

A Presentation on GNSS Training

GNSS Training, Team No: xxx

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Parameters Setting using U Center

COM4 - u-center 19.11.01 - [Messages - UBX - CFG (Config) - GNSS (GNSS Config)]

File Edit View Player Receiver Tools Window Help

CFG (Config)

- ANT (Antenna Settings)
- BATCH (Batch mode output)
- CFG (Configuration)
- DAT (Datum)
- DGNSS (Differential GNSS configuration)
- DOSC (Disciplined Oscillator)
- EKF (EKF Settings)
- ESFGWT (Gyro+Wheeltick)
- ESRC (External Source Config)
- FXN (Fix Now Mode)
- GEOFENCE (Geofence Config)
- GNSS (GNSS Config)**
- HNR (High Nav Rate)
- INF (Inf Messages)
- ITFM (Jamming/Interference Monitor)
- LOGFILTER (Log Settings)
- MSG (Messages)
- NAV5 (Navigation 5)
- NAVX5 (Navigation Expert 5)
- NMEA (NMEA Protocol)
- ODO (Odometer/Low-Speed COG filter)
- PM (Power Management)
- PM2 (Extended Power Management)
- PMS (Power Management Setup)
- PRT (Ports)
- PWR (Power)
- RATE (Rates)
- RINV (Remote Inventory)
- RST (Reset)
- RXM (Receiver Manager)
- SBAS (SBAS Settings)
- SLAS (SLAS settings)
- SMGR (Sync Manager Config)
- TMODE (Time Mode)
- TMODE2 (Time Mode 2)
- TMODE3 (Time Mode 3)

UBX - CFG (Config) - GNSS (GNSS Config)

ID	GNSS	Configure	Enable	Channels	Signals	
				min	max	
0	GPS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	16	<input checked="" type="checkbox"/> L1C/A
1	SBAS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	3	<input checked="" type="checkbox"/> L1C/A
2	Galileo	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	8	<input checked="" type="checkbox"/> E1
3	BeiDou	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	16	<input checked="" type="checkbox"/> B1
4	IMES	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	8	<input type="checkbox"/> L1C/A
5	QZSS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	3	<input checked="" type="checkbox"/> L1C/A <input checked="" type="checkbox"/> L1S
6	GLONASS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	14	<input checked="" type="checkbox"/> L10F
7	IRNSS	<input type="checkbox"/>	<input type="checkbox"/>			

Number of channels available: 32

Number of channels to use: 32 Auto set

For specific SBAS configuration use

COM4 - u-center 19.11.01 - [Messages - UBX - CFG (Config) - PRT (Ports)]

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UBX - CFG (Config) - PRT (Ports)

Target: 3 - USB

Protocol in: 0+1+5 - UBX+NMEA+RTCM3

Protocol out: 0+1 - UBX+NMEA

Extended TX timeout (>=FW7.00)

TX-Ready Feature (>=FW7.00)

Enable

Inverse Polarity (low-active)

Threshold: 0

PID: 0

COM4 - u-center 19.11.01 - [Messages - UBX - CFG (Config) - RATE (Rates)]

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UBX - CFG (Config) - RATE (Rates)

Time Source: 1 - GPS time

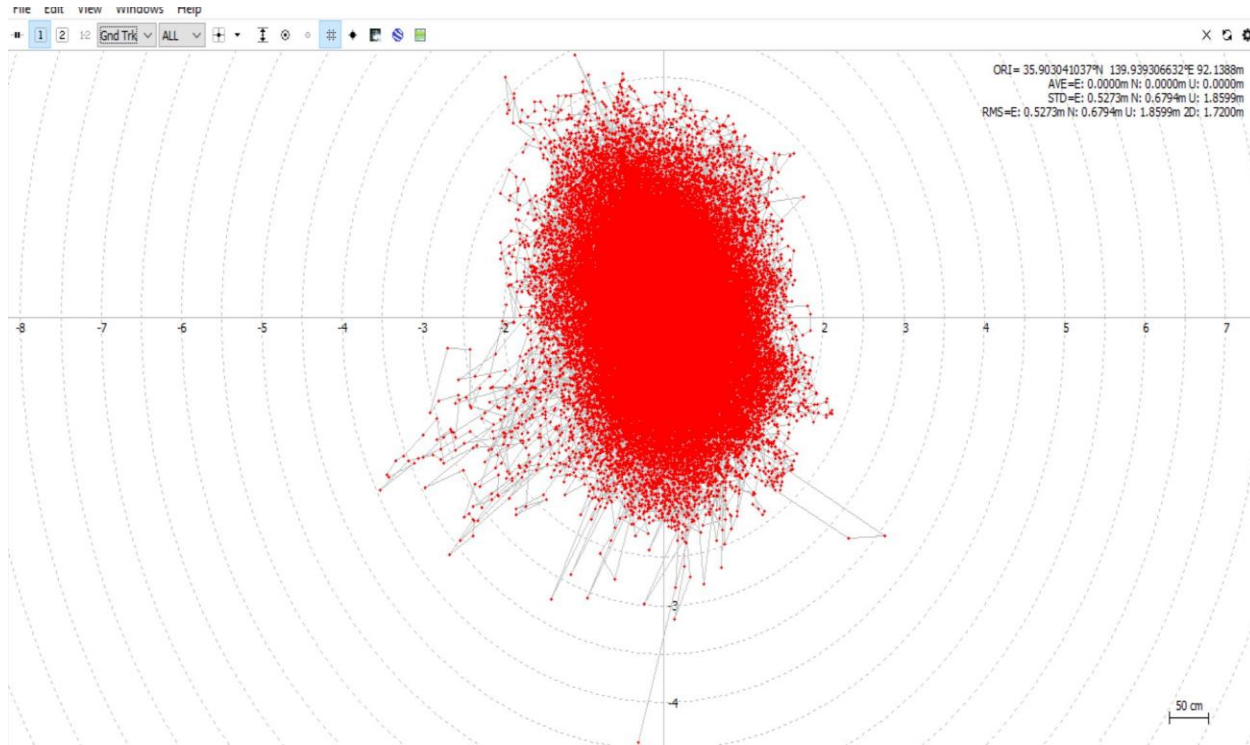
Measurement Period: 1000 [ms]

