoro, ST., MT  
NIP : 197805112009121002

Pembimbing II :  
Nama : Imron Rosyadi, ST., MSc  
NIP : 197909242003121003

Pembimbing III :  
Nama :  
NIP :

untuk membimbing Tugas Akhir dalam Lampiran 1. Tugas dosen pembimbing adalah mengarahkan mahasiswa dalam mempersiapkan, melaksanakan dan menguji tugas akhir.

Surat tugas ini berlaku selama jangka waktu 2 semester sejak dikeluarkannya surat ini.

Purbalingga, 19 Oktober 2018  
Ketua Jurusan Teknik Elektro

*[Signature]*  
Dr. Eng Suroso, ST., M. Eng  
NIP. 19781224 200112 1 002

Tembusan : (Rangkap 3 : Bapendik, Dosen Pembimbing, Mahasiswa)

LAMPIRAN SURAT NOMOR :2842/JUN23.08.6.01/PP.05.02/2018  
DAFTAR MAHASISWA TUGAS AKHIR

No	Nama	Nim	Waktu	Topik
1.	HANDY YUSUF FAUZAN	H1C014028	19 Oktober 2018 (Semester Gasal2018/2019)	Studi Analisis Pengaruh Antena YAGI Terhadap Performansi Jarak Dan Lora DRAGINO 915 MHz

Purbalingga, 19 Oktober 2018  
Ketua Jurusan Teknik Elektro

Dr.Eng Suroso ST, M.Eng  
NIP.19781224 200112 1 002

## Lampiran 2. Datasheet OLG01


**DRAGINO**

# Open Source Outdoor LoRa Gateway

## OLG01






### OVERVIEW:

The OLG01 is an open source single channel LoRa Gateway. It lets you bridge LoRa wireless network to an IP network via WiFi, Ethernet, 3G or 4G cellular.

OLG01 has WiFi interface, Ethernet port and USB host port. These interfaces provide flexible methods for users to connect their sensor networks to Internet.

OLG01 runs Open Source OpenWrt system, user are free to modify the source file or compile the system to support their customized applications.

### Features:

- Open Source OpenWrt system
- Low power consumption
- Firmware upgrade via Web
- Software upgradable via network
- Auto-Provisioning
- Built-in web server
- Managed by Web GUI, SSH via LAN or WiFi
- Support WiFi AP, Client or Ad-Hoc(Mesh) mode
- Internet connection via LAN, WiFi, 3G or 4G
- Failsafe design provides robustly system
- LoRa band available at 433/868/915/920 Mhz
- SMA connector for external LoRa antenna
- 12dBi WiFi directional antenna
- Passive PoE Interface
- Weather proof enclosure

### Specifications:

**Linux Side:**

- Processor: 400MHz, 24K MIPS
- Flash: 16MB ; RAM: 64MB

**MCU/LoRa Side:**

- MCU: ATmega328P
- Flash: 32KB, RAM: 2KB
- LoRa Chip: SX2176/78

**Interfaces:**

- 10M/100M RJ45 Ports x 2
- WiFi : 802.11 b/g/n
- LoRa Wireless
- Power Input: 12V DC
- USB 2.0 host internal interface x 1

**Dragino Technology Co., Limited**  
Room 7009, Zi'An Commercial Building, Qian Jin 1 Road,  
Xin'An 6th District, Bao'an District ; Shenzhen 518101, China  
Direct: +86 755 86610829 | Fax: +86 755 86647123

**WWW.DRAGINO.COM**  
sales@dragino.com



### Lampiran 3. Sketsa Program

#### Sketsa Program pada *Client* Arduino

```

/*
  LoRa Simple Client for Arduino :
  Support Devices: LoRa Shield + Arduino

  User need to use the modified RadioHead library from:
  https://github.com/dragino/RadioHead

  modified 16 11 2016
  by Edwin Chen <support@dragino.com>
  Dragino Technology Co., Limited

  modified 11 11 2018
  by Handy Yusuf Fauzan
  Universitas Jenderal Soedirman
*/
#include <SPI.h>
#include <RH_RF95.h>
#define REG_OP_MODE 0x01
// Singleton instance of the radio driver
RH_RF95 rf95;
float frequency = 915.0;

void setup()
{
  REG_OP_MODE, 1;
  Serial.begin(9600);
  //while (!Serial) ; // Wait for serial port to be available
  Serial.println("Start LoRa Client");
  if (!rf95.init())
    Serial.println("init failed");

```

```
// Setup ISM frequency
rf95.setFrequency(frequency);

// Setup Power,dBm
rf95.setTxPower(20);

//1
//rf95.setSpreadingFactor(7);
//rf95.setSignalBandwidth(125000);
//rf95.setCodingRate4(5);

//2
//rf95.setSpreadingFactor(7);
//rf95.setSignalBandwidth(500000);
//rf95.setCodingRate4(5);

//3
rf95.setSpreadingFactor(7);
rf95.setSignalBandwidth(31200);
rf95.setCodingRate4(5);
}

void loop()
{
  Serial.println("Sending to LoRa Server");
  // Send a message to LoRa Server
  uint8_t data[] = "Hello, this is device 1";
  rf95.send(data, sizeof(data));

  rf95.waitPacketSent();
  // Now wait for a reply
  uint8_t buf[RH_RF95_MAX_MESSAGE_LEN];
  uint8_t len = sizeof(buf);
```

```
if (rf95.waitForAvailableTimeout(3000))
{
    // Should be a reply message for us now
    if (rf95.recv(buf, &len))
    {
        Serial.print("got reply: ");
        Serial.println((char*)buf);
        Serial.print("RSSI: ");
        Serial.println(rf95.lastRssi(), DEC);
    }
    else
    {
        Serial.println("recv failed");
    }
}
else
{
    Serial.println("No reply, is LoRa server running?");
}
delay(3000);
}
```

The logo of Universitas Jenderal Soedirman is a yellow shield-shaped emblem. It features a central white stylized bird or flame-like symbol. Above the symbol is a grey silhouette of a person's head and shoulders. The text "UNIVERSITAS JENDERAL SOEDIRMAN" is written in a circular path around the central elements. At the bottom of the shield, the year "1963" is displayed between two small stars.



## Sketsa Program pada Gateway Dragino

```

/*
  LoRa Simple Yun Server :
  Support Devices: LG01.

  User need to use the modified RadioHead library from:
  https://github.com/dragino/RadioHead

  modified 16 11 2016
  by Edwin Chen <support@dragino.com>
  Dragino Technology Co., Limited

  modified 11 11 2018
  by Handy Yusuf Fauzan
  Universitas Jenderal Soedirman
*/

//For product: LG01.
#define BAUDRATE 115200
#define REG_OP_MODE 0x01
//If you use Dragino Yun Mesh Firmware , uncomment below lines.
//#define BAUDRATE 250000

#include <Console.h>
#include <SPI.h>
#include <RH_RF95.h>

// Singleton instance of the radio driver
RH_RF95 rf95;

int led = A2;
float frequency = 915.0;
void setup()
{

```

```
REG_OP_MODE, 1;

pinMode(led, OUTPUT);
Bridge.begin(BAUDRATE);
Console.begin();
while (!Console) ; // Wait for console port to be available
Console.println("Start Sketch");
if (!rf95.init())
    Console.println("init failed");
// Setup ISM frequency
rf95.setFrequency(frequency);
// Setup Power, dBm
rf95.setTxPower(20);

//1
//rf95.setSpreadingFactor(7);
//rf95.setSignalBandwidth(125000);
//rf95.setCodingRate4(5);

//2
//rf95.setSpreadingFactor(7);
//rf95.setSignalBandwidth(500000);
//rf95.setCodingRate4(5);

//3
rf95.setSpreadingFactor(7);
rf95.setSignalBandwidth(31200);
rf95.setCodingRate4(5);

Console.print("Listening on frequency: ");
Console.println(frequency);
}

void loop()
{
```

```
if (rf95.available())
{
    // Should be a message for us now
    uint8_t buf[RH_RF95_MAX_MESSAGE_LEN];
    uint8_t len = sizeof(buf);
    if (rf95.recv(buf, &len))
    {
        digitalWrite(led, HIGH);
        RH_RF95::printBuffer("request: ", buf, len);
        Console.print("got request: ");
        Console.println((char*)buf);
        Console.print("RSSI: ");
        Console.println(rf95.lastRssi(), DEC);

        // Send a reply
        uint8_t data[] = "And hello back to you";
        rf95.send(data, sizeof(data));
        rf95.waitPacketSent();
        Console.println("Sent a reply");
        digitalWrite(led, LOW);
    }
    else
    {
        Console.println("recv failed");
    }
}
}
```

#### Lampiran 4. Hasil Pengujian

COM3 (Arduino/Genuino Uno)

---

Start LoRa Client  
Sending to LoRa Server  
got reply: And hello back to you  
RSSI: -84  
10:26:58.212 -> Sending to LoRa Server  
10:26:58.414 -> got reply: And hello back to you  
10:26:58.448 -> RSSI: -83  
10:27:01.427 -> Sending to LoRa Server  
10:27:01.629 -> got reply: And hello back to you  
10:27:01.662 -> RSSI: -82  
10:27:04.633 -> Sending to LoRa Server  
10:27:04.873 -> got reply: And hello back to you  
10:27:04.873 -> RSSI: -80  
10:27:07.851 -> Sending to LoRa Server  
10:27:08.058 -> got reply: And hello back to you  
10:27:08.093 -> RSSI: -77  
10:27:11.063 -> Sending to LoRa Server  
10:27:11.300 -> got reply: And hello back to you  
10:27:11.335 -> RSSI: -80  
10:27:14.298 -> Sending to LoRa Server  
10:27:14.506 -> got reply: And hello back to you  
10:27:14.542 -> RSSI: -80  
10:27:17.524 -> Sending to LoRa Server  
10:27:17.730 -> got reply: And hello back to you

