

Verified UAV Test Command Set

Confirmed Baseline Parameters

- Actual Bandwidth: 12.8Kbps (100 commands/sec × 16 bytes/command)
- Command Rate: 100 Hz
- Latency: 0.03 ms
- Packet Loss Rate: 0%

Part 1: Vertical Ascent/Descent Test

1. Baseline Test

Baseline Test - No Network Limitation

```
python3 uav_network_test.py --test vertical
```

2. Bandwidth Limitation Test

Bandwidth Limitation Tests

Level 2: 10.0 Kbps (approximately 78% of baseline)

```
python3 uav_network_test.py --test vertical --bandwidth 10.0
```

Level 3: 5.0 Kbps (approximately 39% of baseline)

```
python3 uav_network_test.py --test vertical --bandwidth 5.0
```

Level 4: 1.28 Kbps (10% of baseline)

```
python3 uav_network_test.py --test vertical --bandwidth 1.28
```

Level 5: 0.5 Kbps (approximately 4% of baseline)

```
python3 uav_network_test.py --test vertical --bandwidth 0.5
```

Level 6: 0.25 Kbps (approximately 2% of baseline)

```
python3 uav_network_test.py --test vertical --bandwidth 0.25
```

Level 7: 0.225 Kbps (approximately 1.8% of baseline)

```
python3 uav_network_test.py --test vertical --bandwidth 0.225
```

Level 8: 0.2 Kbps (approximately 1.6% of baseline - extreme test, unstable)

```
python3 uav_network_test.py --test vertical --bandwidth 0.2
```

3. Latency Test

Level 2: 50ms

```
python3 uav_network_test.py --test vertical --latency 50
```

Level 3: 100ms

```
python3 uav_network_test.py --test vertical --latency 100
```

Level 4: 200ms

```
python3 uav_network_test.py --test vertical --latency 200
```

Level 5: 500ms

```
python3 uav_network_test.py --test vertical --latency 500
```

4. Packet Loss Test

Level 2: 5%

```
python3 uav_network_test.py --test vertical --packet_loss 5
```

Level 3: 10%

```
python3 uav_network_test.py --test vertical --packet_loss 10
```

Level 4: 20%

```
python3 uav_network_test.py --test vertical --packet_loss 20
```

Level 5: 30%

```
python3 uav_network_test.py --test vertical --packet_loss 30
```

Level 6: 97% (extreme test)

```
python3 uav_network_test.py --test vertical --packet_loss 97
```

Level 7: 98% (extreme test, unstable)

```
python3 uav_network_test.py --test vertical --packet_loss 98
```

Part 2: Square Trajectory Test

1. Baseline Test

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5
```

2. Bandwidth Limitation Test

Square Trajectory Test - Bandwidth Limitation Test

Level 2: 10.0 Kbps (approximately 78% of baseline)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --bandwidth 10.0
```

Level 3: 5.0 Kbps (approximately 39% of baseline)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --bandwidth 5.0
```

Level 4: 1.28 Kbps (10% of baseline)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --bandwidth 1.28
```

Level 5: 0.5 Kbps (approximately 4% of baseline)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --bandwidth 0.5
```

Level 6: 0.25 Kbps (approximately 2% of baseline)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --bandwidth 0.25
```

Level 7: 0.225 Kbps (approximately 1.8% of baseline)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --bandwidth 0.225
```

Level 8: 0.2 Kbps (approximately 1.6% of baseline - extreme test, unstable)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --bandwidth 0.2
```

3. Latency Test

Level 2-5 (same as vertical test)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --latency 50
```

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --latency 100
```

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --latency 200
```

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --latency 500
```

4. Packet Loss Test

Level 2-5 (same as vertical test)

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --packet_loss 5
```

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --packet_loss 10
```

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --packet_loss 20
```

```
python3 uav_network_test.py --test square --side 1.0 --height 0.5 --packet_loss 30
```