Measurement Frequency: 1.00 [Hz]

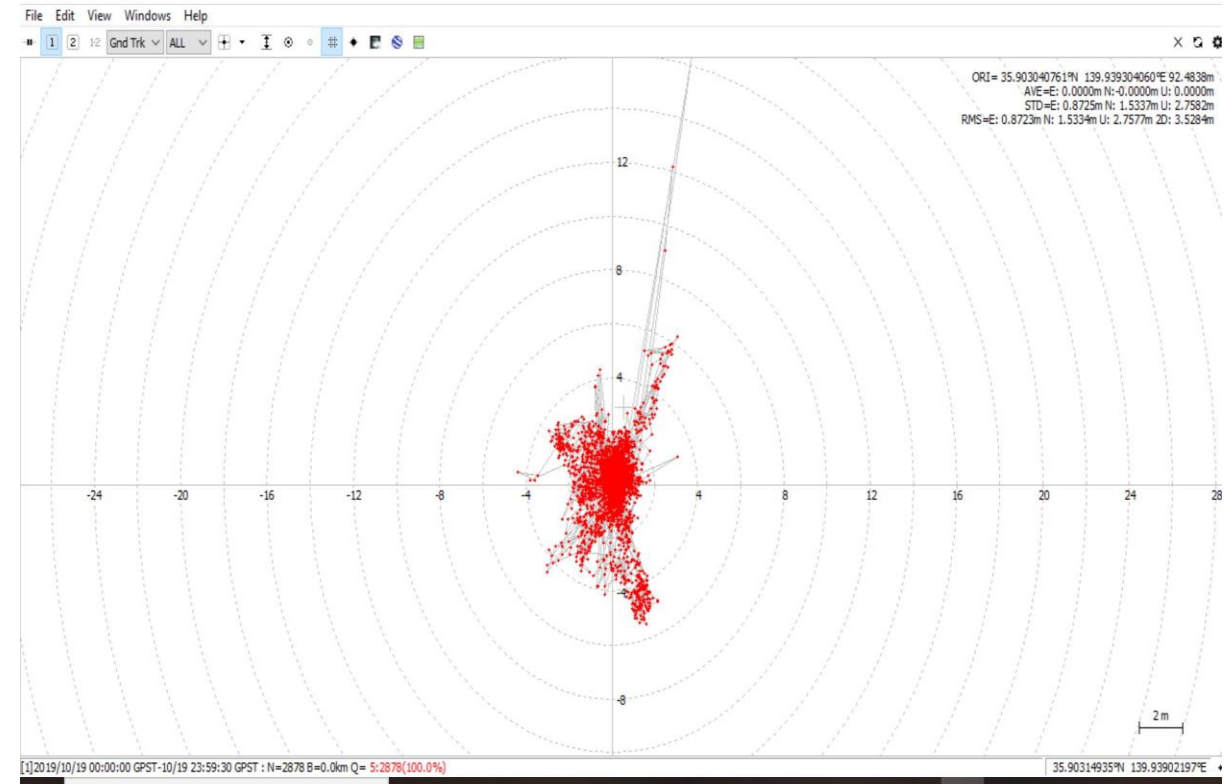
Navigation Rate: 1 [cyc]

Navigation Frequency: 1.00 [Hz]