## Lampiran 5. Data Pengujian Antena *Omnidirectional*

### Bandwidth 125 kHz

JARAK 100 m			JARAK 200 m			JARAK 300 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-84 0%		1	-87 0%		1	-	100%
2	-83 0%		2	-87 0%		2	-	100%
3	-82 0%		3	-84 0%		3	-85 0%	
4	-80 0%		4	-83 0%		4	-90 0%	
5	-77 0%		5	-86 0%		5	-90 0%	
6	-80 0%		6	-86 0%		6	-90 0%	
7	-80 0%		7	-86 0%		7	-	100%
8	-80 0%		8	-83 0%		8	-89 0%	
9	-80 0%		9	-81 0%		9	-91 0%	
10	-78 0%		10	-80 0%		10	-90 0%	
11	-78 0%		11	-81 0%		11	-89 0%	
12	-78 0%		12	-84 0%		12	-89 0%	
13	-78 0%		13	-77 0%		13	-86 0%	
14	-79 0%		14	-79 0%		14	-86 0%	
15	-78 0%		15	-78 0%		15	-87 0%	
16	-78 0%		16	-78 0%		16	-88 0%	
17	-78 0%		17	-78 0%		17	-90 0%	
18	-78 0%		18	-78 0%		18	-93 0%	
19	-77 0%		19	-78 0%		19	-91 0%	
20	-78 0%		20	-78 0%		20	-89 0%	
RATA2	-79		RATA2	-82		RATA2	-89	
Terkirim		20	Terkirim		20	Terkirim		17
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		3
Rating Paket		100%	Rating Paket		100%	Rating Paket		85%

JARAK 400 m			JARAK 500 m			JARAK 600 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-	100%	1	-	100%	1	-	100%
2	-	100%	2	-	100%	2	-97 0%	
3	-	100%	3	-	100%	3	-	100%
4	-	100%	4	-	100%	4	-96 0%	
5	-90 0%		5	-96 0%		5	-	100%
6	-91 0%		6	-	100%	6	-	100%
7	-93 0%		7	-	100%	7	-	100%
8	-97 0%		8	-98 0%		8	-	100%
9	-95 0%		9	-	100%	9	-	100%
10	-	100%	10	-97 0%		10	-	100%
11	-	100%	11	-96 0%		11	-	100%
12	-91 0%		12	-	100%	12	-	100%
13	-90 0%		13	-	100%	13	-	100%
14	-89 0%		14	-	100%	14	-	100%
15	-88 0%		15	-	100%	15	-	100%
16	-	100%	16	-	100%	16	-	100%
17	-	100%	17	-	100%	17	-	100%
18	-	100%	18	-	100%	18	-	100%
19	-87 0%		19	-	100%	19	-	100%
20	-	100%	20	-	100%	20	-	100%
RATA2	-91		RATA2	-97		RATA2	-97	
Terkirim		10	Terkirim		4	Terkirim		2
Tidak Terkirim		10	Tidak Terkirim		16	Tidak Terkirim		18
Rating Paket		50%	Rating Paket		20%	Rating Paket		10%

JARAK 700 m			JARAK 800 m			JARAK 900 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%	1 -		100%
2 -	-96	0%	2 -		100%	2 -		100%
3 -	-95	0%	3 -		100%	3 -		100%
4 -	-96	0%	4 -		100%	4 -		100%
5 -	-96	0%	5 -		100%	5 -		100%
6 -	-96	0%	6 -		100%	6 -		100%
7 -	-96	0%	7 -		100%	7 -		100%
8 -	-95	0%	8 -		100%	8 -		100%
9 -	-96	0%	9 -		100%	9 -		100%
10 -	-95	0%	10 -		100%	10 -		100%
11 -	-96	0%	11 -	-98	0%	11 -		100%
12 -		100%	12 -		100%	12 -		100%
13 -	-95	0%	13 -		100%	13 -		100%
14 -	-96	0%	14 -	-97	0%	14 -		100%
15 -	-96	0%	15 -	-96	0%	15 -		100%
16 -	-96	0%	16 -		100%	16 -		100%
17 -	-95	0%	17 -		100%	17 -		100%
18 -	-96	0%	18 -		100%	18 -		100%
19 -	-95	0%	19 -		100%	19 -		100%
20 -	-96	0%	20 -		100%	20 -		100%
RATA2	-96		RATA2	-97		RATA2	#DIV/0!	
Terkirim		18	Terkirim		3	Terkirim		0
Tidak Terkirim		2	Tidak Terkirim		17	Tidak Terkirim		20
Rating Paket		90%	Rating Paket		15%	Rating Paket		0%

JARAK 1000 m			JARAK 1100 m			JARAK 1200 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%	1 -		100%
2 -		100%	2 -		100%	2 -	-95	0%
3 -		100%	3 -		100%	3 -	-95	0%
4 -		100%	4 -		100%	4 -	-94	0%
5 -		100%	5 -		100%	5 -	-94	0%
6 -		100%	6 -		100%	6 -	-93	0%
7 -		100%	7 -		100%	7 -	-94	0%
8 -		100%	8 -		100%	8 -	-94	0%
9 -		100%	9 -		100%	9 -	-94	0%
10 -		100%	10 -		100%	10 -	-95	0%
11 -		100%	11 -		100%	11 -	-96	0%
12 -		100%	12 -		100%	12 -	-95	0%
13 -		100%	13 -		100%	13 -	-93	0%
14 -		100%	14 -		100%	14 -	-94	0%
15 -		100%	15 -		100%	15 -		100%
16 -		100%	16 -		100%	16 -	-94	0%
17 -		100%	17 -		100%	17 -	-94	0%
18 -		100%	18 -		100%	18 -	-94	0%
19 -		100%	19 -		100%	19 -	-93	0%
20 -		100%	20 -		100%	20 -	-94	0%
RATA2	#DIV/0!		RATA2	#DIV/0!		RATA2	-94	
Terkirim		0	Terkirim		0	Terkirim		18
Tidak Terkirim		20	Tidak Terkirim		20	Tidak Terkirim		2
Rating Paket		0%	Rating Paket		0%	Rating Paket		90%



JARAK 1300 m			JARAK 1400 m			JARAK 1500 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%	1 -		100%
2 -		100%	2 -	-93	0%	2 -		100%
3 -		100%	3 -	-95	0%	3 -		100%
4 -		100%	4 -	-95	0%	4 -		100%
5 -		100%	5 -	-97	0%	5 -		100%
6 -		100%	6 -	-92	0%	6 -	-96	0%
7 -		100%	7 -		100%	7 -		100%
8 -		100%	8 -	-91	0%	8 -		100%
9 -		100%	9 -		100%	9 -		100%
10 -		100%	10 -		100%	10 -		100%
11 -		100%	11 -		100%	11 -		100%
12 -		100%	12 -	-97	0%	12 -		100%
13 -		100%	13 -	-94	0%	13 -	-95	0%
14 -		100%	14 -	-98	0%	14 -	-95	0%
15 -		100%	15 -	-98	0%	15 -	-96	0%
16 -		100%	16 -		100%	16 -	-95	0%
17 -		100%	17 -	-94	0%	17 -	-95	0%
18 -		100%	18 -		100%	18 -	-96	0%
19 -		100%	19 -		100%	19 -	-95	0%
20 -		100%	20 -	-98	0%	20 -	-96	0%
RATA2	#DIV/0!		RATA2	-95		RATA2	-95	
Terkirim		0	Terkirim		12	Terkirim		9
Tidak Terkirim		20	Tidak Terkirim		8	Tidak Terkirim		11
Rating Paket		0%	Rating Paket		60%	Rating Paket		45%

JARAK 1600 m			JARAK 1700 m			JARAK 1800 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%	1 -	-95	0%
2 -	-95	0%	2 -		100%	2 -		100%
3 -		100%	3 -	-94	0%	3 -	-98	0%
4 -		100%	4 -	-93	0%	4 -	-98	0%
5 -		100%	5 -	-92	0%	5 -		100%
6 -		100%	6 -	-92	0%	6 -	-98	0%
7 -	-96	0%	7 -	-92	0%	7 -	-99	0%
8 -	-95	0%	8 -	-93	0%	8 -		100%
9 -	-95	0%	9 -	-92	0%	9 -	-98	0%
10 -	-95	0%	10 -	-92	0%	10 -		100%
11 -	-96	0%	11 -	-93	0%	11 -	-99	0%
12 -		100%	12 -	-93	0%	12 -	-98	0%
13 -	-95	0%	13 -	-92	0%	13 -		100%
14 -	-95	0%	14 -	-93	0%	14 -	-99	0%
15 -	-95	0%	15 -	-93	0%	15 -	-99	0%
16 -	-94	0%	16 -	-94	0%	16 -		100%
17 -	-95	0%	17 -	-92	0%	17 -		100%
18 -	-95	0%	18 -	-94	0%	18 -	-99	0%
19 -	-96	0%	19 -	-93	0%	19 -		100%
20 -	-96	0%	20 -	-93	0%	20 -	-99	0%
RATA2	-95		RATA2	-93		RATA2	-98	
Terkirim		14	Terkirim		18	Terkirim		12
Tidak Terkirim		6	Tidak Terkirim		2	Tidak Terkirim		8
Rating Paket		70%	Rating Paket		90%	Rating Paket		60%

