Jammertest Testplan

Jammertest Consortium

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Norwegian Public Roads Administration

Contents

Introduction

Spesifications of tests

The sections below lists all test in the

1: Continuous stationary low power jamming with commercially available jammers

Rationale

The main objective is to observe how the J/S signal affect the availability of PNT, and/or how it produces inaccurate PNT data, when the jamming signal (J) is generated by low-power jammers commercially available online. It will also allow participants to create a reference against other, more sophisticated transmission test cases. Additionally, as these types of jammers are the ones one is most likely to meet in the real world, capturing and storing the signals from these jammers for later use in labs could be useful. The use of continuous low power jamming will block out only a certain area. The attendees may therefore test the range of such a low-power jammer. Technical information on jammers can be found as appendix. The jammers used are acquirable from the internet, and each will either be representable for a specific jammer category, or be of special interest for the rest of the test week.

Test setup

All tests will be performed as follows: The jammer will be activated while placed outside, on top of a stationary vehicle. The jammer will be kept turned on for two (2) minutes, and a two-minute break will be held between each test case. This scenario can be performed and/or repeated at multiple test areas. When activated, all jammers will have all possible GNSS jamming bands activate. If all 28 low effect jammers are tested in sequence, the test will take approximately 2 hours and 2 minutes, which include a 10-minute extra break at the end of the last jammer.

Areas

[1 , 3]

Technical contact

Nicolai Gerrard, Nkom

Test within this testgroup

1.1 Jammer S1.1

Test with jammer S1.1

Power or power range

1w

Test running time

2 minutes

Location of transmitter

Bleik community parkinglot

Comment

Spesification of jammer can be found list of jammers

1.2 Jammer S1.2

Test with jammer S1.1

Power or power range

1w

Test running time

2 minutes

Location of transmitter

Bleik community parkinglot

Comment

Spesification of jammer can be found list of jammers

2: Continuous stationary high-power jamming with CW

Rationale

The main objective is to observe how the Jammer signal to GNSS signal (J/S) ratio affect the availability of PNT, and/or how it produces inaccurate PNT data. The use of continuous high-power jamming will block GNSS signals in a large area at the event. The attendees may therefore test their equipment at different ranges to such a high-power jammer. There will be transmitted with a continuous wave (CW) modulation (single frequency component) using Right Hand Circular Polarized (RHCP) antennas. The use of a 20 W jammer will result in among the highest J/S ratios during the event. The attendees can change distance to the transmitter and observe the changes and try to identify the protection ratio for their GNSS receiving system.

Test setup

Each jamming session will last 10 minutes, with a 10-minute break between each test. The jammer employed will be 'Porcus Major'

Areas

[1]

Technical contact

Anders Rødningsby, FFI

Test within this testgroup

1.1 Jammer S1.1

Test with jammer S1.1

Power or power range

1w

Test running time

2 minutes

Location of transmitter

Bleik community parkinglot

Comment

Spesification of jammer can be found list of jammers

1.2 Jammer S1.2

Test with jammer S1.1

Power or power range

1w

Test running time

2 minutes

Location of transmitter

Bleik community parkinglot

Comment

Spesification of jammer can be found list of jammers