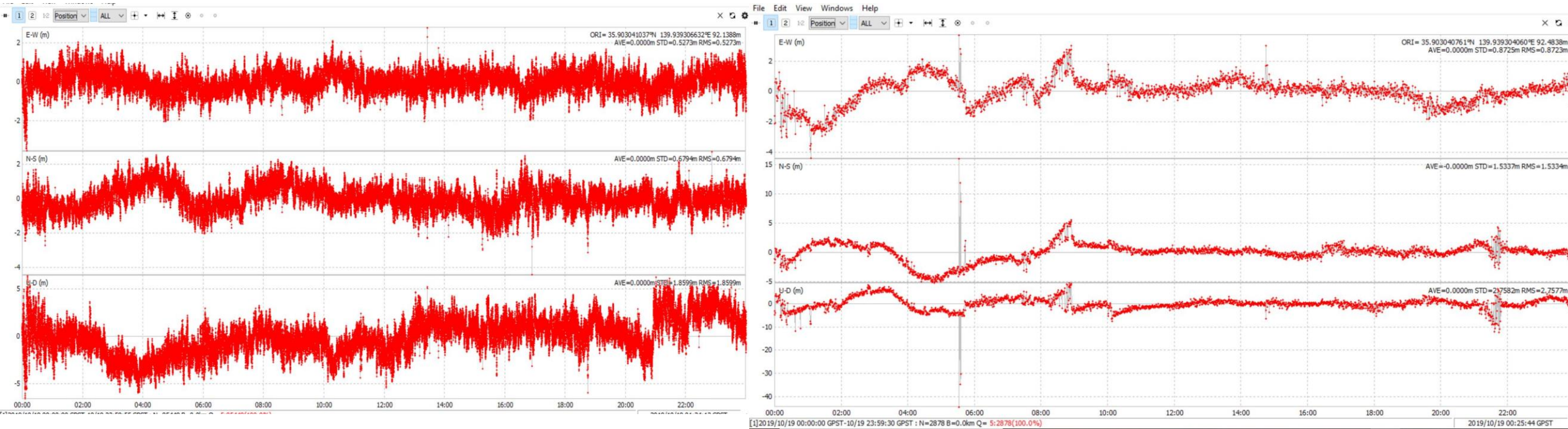
• Data Processing using RtkLib