JARAK 1900 m			JARAK 2000 m		
Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%
2 -		100%	2 -		100%
3 -		100%	3 -		100%
4 -		100%	4 -		100%
5 -		100%	5 -		100%
6 -		100%	6 -		100%
7 -		100%	7 -		100%
8 -		100%	8 -		100%
9 -		100%	9 -	-99	0%
10 -		100%	10 -		100%
11 -		100%	11 -		100%
12 -		100%	12 -	-101	0%
13 -		100%	13 -		100%
14 -		100%	14 -	-101	0%
15 -		100%	15 -		100%
16 -		100%	16 -		100%
17 -		100%	17 -		100%
18 -		100%	18 -		100%
19 -		100%	19 -		100%
20 -		100%	20 -		100%
RATA2	#DIV/0!		RATA2	-100	
Terkirim		0	Terkirim		3
Tidak Terkirim		20	Tidak Terkirim		17
Rating Paket		0%	Rating Paket		15%

**Bandwidth 500 kHz**

JARAK 100 m			JARAK 200 m			JARAK 300 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-78	0%	1	-77	0%	1	-	100%
2	-79	0%	2	-76	0%	2	-	100%
3	-78	0%	3	-82	0%	3	-	100%
4	-80	0%	4	-71	0%	4	-90	0%
5	-80	0%	5	-75	0%	5	-	100%
6	-80	0%	6	-74	0%	6	-91	0%
7	-78	0%	7	-74	0%	7	-	100%
8	-78	0%	8	-76	0%	8	-92	0%
9	-79	0%	9	-75	0%	9	-91	0%
10	-79	0%	10	-77	0%	10	-	100%
11	-80	0%	11	-76	0%	11	-93	0%
12	-80	0%	12	-77	0%	12	-	100%
13	-80	0%	13	-76	0%	13	-90	0%
14	-80	0%	14	-76	0%	14	-	100%
15	-78	0%	15	-73	0%	15	-	100%
16	-78	0%	16	-73	0%	16	-	100%
17	-79	0%	17	-72	0%	17	-	100%
18	-80	0%	18	-76	0%	18	-90	0%
19	-79	0%	19	-76	0%	19	-90	0%
20	-79	0%	20	-73	0%	20	-	100%
RATA2	-79		RATA2	-75		RATA2	-91	
Terkirim		20	Terkirim		20	Terkirim		8
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		12
Rating Paket		100%	Rating Paket		100%	Rating Paket		40%

JARAK 400 m			JARAK 500 m			JARAK 600 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-	100%	1	-	100%	1	-	100%
2	-	100%	2	-	100%	2	-	100%
3	-	100%	3	-	100%	3	-	100%
4	-88	0%	4	-	100%	4	-	100%
5	-	100%	5	-	100%	5	-	100%
6	-89	0%	6	-	100%	6	-	100%
7	-89	0%	7	-	100%	7	-	100%
8	-	100%	8	-	100%	8	-	100%
9	-87	0%	9	-	100%	9	-	100%
10	-87	0%	10	-	100%	10	-	100%
11	-86	0%	11	-	100%	11	-	100%
12	-88	0%	12	-	100%	12	-	100%
13	-86	0%	13	-	100%	13	-	100%
14	-86	0%	14	-	100%	14	-	100%
15	-86	0%	15	-	100%	15	-	100%
16	-86	0%	16	-	100%	16	-	100%
17	-87	0%	17	-	100%	17	-	100%
18	-86	0%	18	-	100%	18	-	100%
19	-87	0%	19	-	100%	19	-	100%
20	-88	0%	20	-	100%	20	-	100%
RATA2	-87		RATA2	#DIV/0!		RATA2	#DIV/0!	
Terkirim		15	Terkirim		0	Terkirim		0
Tidak Terkirim		5	Tidak Terkirim		20	Tidak Terkirim		20
Rating Paket		75%	Rating Paket		0%	Rating Paket		0%

JARAK 700 m			JARAK 800 m			JARAK 900 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%	1 -		100%
2 -		100%	2 -		100%	2 -		100%
3 -		100%	3 -		100%	3 -		100%
4 -		100%	4 -		100%	4 -		100%
5 -		100%	5 -		100%	5 -		100%
6 -		100%	6 -		100%	6 -		100%
7 -		100%	7 -		100%	7 -		100%
8 -		100%	8 -		100%	8 -		100%
9 -		100%	9 -		100%	9 -		100%
10 -		100%	10 -		100%	10 -		100%
11 -		100%	11 -		100%	11 -		100%
12 -		100%	12 -		100%	12 -		100%
13 -		100%	13 -		100%	13 -		100%
14 -		100%	14 -		100%	14 -		100%
15 -		100%	15 -		100%	15 -		100%
16 -		100%	16 -		100%	16 -		100%
17 -		100%	17 -		100%	17 -		100%
18 -		100%	18 -		100%	18 -		100%
19 -		100%	19 -		100%	19 -		100%
20 -		100%	20 -		100%	20 -		100%
RATA2	#DIV/0!		RATA2	#DIV/0!		RATA2	#DIV/0!	
Terkirim		0	Terkirim		0	Terkirim		0
Tidak Terkirim		20	Tidak Terkirim		20	Tidak Terkirim		20
Rating Paket		0%	Rating Paket		0%	Rating Paket		0%

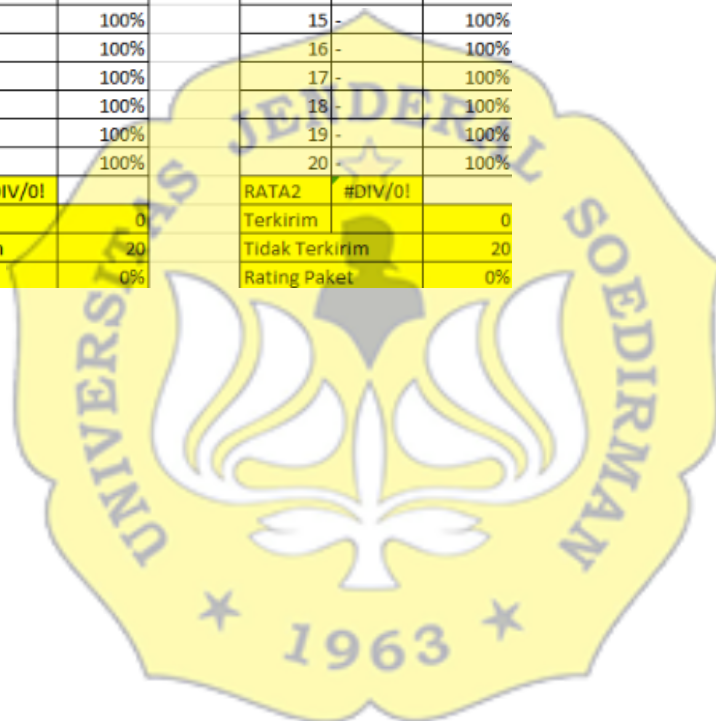
  

JARAK 1000 m			JARAK 1100 m			JARAK 1200 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%	1 -		100%
2 -		100%	2 -		100%	2 -		100%
3 -		100%	3 -		100%	3 -		100%
4 -		100%	4 -		100%	4 -		100%
5 -		100%	5 -		100%	5 -		100%
6 -		100%	6 -		100%	6 -		100%
7 -		100%	7 -		100%	7 -		100%
8 -		100%	8 -		100%	8 -		100%
9 -		100%	9 -		100%	9 -		100%
10 -		100%	10 -		100%	10 -		100%
11 -		100%	11 -		100%	11 -		100%
12 -		100%	12 -		100%	12 -		100%
13 -		100%	13 -		100%	13 -		100%
14 -		100%	14 -		100%	14 -		100%
15 -		100%	15 -		100%	15 -		100%
16 -		100%	16 -		100%	16 -		100%
17 -		100%	17 -		100%	17 -		100%
18 -		100%	18 -		100%	18 -		100%
19 -		100%	19 -		100%	19 -		100%
20 -		100%	20 -		100%	20 -		100%
RATA2	#DIV/0!		RATA2	#DIV/0!		RATA2	#DIV/0!	
Terkirim		0	Terkirim		0	Terkirim		0
Tidak Terkirim		20	Tidak Terkirim		20	Tidak Terkirim		20
Rating Paket		0%	Rating Paket		0%	Rating Paket		0%

JARAK 1300 m			JARAK 1400 m			JARAK 1500 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%	1 -		100%
2 -		100%	2 -		100%	2 -		100%
3 -		100%	3 -		100%	3 -		100%
4 -		100%	4 -		100%	4 -		100%
5 -		100%	5 -		100%	5 -		100%
6 -		100%	6 -		100%	6 -		100%
7 -		100%	7 -		100%	7 -		100%
8 -		100%	8 -		100%	8 -		100%
9 -		100%	9 -		100%	9 -		100%
10 -		100%	10 -		100%	10 -		100%
11 -		100%	11 -		100%	11 -		100%
12 -	-92	0%	12 -		100%	12 -		100%
13 -		100%	13 -		100%	13 -		100%
14 -		100%	14 -		100%	14 -		100%
15 -		100%	15 -		100%	15 -		100%
16 -		100%	16 -		100%	16 -		100%
17 -	-91	0%	17 -		100%	17 -		100%
18 -		100%	18 -		100%	18 -		100%
19 -		100%	19 -		100%	19 -		100%
20 -		100%	20 -		100%	20 -		100%
RATA2	-92		RATA2	#DIV/0!		RATA2	#DIV/0!	
Terkirim		2	Terkirim		0	Terkirim		0
Tidak Terkirim		18	Tidak Terkirim		20	Tidak Terkirim		20
Rating Paket		10%	Rating Paket		0%	Rating Paket		0%

