

DAFTAR ISI

LEMBAR PENGESAHAN PEMBIMBING	ii
LEMBAR PERNYATAAN KEASLIAN	Error! Bookmark not defined.
LEMBAR PENGESAHAN PENGUJI	Error! Bookmark not defined.
HALAMAN PERSEMBAHAN	v
HALAMAN MOTTO	vi
KATA PENGANTAR	vii
DAFTAR ISI.....	ix
DAFTAR GAMBAR	xi
ABSTRAK	xiv
BAB I PENDAHULUAN	1
1.1 Latar Belakang	1
1.2 Rumusan Masalah	2
1.3 Batasan Masalah.....	2
1.4 Tujuan dan Manfaat Penelitian	2
1.5 Sistematika Penulisan.....	3
BAB II TINJAUAN PUSTAKA.....	4
2.1. Sistem <i>Quadcopter</i>	4
2.1.1 Definisi <i>Quadcopter</i>	4
2.1.2 <i>3DR Pixhawk Flight Controller</i>	4
2.1.3 Elektronik & Mekanis	6
2.2. Definisi Sistem Telemetry.....	6
2.3. <i>Ground Station</i>	8
2.3.1 Definisi <i>Ground Station</i>	8
2.3.2 <i>First Person View (FPV)</i>	8

2.3.3 <i>Mission Planner</i>	9
2.4. Sensor <i>Fusion</i> suhu dan kelembaban SI7021	10
2.5. Arduino Nano.....	11
2.6. Penelitian Sejenis	12
BAB III PERANCANGAN SISTEM	14
3.1 <i>Quadcopter</i>	14
3.2 Transmisi data <i>Quadcopter – Ground Station</i>	15
3.2.1 <i>Quadcopter – Ground Station Laptop</i>	15
3.2.2 <i>Quadcopter – Ground Station Monitor</i>	16
3.3 <i>Datalogging</i>	17
3.4 Rangkaian Mux 74HC4051 – SI7021	19
BAB IV ANALISA DAN PEMBAHASAN	21
4.1 Pengujian Serial Monitoring	21
4.1.2 Serial Monitoring SI7021 & MUX74HC4051.....	21
4.2 Pengujian <i>Quadcopter</i>	23
4.2.1 Verifikasi Jarak pada sistem.....	26
4.3 Pengujian <i>Datalogging</i> SI7021	29
BAB V PENUTUP	39
5.1 Kesimpulan	39
5.2 Saran.....	39
DAFTAR PUSTAKA	40
LAMPIRAN	1

DAFTAR GAMBAR

Gambar 2.1 Salah satu contoh <i>Quadcopter</i>	4
Gambar 2.2 <i>3DR Pixhawk</i>	5
Gambar 2.3 Elektronik & Mekanis <i>Quadcopter</i>	6
Gambar 2.4 Modul Telemetri 433MHz	7
Gambar 2.5 <i>Ground Station</i>	8
Gambar 2.6 Beberapa komponen <i>First Person View (FPV)</i>	9
Gambar 2.7 Salah satu <i>Interface Mission Planner</i>	10
Gambar 2.8 Sensor SI2071 & modul sensor SI7021	11
Gambar 3.1 Diagram blok <i>Quadcopter</i> pada penelitian ini	15
Gambar 3.2 <i>3DR Sistem Telemetri</i>	16
Gambar 3.3 Diagram blok transmisi data <i>Quadcopter – groundcontrol Laptop</i> ..	16
Gambar 3.4 Diagram blok transmisi data <i>Quadcopter – Ground Station monitor</i>	17
Gambar 3.5 Diagram blok <i>Datalogging</i>	17
Gambar 3.6 Rangkaian modul <i>Micro SDCard</i> dengan <i>Arduino Nano</i>	18
Gambar 3.7 <i>Flowchart Datalogging</i>	19
Gambar 3.8 Rangkaian MUX SI7021	20
Gambar 4.1 Pengecekan RC (kiri), setting Telemetri (kanan).....	23
Gambar 4.2 Pengecekan komunikasi video dengan <i>Ground Station</i>	24
Gambar 4.3 Pengecekan GPS dan kompas	24
Gambar 4.4 Pengujian <i>Waypoint</i>	25
Gambar 4.5 Set <i>Home Point</i>	26
Gambar 4.6 <i>End Point</i>	27
Gambar 4.7 Verifikasi jarak menggunakan <i>Google Maps</i>	28
Gambar 4.8 Verifikasi jarak lurus	29
Gambar 4.9 <i>Record</i>	31
Gambar 4.10 <i>Pattern 1</i>	33
Gambar 4.11 <i>Pattern 2</i>	35

Gambar 4. 12 <i>Pattern 3</i>	37
Gambar 4. 13 <i>Tracing Pattern 3</i>	37

DAFTAR TABEL

Tabel 4.1 Serial Monitoring 2 Sensor SI7021 & Mux74hc4051	22
Tabel 4.2 <i>Datalogging</i> sensor SI7021.....	30
Tabel 4.3 <i>Datalogging pattern</i> 1.....	32
Tabel 4.4 <i>Datalogging pattern</i> 2.....	34
Tabel 4.5 <i>Datalogging pattern</i> 3.....	36