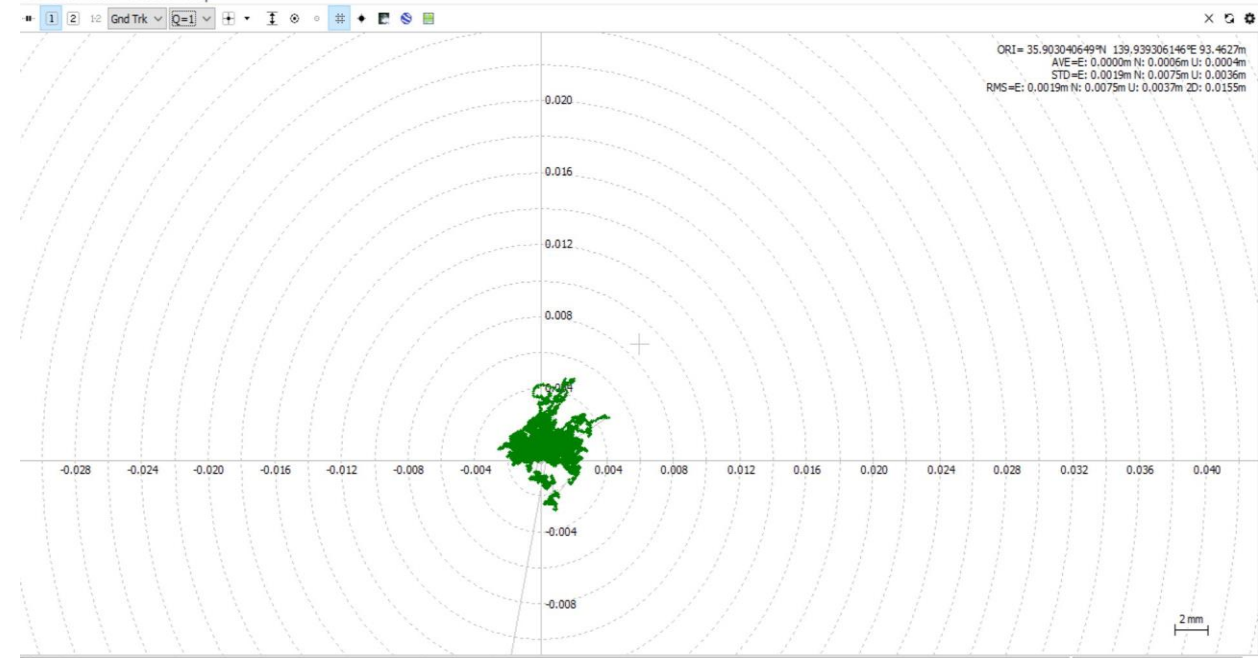
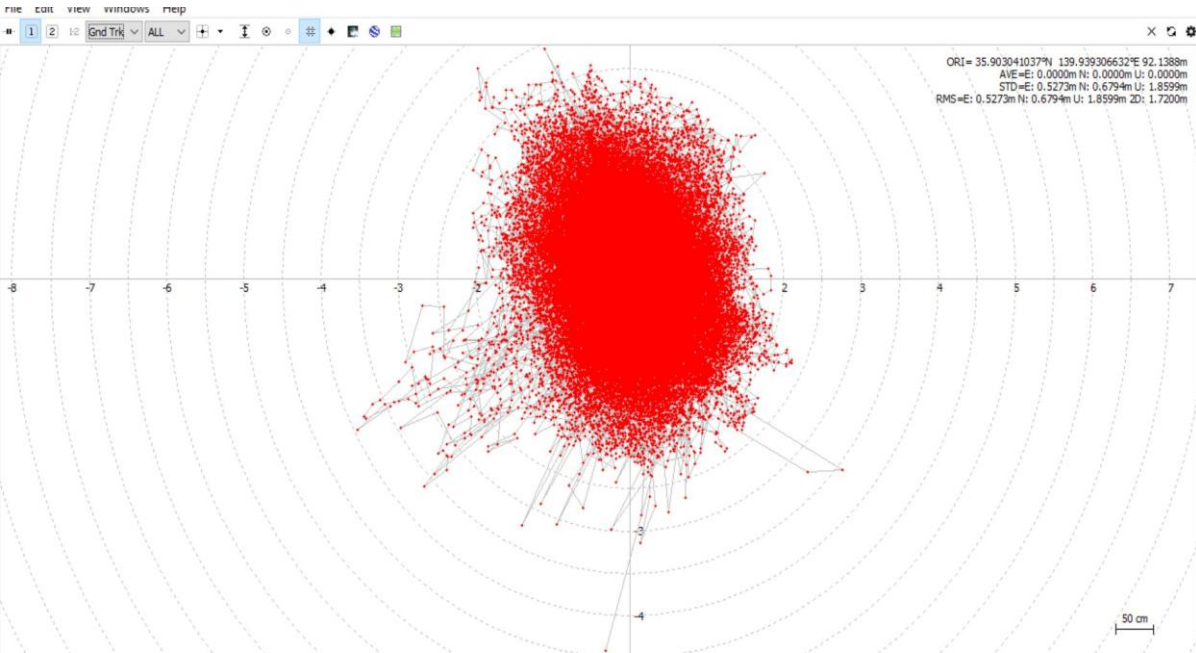
SPP of M8T Receiver