JARAK 1600 m			JARAK 1700 m			JARAK 1800 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1 -	-92	0%	1 -		100%	1 -		100%
2 -		100%	2 -		100%	2 -		100%
3 -		100%	3 -		100%	3 -		100%
4 -		100%	4 -		100%	4 -		100%
5 -	-88	0%	5 -		100%	5 -		100%
6 -		100%	6 -		100%	6 -		100%
7 -		100%	7 -		100%	7 -		100%
8 -		100%	8 -		100%	8 -		100%
9 -		100%	9 -		100%	9 -		100%
10 -	-90	0%	10 -	-91	0%	10 -		100%
11 -	-90	0%	11 -		100%	11 -		100%
12 -	-89	0%	12 -		100%	12 -		100%
13 -	-89	0%	13 -		100%	13 -		100%
14 -	-88	0%	14 -		100%	14 -		100%
15 -	-89	0%	15 -	-93	0%	15 -		100%
16 -	-89	0%	16 -		100%	16 -		100%
17 -	-89	0%	17 -		100%	17 -		100%
18 -	-90	0%	18 -		100%	18 -		100%
19 -	-90	0%	19 -		100%	19 -		100%
20 -		100%	20 -		100%	20 -		100%
RATA2	-89		RATA2	-92		RATA2	#DIV/0!	
Terkirim		12	Terkirim		2	Terkirim		0
Tidak Terkirim		8	Tidak Terkirim		18	Tidak Terkirim		20
Rating Paket		60%	Rating Paket		10%	Rating Paket		0%

JARAK 1900 m			JARAK 2000 m		
Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%
2 -		100%	2 -		100%
3 -		100%	3 -		100%
4 -		100%	4 -		100%
5 -		100%	5 -		100%
6 -		100%	6 -		100%
7 -		100%	7 -		100%
8 -		100%	8 -		100%
9 -		100%	9 -		100%
10 -		100%	10 -		100%
11 -		100%	11 -		100%
12 -		100%	12 -		100%
13 -		100%	13 -		100%
14 -		100%	14 -		100%
15 -		100%	15 -		100%
16 -		100%	16 -		100%
17 -		100%	17 -		100%
18 -		100%	18 -		100%
19 -		100%	19 -		100%
20 -		100%	20 -		100%
RATA2	#DIV/0!		RATA2	#DIV/0!	
Terkirim		0	Terkirim		0
Tidak Terkirim		20	Tidak Terkirim		20
Rating Paket		0%	Rating Paket		0%





**Bandwidth 31,2 kHz**

JARAK 100 m			JARAK 200 m			JARAK 300 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-82	0%	1	-79	0%	1	-99	0%
2	-83	0%	2	-77	0%	2	-100	0%
3	-77	0%	3	-79	0%	3	-99	0%
4	-80	0%	4	-78	0%	4	-98	0%
5	-82	0%	5	-78	0%	5	-100	0%
6	-81	0%	6	-78	0%	6	-99	0%
7	-81	0%	7	-79	0%	7	-97	0%
8	-81	0%	8	-82	0%	8	-100	0%
9	-82	0%	9	-83	0%	9	-94	0%
10	-81	0%	10	-84	0%	10	-95	0%
11	-76	0%	11	-82	0%	11	-95	0%
12	-78	0%	12	-82	0%	12	-94	0%
13	-78	0%	13	-81	0%	13	-96	0%
14	-77	0%	14	-78	0%	14	-99	0%
15	-79	0%	15	-77	0%	15	-98	0%
16	-79	0%	16	-73	0%	16	-102	0%
17	-79	0%	17	-74	0%	17	-97	0%
18	-78	0%	18	-77	0%	18	-98	0%
19	-77	0%	19	-77	0%	19	-97	0%
20	-76	0%	20	-75	0%	20	-	100%
RATA2	-79		RATA2	-79		RATA2	-98	
Terkirim		20	Terkirim		20	Terkirim		19
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		1
Rating Paket		100%	Rating Paket		100%	Rating Paket		95%

JARAK 400 m			JARAK 500 m			JARAK 600 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-98	0%	1	-96	0%	1	-100	0%
2	-98	0%	2	-	100%	2	-99	0%
3	-97	0%	3	-	100%	3	-	100%
4	-100	0%	4	-97	0%	4	-100	0%
5	-100	0%	5	-	100%	5	-100	0%
6	-	100%	6	-	100%	6	-100	0%
7	-98	0%	7	-	100%	7	-101	0%
8	-96	0%	8	-97	0%	8	-100	0%
9	-	100%	9	-	100%	9	-101	0%
10	-	100%	10	-	100%	10	-102	0%
11	-	100%	11	-	100%	11	-100	0%
12	-100	0%	12	-	100%	12	-99	0%
13	-100	0%	13	-	100%	13	-98	0%
14	-	100%	14	-	100%	14	-100	0%
15	-	100%	15	-	100%	15	-100	0%
16	-	100%	16	-	100%	16	-	100%
17	-95	0%	17	-	100%	17	-99	0%
18	-96	0%	18	-101	0%	18	-98	0%
19	-98	0%	19	-	100%	19	-100	0%
20	-97	0%	20	-99	0%	20	-101	0%
RATA2	-98		RATA2	-98		RATA2	-100	
Terkirim		13	Terkirim		5	Terkirim		18
Tidak Terkirim		7	Tidak Terkirim		15	Tidak Terkirim		2
Rating Paket		65%	Rating Paket		25%	Rating Paket		90%

JARAK 700 m			JARAK 800 m			JARAK 900 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-101	0%	1	-99	0%	1	-101	0%
2	-101	0%	2	-101	0%	2	-	100%
3	-100	0%	3	-101	0%	3	-97	0%
4	-	100%	4	-102	0%	4	-98	0%
5	-	100%	5	-101	0%	5	-99	0%
6	-	100%	6	-102	0%	6	-	100%
7	-	100%	7	-101	0%	7	-101	0%
8	-	100%	8	-100	0%	8	-100	0%
9	-	100%	9	-	100%	9	-100	0%
10	-	100%	10	-103	0%	10	-100	0%
11	-100	0%	11	-	100%	11	-98	0%
12	-100	0%	12	-102	0%	12	-99	0%
13	-101	0%	13	-103	0%	13	-99	0%
14	-100	0%	14	-100	0%	14	-99	0%
15	-100	0%	15	-101	0%	15	-99	0%
16	-	100%	16	-101	0%	16	-100	0%
17	-100	0%	17	-102	0%	17	-99	0%
18	-101	0%	18	-100	0%	18	-100	0%
19	-100	0%	19	-100	0%	19	-	100%
20	-99	0%	20	-99	0%	20	-100	0%
RATA2	-100		RATA2	-101		RATA2	-99	
Terkirim		12	Terkirim		18	Terkirim		17
Tidak Terkirim		8	Tidak Terkirim		2	Tidak Terkirim		3
Rating Paket		60%	Rating Paket		90%	Rating Paket		85%

JARAK 1000 m			JARAK 1100 m			JARAK 1200 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-101	0%	1	-	100%	1	-104	0%
2	-102	0%	2	-	100%	2	-	100%
3	-101	0%	3	-	100%	3	-102	0%
4	-102	0%	4	-	100%	4	-101	0%
5	-102	0%	5	-106	0%	5	-100	0%
6	-104	0%	6	-	100%	6	-101	0%
7	-105	0%	7	-104	0%	7	-103	0%
8	-	100%	8	-	100%	8	-102	0%
9	-	100%	9	-	100%	9	-	100%
10	-	100%	10	-	100%	10	-103	0%
11	-102	0%	11	-	100%	11	-101	0%
12	-102	0%	12	-105	0%	12	-102	0%
13	-105	0%	13	-104	0%	13	-102	0%
14	-105	0%	14	-104	0%	14	-105	0%
15	-104	0%	15	-105	0%	15	-104	0%
16	-	100%	16	-105	0%	16	-103	0%
17	-104	0%	17	-106	0%	17	-103	0%
18	-	100%	18	-	100%	18	-	100%
19	-104	0%	19	-	100%	19	-103	0%
20	-104	0%	20	-	100%	20	-101	0%
RATA2	-103		RATA2	-104,875		RATA2	-102	
Terkirim		15	Terkirim		8	Terkirim		17
Tidak Terkirim		5	Tidak Terkirim		12	Tidak Terkirim		3
Rating Paket		75%	Rating Paket		40%	Rating Paket		85%

JARAK 1300 m			JARAK 1400 m			JARAK 1500 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-102	0%	1	-99	0%	1	-	100%
2	-99	0%	2	-100	0%	2	-	100%
3	-99	0%	3	-101	0%	3	-	100%
4	-97	0%	4	-97	0%	4	-	100%
5	-98	0%	5	-98	0%	5	-	100%
6	-100	0%	6	-97	0%	6	-	100%
7	-97	0%	7	-96	0%	7	-	100%
8	-95	0%	8	-98	0%	8	-	100%
9	-99	0%	9	-97	0%	9	-	100%
10	-96	0%	10	-98	0%	10	-	100%
11	-96	0%	11	-97	0%	11	-	100%
12	-98	0%	12	-97	0%	12	-	100%
13	-97	0%	13	-99	0%	13	-	100%
14	-99	0%	14	-97	0%	14	-	100%
15	-99	0%	15	-101	0%	15	-	100%
16	-101	0%	16	-100	0%	16	-	100%
17	-97	0%	17	-97	0%	17	-107	0%
18	-98	0%	18	-98	0%	18	-107	0%
19	-97	0%	19	-98	0%	19	-	100%
20	-96	0%	20	-99	0%	20	-105	0%
RATA2	-98		RATA2	-98		RATA2	-106	
Terkirim		20	Terkirim		20	Terkirim		3
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		17
Rating Paket		100%	Rating Paket		100%	Rating Paket		15%