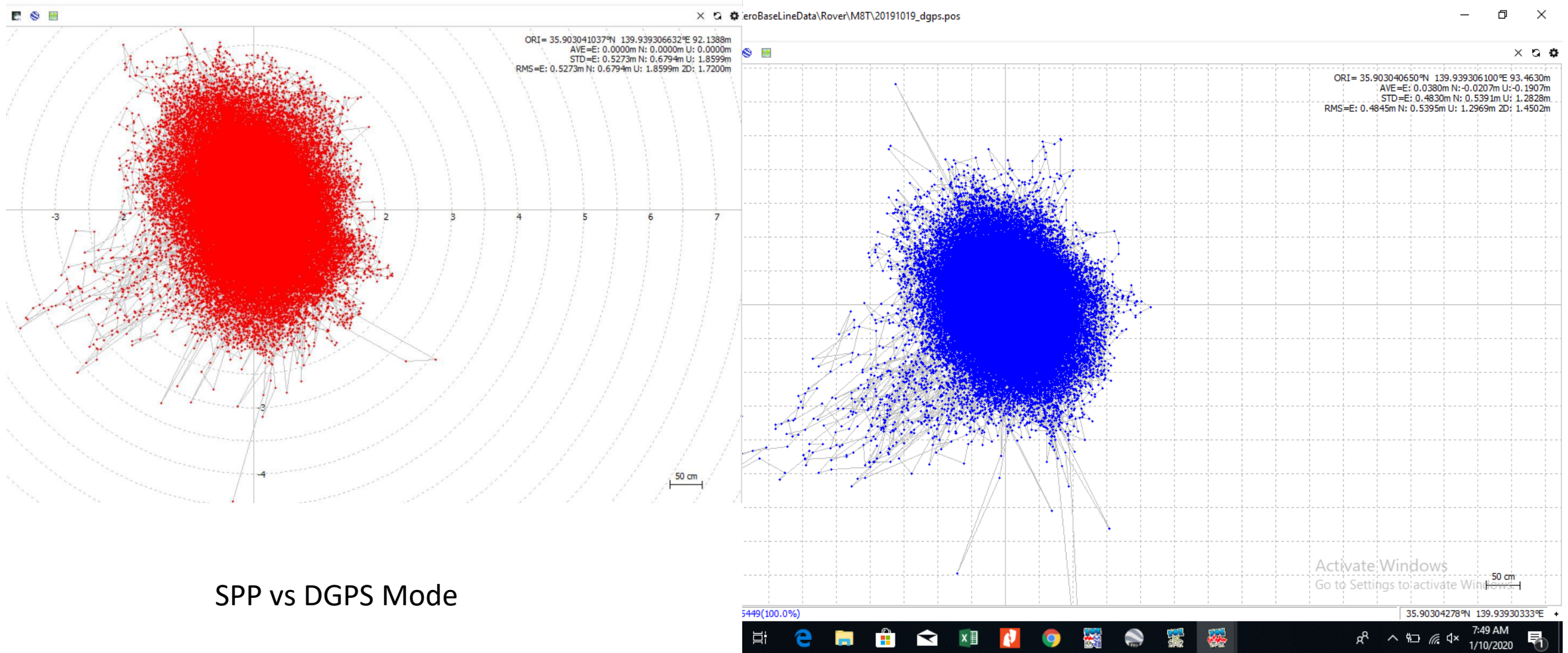
SPP of NetR9



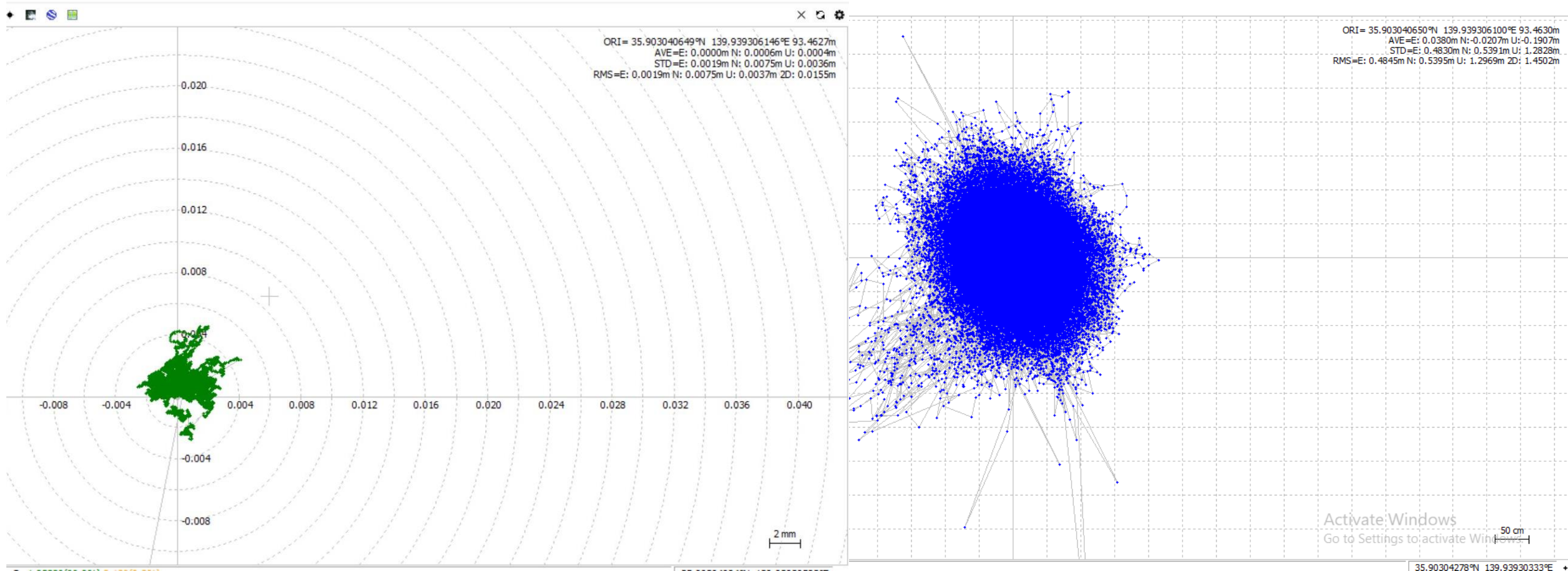
Position Plot (M8T Vs NetR9 SPP Mode)