JARAK 1600 m			JARAK 1700 m			JARAK 1800 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-101	0%	1	-101	0%	1	-100	0%
2	-101	0%	2	-101	0%	2	-101	0%
3	-104	0%	3	-102	0%	3	-	100%
4	-102	0%	4	-99	0%	4	-101	0%
5	-104	0%	5	-101	0%	5	-	100%
6	-	100%	6	-100	0%	6	-101	0%
7	-	100%	7	-	100%	7	-102	0%
8	-	100%	8	-102	0%	8	-101	0%
9	-	100%	9	-103	0%	9	-100	0%
10	-	100%	10	-101	0%	10	-100	0%
11	-100	0%	11	-103	0%	11	-101	0%
12	-100	0%	12	-102	0%	12	-101	0%
13	-99	0%	13	-101	0%	13	-101	0%
14	-99	0%	14	-102	0%	14	-101	0%
15	-100	0%	15	-102	0%	15	-102	0%
16	-	100%	16	-102	0%	16	-102	0%
17	-100	0%	17	-101	0%	17	-101	0%
18	-100	0%	18	-101	0%	18	-101	0%
19	-98	0%	19	-102	0%	19	-101	0%
20	-	100%	20	-101	0%	20	-	100%
RATA2	-101		RATA2	-101		RATA2	-101	
Terkirim		13	Terkirim		19	Terkirim		17
Tidak Terkirim		7	Tidak Terkirim		1	Tidak Terkirim		3
Rating Paket		65%	Rating Paket		95%	Rating Paket		85%

JARAK 1900 m			JARAK 2000 m			JARAK 2100 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-104	0%	1	-105	0%	1	-106	0%
2	-105	0%	2	-104	0%	2	-104	0%
3	-104	0%	3	-104	0%	3	-106	0%
4	-105	0%	4	-106	0%	4	-	100%
5	-107	0%	5	-103	0%	5	-	100%
6	-106	0%	6	-108	0%	6	-	100%
7	-	100%	7	-104	0%	7	-107	0%
8	-104	0%	8	-104	0%	8	-106	0%
9	-102	0%	9	-105	0%	9	-106	0%
10	-104	0%	10	-103	0%	10	-	100%
11	-103	0%	11	-	100%	11	-	100%
12	-104	0%	12	-105	0%	12	-	100%
13	-104	0%	13	-	100%	13	-107	0%
14	-105	0%	14	-106	0%	14	-	100%
15	-104	0%	15	-	100%	15	-106	0%
16	-104	0%	16	-104	0%	16	-108	0%
17	-105	0%	17	-106	0%	17	-	100%
18	-107	0%	18	-	100%	18	-105	0%
19	-107	0%	19	-104	0%	19	-105	0%
20	-108	0%	20	-	100%	20	-	100%
RATA2	-105		RATA2	-105		RATA2	-106	
Terkirim		19	Terkirim		15	Terkirim		11
Tidak Terkirim		1	Tidak Terkirim		5	Tidak Terkirim		9
Rating Paket		95%	Rating Paket		75%	Rating Paket		55%

## Lampiran 6. Data Pengujian Antena Yagi

*Bandwidth 125 kHz*

JARAK 100 m			JARAK 200 m			JARAK 300 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-75	0%	1	-71	0%	1	-91	0%
2	-81	0%	2	-68	0%	2	-92	0%
3	-80	0%	3	-70	0%	3	-89	0%
4	-82	0%	4	-70	0%	4	-91	0%
5	-84	0%	5	-69	0%	5	-92	0%
6	-80	0%	6	-69	0%	6	-95	0%
7	-78	0%	7	-68	0%	7	-94	0%
8	-79	0%	8	-69	0%	8	-95	0%
9	-83	0%	9	-71	0%	9	-93	0%
10	-81	0%	10	-68	0%	10	-94	0%
11	-80	0%	11	-69	0%	11	-96	0%
12	-83	0%	12	-71	0%	12	-96	0%
13	-79	0%	13	-64	0%	13	-93	0%
14	-86	0%	14	-68	0%	14	-	100%
15	-82	0%	15	-65	0%	15	-97	0%
16	-81	0%	16	-66	0%	16	-	100%
17	-83	0%	17	-66	0%	17	-97	0%
18	-86	0%	18	-72	0%	18	-95	0%
19	-79	0%	19	-74	0%	19	-	100%
20	-79	0%	20	-71	0%	20	-93	0%
RATA2	-81		RATA2	-69		RATA2	-93,7059	
Terkirim		20	Terkirim		20	Terkirim		17
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		3
Rating Paket		100%	Rating Paket		100%	Rating Paket		85%

JARAK 400 m			JARAK 500 m			JARAK 600 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-88	0%	1	-88	0%	1	-95	0%
2	-84	0%	2	-	100%	2	-96	0%
3	-88	0%	3	-	100%	3	-96	0%
4	-86	0%	4	-89	0%	4	-97	0%
5	-85	0%	5	-98	0%	5	-	100%
6	-90	0%	6	-90	0%	6	-	100%
7	-88	0%	7	-91	0%	7	-	100%
8	-87	0%	8	-90	0%	8	-	100%
9	-	100%	9	-92	0%	9	-97	0%
10	-86	0%	10	-90	0%	10	-97	0%
11	-83	0%	11	-89	0%	11	-	100%
12	-84	0%	12	-	100%	12	-94	0%
13	-84	0%	13	-91	0%	13	-95	0%
14	-84	0%	14	-88	0%	14	-96	0%
15	-	100%	15	-89	0%	15	-97	0%
16	-87	0%	16	-85	0%	16	-96	0%
17	-85	0%	17	-84	0%	17	-96	0%
18	-89	0%	18	-87	0%	18	-97	0%
19	-88	0%	19	-90	0%	19	-96	0%
20	-86	0%	20	-92	0%	20	-95	0%
RATA2	-86		RATA2	-90		RATA2	-96	
Terkirim		18	Terkirim		17	Terkirim		15
Tidak Terkirim		2	Tidak Terkirim		3	Tidak Terkirim		5
Rating Paket		90%	Rating Paket		85%	Rating Paket		75%



JARAK 700 m			JARAK 800 m			JARAK 900 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-95	0%	1	-95	0%	1	-96	0%
2	-95	0%	2	-94	0%	2	-94	0%
3	-93	0%	3	-	100%	3	-95	0%
4	-93	0%	4	-	100%	4	-93	0%
5	-94	0%	5	-97	0%	5	-95	0%
6	-96	0%	6	-98	0%	6	-98	0%
7	-96	0%	7	-	100%	7	-96	0%
8	-95	0%	8	-96	0%	8	-98	0%
9	-94	0%	9	-95	0%	9	-98	0%
10	-97	0%	10	-97	0%	10	-98	0%
11	-95	0%	11	-	100%	11	-95	0%
12	-96	0%	12	-	100%	12	-92	0%
13	-94	0%	13	-	100%	13	-94	0%
14	-94	0%	14	-	100%	14	-93	0%
15	-94	0%	15	-	100%	15	-93	0%
16	-94	0%	16	-96	0%	16	-93	0%
17	-91	0%	17	-97	0%	17	-93	0%
18	-91	0%	18	-96	0%	18	-93	0%
19	-92	0%	19	-97	0%	19	-93	0%
20	-94	0%	20	-96	0%	20	-92	0%
RATA2	-94		RATA2	-96		RATA2	-94,6	
Terkirim		20	Terkirim		12	Terkirim		20
Tidak Terkirim		0	Tidak Terkirim		8	Tidak Terkirim		0
Rating Paket		100%	Rating Paket		60%	Rating Paket		100%

JARAK 1000 m			JARAK 1100 m			JARAK 1200 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-96	0%	1	-97	0%	1	-94	0%
2	-97	0%	2	-	100%	2	-	100%
3	-95	0%	3	-96	0%	3	-97	0%
4	-97	0%	4	-	100%	4	-	100%
5	-96	0%	5	-	100%	5	-	100%
6	-97	0%	6	-	100%	6	-	100%
7	-	100%	7	-	100%	7	-	100%
8	-97	0%	8	-96	0%	8	-96	0%
9	-96	0%	9	-	100%	9	-	100%
10	-	100%	10	-	100%	10	-	100%
11	-	100%	11	-	100%	11	-95	0%
12	-96	0%	12	-	100%	12	-	100%
13	-97	0%	13	-	100%	13	-	100%
14	-	100%	14	-95	0%	14	-	100%
15	-97	0%	15	-	100%	15	-	100%
16	-	100%	16	-	100%	16	-	100%
17	-97	0%	17	-	100%	17	-	100%
18	-98	0%	18	-	100%	18	-	100%
19	-97	0%	19	-	100%	19	-	100%
20	-98	0%	20	-	100%	20	-	100%
RATA2	-96,7333		RATA2	-96		RATA2	-96	
Terkirim		15	Terkirim		4	Terkirim		4
Tidak Terkirim		5	Tidak Terkirim		16	Tidak Terkirim		16
Rating Paket		75%	Rating Paket		20%	Rating Paket		20%

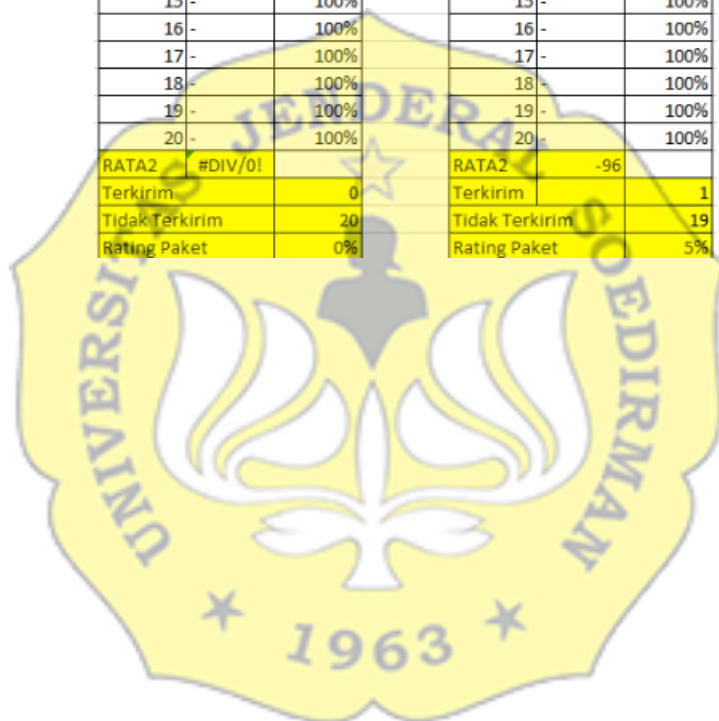


JARAK 1300 m			JARAK 1400 m			JARAK 1500 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-94	0%	1	-94	0%	1	-	100%
2	-95	0%	2	-94	0%	2	-	100%
3	-91	0%	3	-93	0%	3	-	100%
4	-91	0%	4	-94	0%	4	-	100%
5	-94	0%	5	-94	0%	5	-	100%
6	-96	0%	6	-	100%	6	-	100%
7	-96	0%	7	-94	0%	7	-	100%
8	-	100%	8	-95	0%	8	-	100%
9	-93	0%	9	-	100%	9	-	100%
10	-93	0%	10	-94	0%	10	-	100%
11	-94	0%	11	-94	0%	11	-	100%
12	-95	0%	12	-94	0%	12	-	100%
13	-91	0%	13	-95	0%	13	-	100%
14	-94	0%	14	-	100%	14	-	100%
15	-94	0%	15	-	100%	15	-	100%
16	-95	0%	16	-	100%	16	-	100%
17	-94	0%	17	-	100%	17	-	100%
18	-	100%	18	-	100%	18	-	100%
19	-97	0%	19	-	100%	19	-	100%
20	-98	0%	20	-	100%	20	-	100%
RATA2	-94,1667		RATA2	-94		RATA2	#DIV/0!	
Terkirim		13	Terkirim		11	Terkirim		0
Tidak Terkirim		2	Tidak Terkirim		9	Tidak Terkirim		20
Rating Paket		90%	Rating Paket		55%	Rating Paket		0%

JARAK 1600 m			JARAK 1700 m			JARAK 1800 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-97	0%	1	-93	0%	1	-	100%
2	-	100%	2	-	100%	2	-	100%
3	-	100%	3	-87	0%	3	-	100%
4	-	100%	4	-86	0%	4	-	100%
5	-	100%	5	-88	0%	5	-	100%
6	-	100%	6	-89	0%	6	-	100%
7	-	100%	7	-97	0%	7	-	100%
8	-	100%	8	-	100%	8	-	100%
9	-	100%	9	-94	0%	9	-	100%
10	-93	0%	10	-93	0%	10	-	100%
11	-	100%	11	-	100%	11	-	100%
12	-	100%	12	-	100%	12	-	100%
13	-92	0%	13	-92	0%	13	-	100%
14	-	100%	14	-94	0%	14	-	100%
15	-	100%	15	-	100%	15	-	100%
16	-	100%	16	-93	0%	16	-	100%
17	-	100%	17	-95	0%	17	-	100%
18	-	100%	18	-93	0%	18	-	100%
19	-	100%	19	-93	0%	19	-	100%
20	-	100%	20	-93	0%	20	-	100%
RATA2	-94		RATA2	-92		RATA2	#DIV/0!	
Terkirim		3	Terkirim		15	Terkirim		0
Tidak Terkirim		17	Tidak Terkirim		5	Tidak Terkirim		20
Rating Paket		15%	Rating Paket		75%	Rating Paket		0%

JARAK 1900 m			JARAK 2000 m		
Paket	RSSI	Loss	Paket	RSSI	Loss
1	-	100%	1	-96	0%
2	-	100%	2	-	100%
3	-	100%	3	-	100%
4	-	100%	4	-	100%
5	-	100%	5	-	100%
6	-	100%	6	-	100%
7	-	100%	7	-	100%
8	-	100%	8	-	100%
9	-	100%	9	-	100%
10	-	100%	10	-	100%
11	-	100%	11	-	100%
12	-	100%	12	-	100%
13	-	100%	13	-	100%
14	-	100%	14	-	100%
15	-	100%	15	-	100%
16	-	100%	16	-	100%
17	-	100%	17	-	100%
18	-	100%	18	-	100%
19	-	100%	19	-	100%
20	-	100%	20	-	100%
RATA2	#DIV/0!		RATA2	-96	
Terkirim		0	Terkirim		1
Tidak Terkirim		20	Tidak Terkirim		19
Rating Paket		0%	Rating Paket		5%



**Bandwidth 500 kHz**

JARAK 100 m			JARAK 200 m			JARAK 300 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-73	0%	1	-71	0%	1	-91	0%
2	-76	0%	2	-69	0%	2	-90	0%
3	-79	0%	3	-71	0%	3	-90	0%
4	-77	0%	4	-69	0%	4	-91	0%
5	-77	0%	5	-71	0%	5	-89	0%
6	-76	0%	6	-72	0%	6	-90	0%
7	-85	0%	7	-74	0%	7	-88	0%
8	-76	0%	8	-72	0%	8	-89	0%
9	-77	0%	9	-69	0%	9	-90	0%
10	-83	0%	10	-69	0%	10	-88	0%
11	-85	0%	11	-75	0%	11	-89	0%
12	-75	0%	12	-76	0%	12	-88	0%
13	-78	0%	13	-81	0%	13	-87	0%
14	-77	0%	14	-79	0%	14	-	100%
15	-71	0%	15	-69	0%	15	-89	0%
16	-74	0%	16	-67	0%	16	-86	0%
17	-75	0%	17	-65	0%	17	-88	0%
18	-75	0%	18	-66	0%	18	-87	0%
19	-75	0%	19	-65	0%	19	-91	0%
20	-72	0%	20	-68	0%	20	-89	0%
RATA2	-77		RATA2	-71		RATA2	-89	
Terkirim		20	Terkirim		20	Terkirim		19
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		1
Rating Paket		100%	Rating Paket		100%	Rating Paket		95%

JARAK 400 m			JARAK 500 m			JARAK 600 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-87	0%	1	-90	0%	1	-	100%
2	-85	0%	2	-89	0%	2	-89	0%
3	-85	0%	3	-90	0%	3	-90	0%
4	-	100%	4	-90	0%	4	-	100%
5	-84	0%	5	-89	0%	5	-	100%
6	-83	0%	6	-90	0%	6	-	100%
7	-83	0%	7	-	100%	7	-	100%
8	-	100%	8	-	100%	8	-	100%
9	-	100%	9	-	100%	9	-	100%
10	-82	0%	10	-	100%	10	-	100%
11	-82	0%	11	-	100%	11	-	100%
12	-	100%	12	-90	0%	12	-	100%
13	-	100%	13	-89	0%	13	-	100%
14	-	100%	14	-	100%	14	-	100%
15	-86	0%	15	-	100%	15	-	100%
16	-85	0%	16	-	100%	16	-	100%
17	-86	0%	17	-	100%	17	-91	0%
18	-83	0%	18	-	100%	18	-	100%
19	-83	0%	19	-	100%	19	-	100%
20	-86	0%	20	-	100%	20	-	100%
RATA2	-84		RATA2	-90		RATA2	-90	
Terkirim		14	Terkirim		8	Terkirim		3
Tidak Terkirim		6	Tidak Terkirim		12	Tidak Terkirim		17
Rating Paket		70%	Rating Paket		40%	Rating Paket		15%

JARAK 700 m			JARAK 800 m			JARAK 900 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-	100%	1	-90	0%	1	-90	0%
2	-	100%	2	-90	0%	2	-91	0%
3	-91	0%	3	-91	0%	3	-90	0%
4	-	100%	4	-91	0%	4	-90	0%
5	-	100%	5	-91	0%	5	-89	0%
6	-	100%	6	-91	0%	6	-91	0%
7	-	100%	7	-91	0%	7	-89	0%
8	-	100%	8	-90	0%	8	-	100%
9	-	100%	9	-90	0%	9	-90	0%
10	-	100%	10	-90	0%	10	-91	0%
11	-	100%	11	-91	0%	11	-91	0%
12	-	100%	12	-90	0%	12	-91	0%
13	-91	0%	13	-92	0%	13	-91	0%
14	-	100%	14	-91	0%	14	-91	0%
15	-92	0%	15	-90	0%	15	-91	0%
16	-	100%	16	-91	0%	16	-90	0%
17	-	100%	17	-89	0%	17	-90	0%
18	-	100%	18	-91	0%	18	-91	0%
19	-	100%	19	-90	0%	19	-91	0%
20	-	100%	20	-90	0%	20	-91	0%
RATA2	-91		RATA2	-91		RATA2	-90,4737	
Terkirim		3	Terkirim		20	Terkirim		19
Tidak Terkirim		17	Tidak Terkirim		0	Tidak Terkirim		1
Rating Paket		15%	Rating Paket		100%	Rating Paket		95%