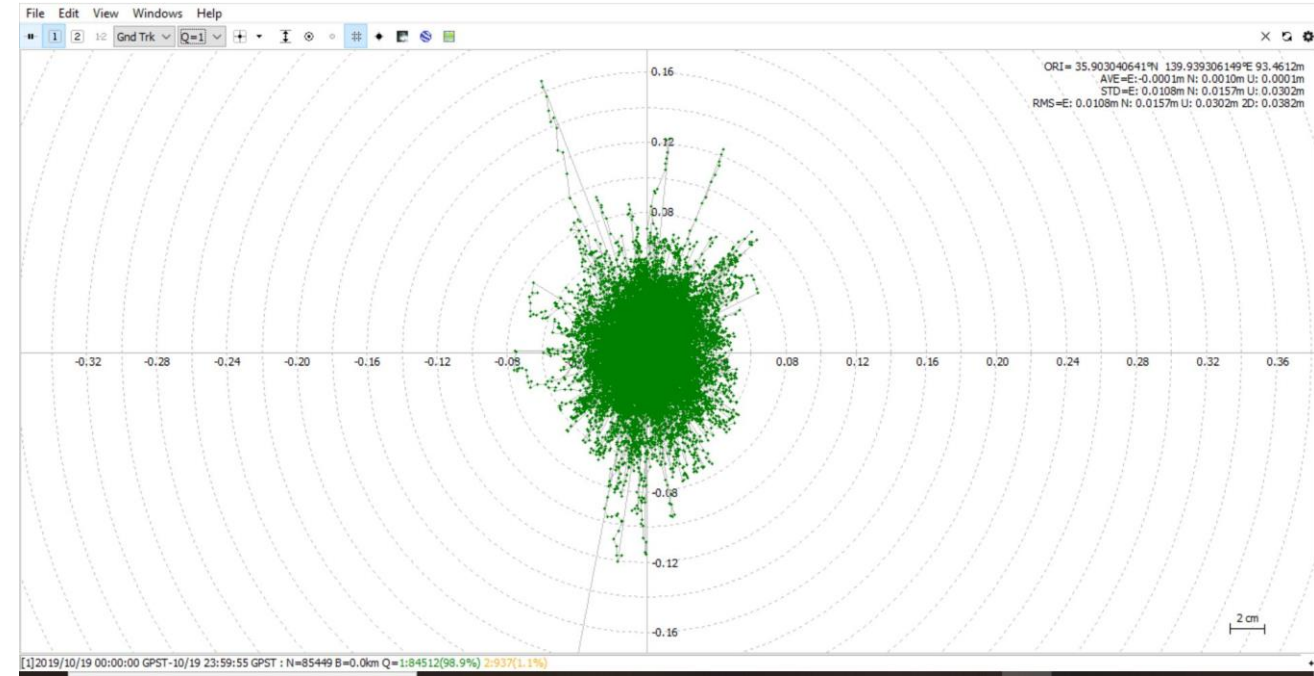
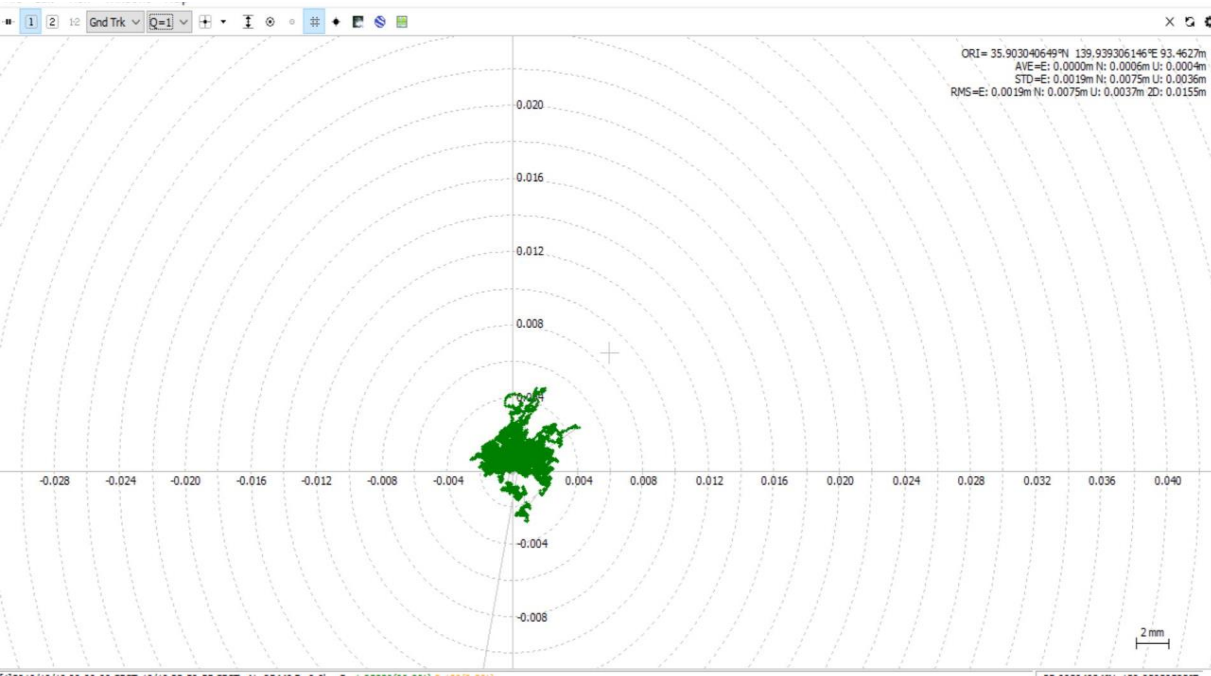
SPP (M8T) vs Static Mode