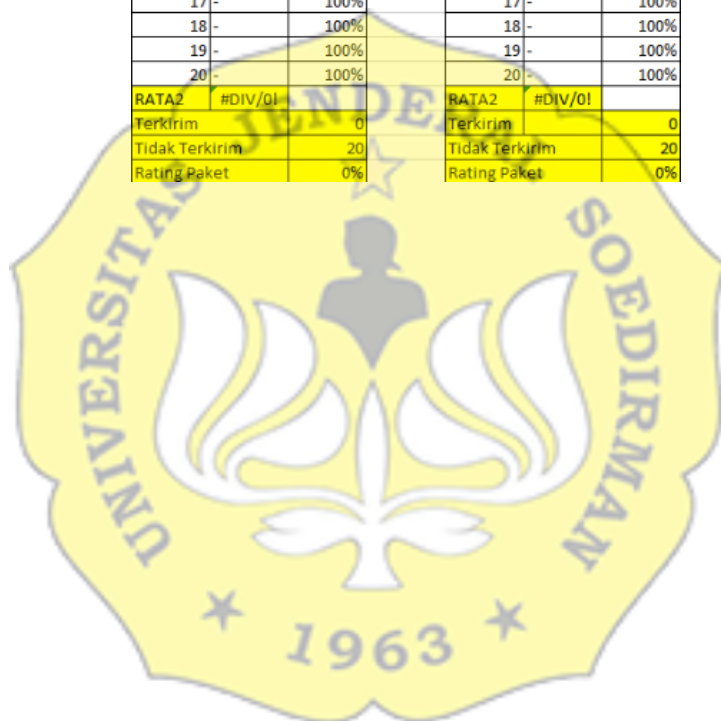
  

JARAK 1000 m			JARAK 1100 m			JARAK 1200 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-92	0%	1	-	100%	1	-87	0%
2	-	100%	2	-	100%	2	-88	0%
3	-	100%	3	-92	0%	3	-	100%
4	-	100%	4	-	100%	4	-	100%
5	-	100%	5	-	100%	5	-88	0%
6	-92	0%	6	-	100%	6	-89	0%
7	-	100%	7	-	100%	7	-	100%
8	-	100%	8	-	100%	8	-	100%
9	-	100%	9	-91	0%	9	-	100%
10	-	100%	10	-	100%	10	-86	0%
11	-	100%	11	-	100%	11	-87	0%
12	-	100%	12	-	100%	12	-89	0%
13	-	100%	13	-	100%	13	-	100%
14	-	100%	14	-92	0%	14	-92	0%
15	-	100%	15	-92	0%	15	-89	0%
16	-91	0%	16	-	100%	16	-	100%
17	-92	0%	17	-	100%	17	-88	0%
18	-94	0%	18	-	100%	18	-90	0%
19	-	100%	19	-	100%	19	-86	0%
20	-	100%	20	-	100%	20	-89	0%
RATA2	-92,2		RATA2	-91,75		RATA2	-88	
Terkirim		5	Terkirim		4	Terkirim		13
Tidak Terkirim		15	Tidak Terkirim		16	Tidak Terkirim		7
Rating Paket		25%	Rating Paket		20%	Rating Paket		65%

JARAK 1300 m			JARAK 1400 m			JARAK 1500 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-88	0%	1	-	100%	1	-	100%
2	-90	0%	2	-	100%	2	-	100%
3	-90	0%	3	-	100%	3	-	100%
4	-	100%	4	-	100%	4	-	100%
5	-91	0%	5	-	100%	5	-	100%
6	-	100%	6	-	100%	6	-	100%
7	-92	0%	7	-	100%	7	-	100%
8	-88	0%	8	-	100%	8	-	100%
9	-89	0%	9	-	100%	9	-	100%
10	-90	0%	10	-	100%	10	-	100%
11	-90	0%	11	-	100%	11	-	100%
12	-89	0%	12	-	100%	12	-	100%
13	-88	0%	13	-	100%	13	-	100%
14	-90	0%	14	-	100%	14	-	100%
15	-90	0%	15	-	100%	15	-	100%
16	-91	0%	16	-	100%	16	-	100%
17	-90	0%	17	-	100%	17	-	100%
18	-	100%	18	-	100%	18	-	100%
19	-91	0%	19	-	100%	19	-	100%
20	-	100%	20	-	100%	20	-	100%
RATA2	-90		RATA2	#DIV/0!		RATA2	#DIV/0!	
Terkirim		16	Terkirim		0	Terkirim		0
Tidak Terkirim		4	Tidak Terkirim		20	Tidak Terkirim		20
Rating Paket		80%	Rating Paket		0%	Rating Paket		0%

JARAK 1600 m			JARAK 1700 m			JARAK 1800 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-	100%	1	-90	0%	1	-93	0%
2	-	100%	2	-	100%	2	-	100%
3	-	100%	3	-89	0%	3	-92	0%
4	-	100%	4	-91	0%	4	-	100%
5	-	100%	5	-91	0%	5	-	100%
6	-	100%	6	-91	0%	6	-91	0%
7	-	100%	7	-92	0%	7	-	100%
8	-	100%	8	-92	0%	8	-	100%
9	-	100%	9	-92	0%	9	-	100%
10	-	100%	10	-	100%	10	-90	0%
11	-	100%	11	-	100%	11	-92	0%
12	-	100%	12	-	100%	12	-	100%
13	-	100%	13	-	100%	13	-	100%
14	-	100%	14	-	100%	14	-	100%
15	-	100%	15	-90	0%	15	-	100%
16	-	100%	16	-91	0%	16	-	100%
17	-	100%	17	-92	0%	17	-	100%
18	-	100%	18	-91	0%	18	-	100%
19	-	100%	19	-92	0%	19	-	100%
20	-	100%	20	-91	0%	20	-91	0%
RATA2	#DIV/0!		RATA2	-91		RATA2	-92	
Terkirim		0	Terkirim		14	Terkirim		6
Tidak Terkirim		20	Tidak Terkirim		6	Tidak Terkirim		14
Rating Paket		0%	Rating Paket		70%	Rating Paket		30%

JARAK 1900 m			JARAK 2000 m		
Paket	RSSI	Loss	Paket	RSSI	Loss
1 -		100%	1 -		100%
2 -		100%	2 -		100%
3 -		100%	3 -		100%
4 -		100%	4 -		100%
5 -		100%	5 -		100%
6 -		100%	6 -		100%
7 -		100%	7 -		100%
8 -		100%	8 -		100%
9 -		100%	9 -		100%
10 -		100%	10 -		100%
11 -		100%	11 -		100%
12 -		100%	12 -		100%
13 -		100%	13 -		100%
14 -		100%	14 -		100%
15 -		100%	15 -		100%
16 -		100%	16 -		100%
17 -		100%	17 -		100%
18 -		100%	18 -		100%
19 -		100%	19 -		100%
20 -		100%	20 -		100%
RATA2	#DIV/0!		RATA2	#DIV/0!	
Terkirim		0	Terkirim		0
Tidak Terkirim		20	Tidak Terkirim		20
Rating Paket		0%	Rating Paket		0%





**Bandwidth 31,2 kHz**

JARAK 100 m			JARAK 200 m			JARAK 300 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-84	0%	1	-70	0%	1	-91	0%
2	-83	0%	2	-67	0%	2	-94	0%
3	-85	0%	3	-70	0%	3	-91	0%
4	-95	0%	4	-67	0%	4	-94	0%
5	-84	0%	5	-70	0%	5	-94	0%
6	-90	0%	6	-80	0%	6	-93	0%
7	-92	0%	7	-75	0%	7	-92	0%
8	-90	0%	8	-76	0%	8	-94	0%
9	-85	0%	9	-80	0%	9	-91	0%
10	-82	0%	10	-72	0%	10	-98	0%
11	-81	0%	11	-71	0%	11	-98	0%
12	-81	0%	12	-78	0%	12	-99	0%
13	-82	0%	13	-78	0%	13	-93	0%
14	-85	0%	14	-81	0%	14	-99	0%
15	-83	0%	15	-81	0%	15	-98	0%
16	-81	0%	16	-83	0%	16	-96	0%
17	-79	0%	17	-83	0%	17	-95	0%
18	-79	0%	18	-80	0%	18	-96	0%
19	-84	0%	19	-81	0%	19	-99	0%
20	-82	0%	20	-78	0%	20	-99	0%
RATA2	-84		RATA2	-76		RATA2	-95	
Terkirim		20	Terkirim		20	Terkirim		20
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		0
Rating Paket		100%	Rating Paket		100%	Rating Paket		100%