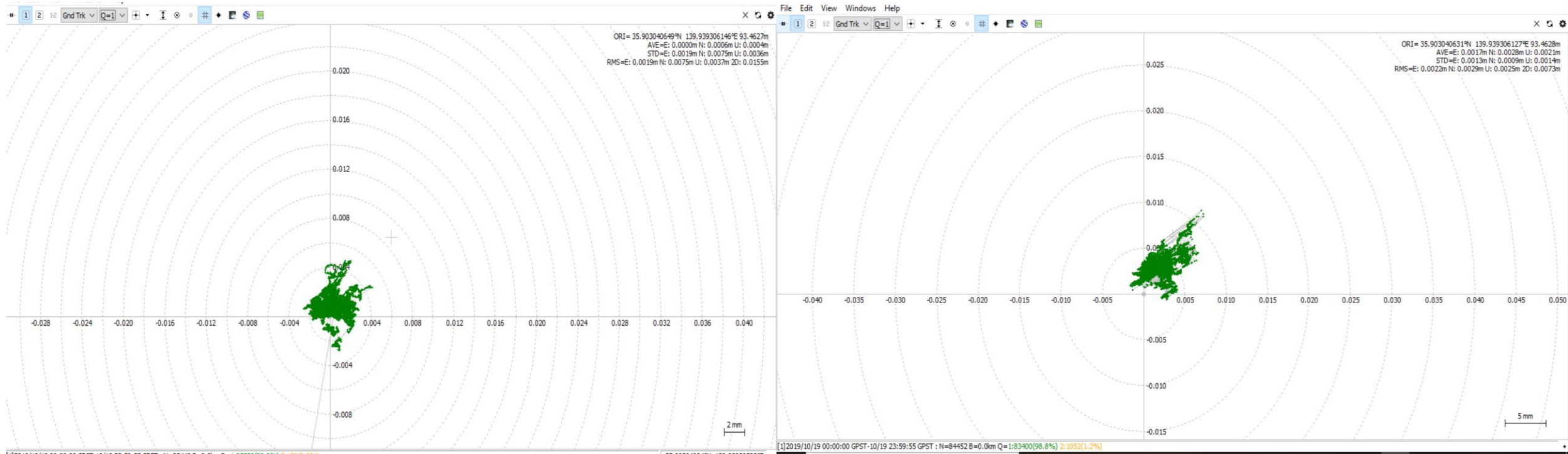
SPP vs DGPS Mode



Static Vs DGPS Mode



Static Vs Kinematic



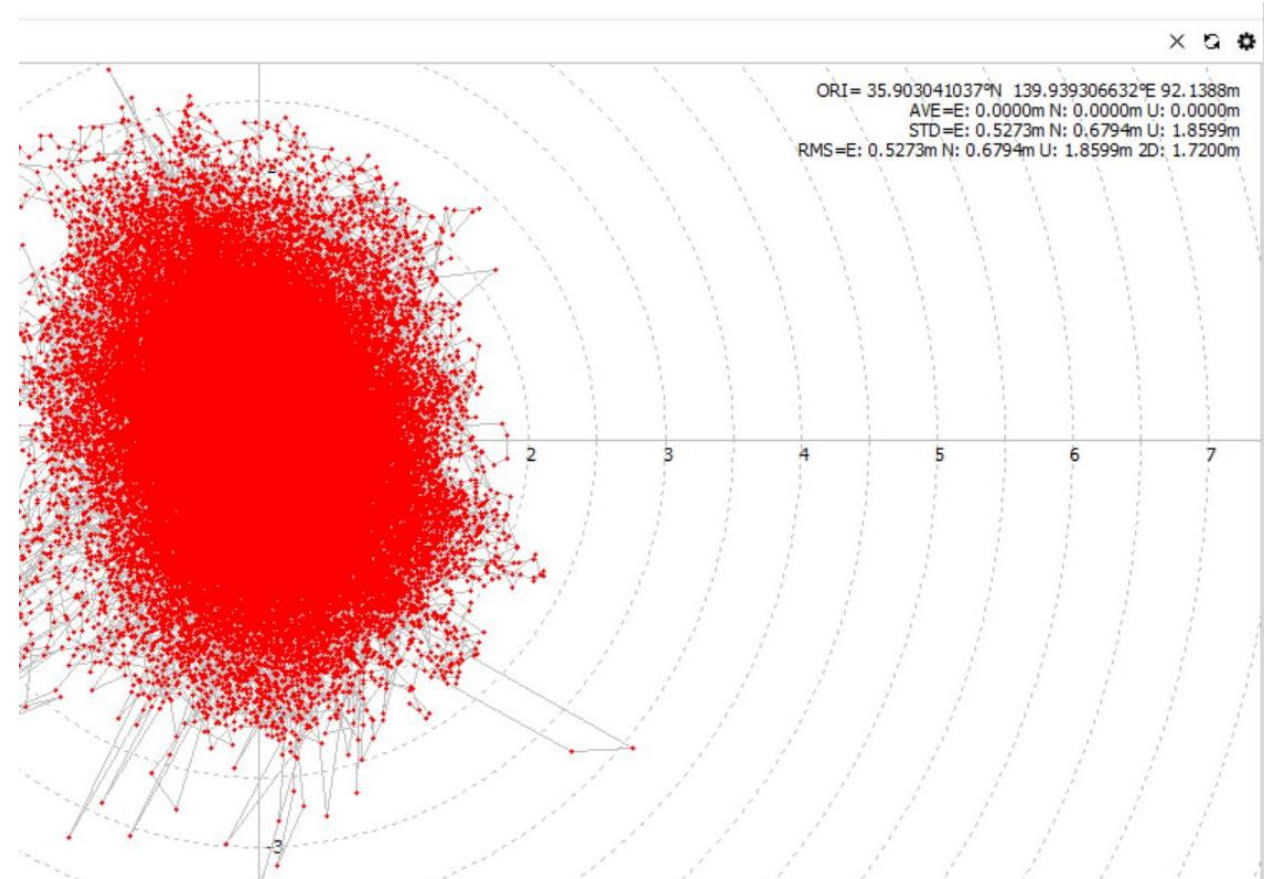
Static with True Base Coordinates

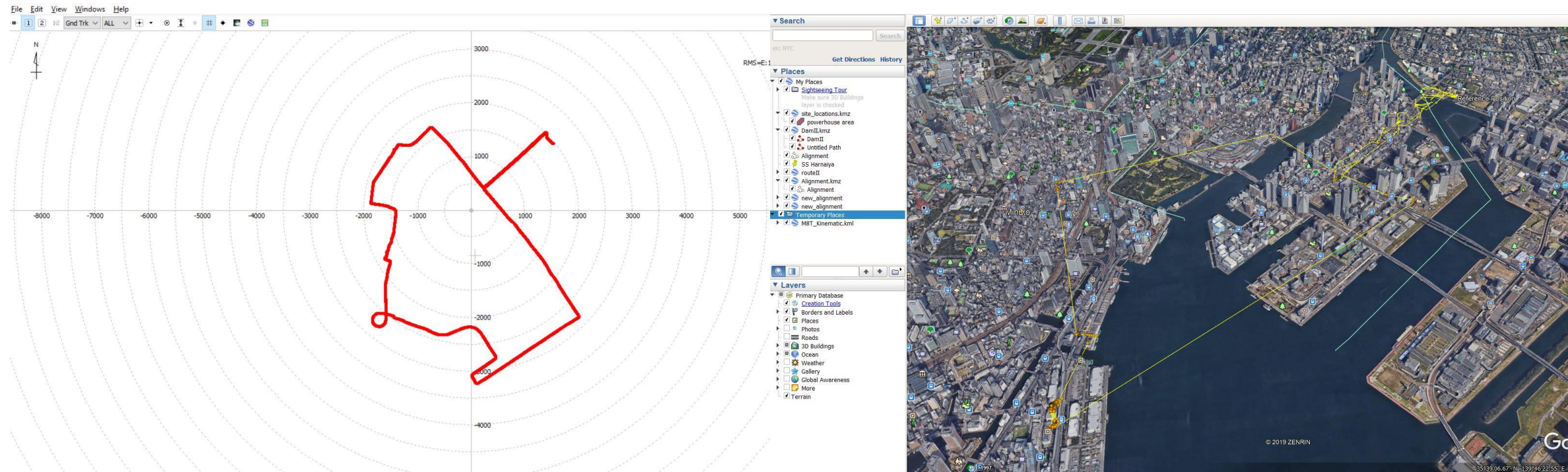
- CEP Computation of SPP from NETR9

CEP in X-ecef = 0.584

CEP in Y-ecef = 0.332

CEP in Z-ecef = 0.445





Dynamic Data Visualization from M8T in Post-processed Kinematic Mode (NETR9 as Base Station).

• Real Time Data Collection using RtkDroid