JARAK 400 m			JARAK 500 m			JARAK 600 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-97	0%	1	-96	0%	1	-105	0%
2	-97	0%	2	-95	0%	2	-102	0%
3	-97	0%	3	-94	0%	3	-103	0%
4	-104	0%	4	-97	0%	4	-102	0%
5	-101	0%	5	-98	0%	5	-105	0%
6	-99	0%	6	-	100%	6	-102	0%
7	-95	0%	7	-	100%	7	-102	0%
8	-96	0%	8	-	100%	8	-102	0%
9	-98	0%	9	-	100%	9	-101	0%
10	-104	0%	10	-97	0%	10	-100	0%
11	-94	0%	11	-100	0%	11	-100	0%
12	-100	0%	12	-95	0%	12	-98	0%
13	-104	0%	13	-	100%	13	-99	0%
14	-100	0%	14	-	100%	14	-99	0%
15	-97	0%	15	-	100%	15	-102	0%
16	-94	0%	16	-99	0%	16	-104	0%
17	-101	0%	17	-	100%	17	-101	0%
18	-95	0%	18	-	100%	18	-102	0%
19	-92	0%	19	-	100%	19	-104	0%
20	-92	0%	20	-93	0%	20	-	100%
RATA2	-98		RATA2	-96		RATA2	-102	
Terkirim		20	Terkirim		10	Terkirim		19
Tidak Terkirim		0	Tidak Terkirim		10	Tidak Terkirim		1
Rating Paket		100%	Rating Paket		50%	Rating Paket		95%

JARAK 700 m			JARAK 800 m			JARAK 900 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-105	0%	1	-99	0%	1	-99	0%
2	-106	0%	2	-99	0%	2	-100	0%
3	-102	0%	3	-98	0%	3	-101	0%
4	-	100%	4	-99	0%	4	-100	0%
5	-102	0%	5	-99	0%	5	-	100%
6	-107	0%	6	-97	0%	6	-98	0%
7	-104	0%	7	-99	0%	7	-100	0%
8	-104	0%	8	-101	0%	8	-100	0%
9	-99	0%	9	-98	0%	9	-100	0%
10	-106	0%	10	-99	0%	10	-100	0%
11	-	100%	11	-99	0%	11	-	100%
12	-102	0%	12	-98	0%	12	-100	0%
13	-102	0%	13	-99	0%	13	-100	0%
14	-104	0%	14	-	100%	14	-99	0%
15	-105	0%	15	-97	0%	15	-99	0%
16	-105	0%	16	-98	0%	16	-99	0%
17	-106	0%	17	-99	0%	17	-101	0%
18	-103	0%	18	-100	0%	18	-99	0%
19	-102	0%	19	-100	0%	19	-100	0%
20	-106	0%	20	-98	0%	20	-99	0%
RATA2	-104		RATA2	-99		RATA2	-100	
Terkirim		18	Terkirim		19	Terkirim		18
Tidak Terkirim		2	Tidak Terkirim		1	Tidak Terkirim		2
Rating Paket		90%	Rating Paket		95%	Rating Paket		90%

JARAK 1000 m			JARAK 1100 m			JARAK 1200 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-98	0%	1	-99	0%	1	-100	0%
2	-97	0%	2	-98	0%	2	-101	0%
3	-97	0%	3	-99	0%	3	-97	0%
4	-96	0%	4	-99	0%	4	-97	0%
5	-96	0%	5	-99	0%	5	-96	0%
6	-95	0%	6	-99	0%	6	-97	0%
7	-96	0%	7	-	100%	7	-97	0%
8	-96	0%	8	-99	0%	8	-96	0%
9	-97	0%	9	-99	0%	9	-97	0%
10	-98	0%	10	-99	0%	10	-96	0%
11	-98	0%	11	-99	0%	11	-97	0%
12	-96	0%	12	-99	0%	12	-96	0%
13	-98	0%	13	-98	0%	13	-97	0%
14	-97	0%	14	-99	0%	14	-97	0%
15	-97	0%	15	-98	0%	15	-96	0%
16	-98	0%	16	-99	0%	16	-98	0%
17	-98	0%	17	-98	0%	17	-99	0%
18	-97	0%	18	-99	0%	18	-97	0%
19	-97	0%	19	-100	0%	19	-98	0%
20	-97	0%	20	-99	0%	20	-98	0%
RATA2	-97		RATA2	-98,8421		RATA2	-97	
Terkirim		20	Terkirim		19	Terkirim		20
Tidak Terkirim		0	Tidak Terkirim		1	Tidak Terkirim		0
Rating Paket		100%	Rating Paket		95%	Rating Paket		100%

JARAK 1300 m			JARAK 1400 m			JARAK 1500 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-95	0%	1	-96	0%	1	-94	0%
2	-95	0%	2	-95	0%	2	-96	0%
3	-96	0%	3	-96	0%	3	-94	0%
4	-88	0%	4	-95	0%	4	-95	0%
5	-91	0%	5	-98	0%	5	-96	0%
6	-92	0%	6	-96	0%	6	-94	0%
7	-91	0%	7	-96	0%	7	-94	0%
8	-92	0%	8	-94	0%	8	-95	0%
9	-91	0%	9	-95	0%	9	-98	0%
10	-94	0%	10	-92	0%	10	-97	0%
11	-92	0%	11	-97	0%	11	-103	0%
12	-93	0%	12	-98	0%	12	-103	0%
13	-94	0%	13	-95	0%	13	-100	0%
14	-89	0%	14	-93	0%	14	-98	0%
15	-91	0%	15	-92	0%	15	-96	0%
16	-96	0%	16	-95	0%	16	-95	0%
17	-90	0%	17	-99	0%	17	-96	0%
18	-91	0%	18	-95	0%	18	-98	0%
19	-94	0%	19	-96	0%	19	-97	0%
20	-95	0%	20	-96	0%	20	-95	0%
RATA2	-93		RATA2	-95		RATA2	-97	
Terkirim		20	Terkirim		20	Terkirim		20
Tidak Terkirim		0	Tidak Terkirim		0	Tidak Terkirim		0
Rating Paket		100%	Rating Paket		100%	Rating Paket		100%

JARAK 1600 m			JARAK 1700 m			JARAK 1800 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-107	0%	1	-104	0%	1	-95	0%
2	-102	0%	2	-102	0%	2	-96	0%
3	-104	0%	3	-100	0%	3	-95	0%
4	-101	0%	4	-98	0%	4	-97	0%
5	-103	0%	5	-98	0%	5	-96	0%
6	-101	0%	6	-97	0%	6	-97	0%
7	-101	0%	7	-98	0%	7	-93	0%
8	-101	0%	8	-102	0%	8	-94	0%
9	-102	0%	9	-101	0%	9	-99	0%
10	-104	0%	10	-	100%	10	-99	0%
11	-102	0%	11	-96	0%	11	-103	0%
12	-101	0%	12	-97	0%	12	-97	0%
13	-101	0%	13	-95	0%	13	-97	0%
14	-101	0%	14	-95	0%	14	-101	0%
15	-105	0%	15	-94	0%	15	-95	0%
16	-101	0%	16	-96	0%	16	-98	0%
17	-101	0%	17	-97	0%	17	-95	0%
18	-104	0%	18	-99	0%	18	-98	0%
19	-104	0%	19	-97	0%	19	-	100%
20	-	100%	20	-104	0%	20	-99	0%
RATA2	-102		RATA2	-98		RATA2	-97	
Terkirim		19	Terkirim		19	Terkirim		19
Tidak Terkirim		1	Tidak Terkirim		1	Tidak Terkirim		1
Rating Paket		95%	Rating Paket		95%	Rating Paket		95%

JARAK 1900 m			JARAK 2000 m			JARAK 2100 m		
Paket	RSSI	Loss	Paket	RSSI	Loss	Paket	RSSI	Loss
1	-99	0%	1	-99	0%	1	-100	0%
2	-99	0%	2	-97	0%	2	-98	0%
3	-107	0%	3	-101	0%	3	-96	0%
4	-100	0%	4	-100	0%	4	-97	0%
5	-99	0%	5	-98	0%	5	-97	0%
6	-100	0%	6	-98	0%	6	-97	0%
7	-100	0%	7	-	100%	7	-99	0%
8	-99	0%	8	-104	0%	8	-97	0%
9	-98	0%	9	-105	0%	9	-98	0%
10	-99	0%	10	-101	0%	10	-99	0%
11	-98	0%	11	-99	0%	11	-99	0%
12	-98	0%	12	-102	0%	12	-100	0%
13	-98	0%	13	-103	0%	13	-99	0%
14	-102	0%	14	-104	0%	14	-99	0%
15	-100	0%	15	-101	0%	15	-100	0%
16	-100	0%	16	-102	0%	16	-97	0%
17	-100	0%	17	-99	0%	17	-98	0%
18	-98	0%	18	-105	0%	18	-97	0%
19	-99	0%	19	-102	0%	19	-99	0%
20	-107	0%	20	-101	0%	20	-100	0%
RATA2	-100		RATA2	-101		RATA2	-98	
Terkirim		20	Terkirim		19	Terkirim		20
Tidak Terkirim		0	Tidak Terkirim		1	Tidak Terkirim		0
Rating Paket		100%	Rating Paket		95%	Rating Paket		100%

JARAK 2200 m			JARAK 2300 m		
Paket	RSSI	Loss	Paket	RSSI	Loss
1	-101	0%	1	-	100%
2	-101	0%	2	-	100%
3	-99	0%	3	-	100%
4	-100	0%	4	-	100%
5	-102	0%	5	-	100%
6	-100	0%	6	-	100%
7	-101	0%	7	-	100%
8	-101	0%	8	-	100%
9	-100	0%	9	-	100%
10	-100	0%	10	-	100%
11	-101	0%	11	-	100%
12	-100	0%	12	-	100%
13	-102	0%	13	-	100%
14	-102	0%	14	-	100%
15	-101	0%	15	-	100%
16	-102	0%	16	-	100%
17	-102	0%	17	-	100%
18	-101	0%	18	-	100%
19	-105	0%	19	-	100%
20	-102	0%	20	-	100%
RATA2	-101		RATA2	#DIV/0!	
Terkirim		20	Terkirim		0
Tidak Terkirim		0	Tidak Terkirim		20
Rating Paket		100%	Rating Paket		0%