

# NORDIC ID

## How to retune antenna of Nordic ID Medea Adaptive Cross Dipole

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Version 1.1

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## 1 Validity of guide

This guide is valid for Nordic ID Medea Adaptive Cross Dipole UHF RFID reader.

## 2 When and why retuning of antenna is needed?

Retuning of antenna is needed if Medea's protective antenna cover is used with the Nordic ID Medea Adaptive Cross Dipole UHF RFID reader. The protective antenna cover affects tuning of antenna and therefore decreases RFID performance of the device. Performance decrease can be noticeable in some use cases.

The retuning of antenna will take the protective antenna covers into account and restores RFID performance to the level where it should be. It should be noted if the retuning of antenna has been done with the protective antenna cover, the retuning needs to be done again without the protective antenna cover if the protective antenna covers are taken off.

**NOTE!** Antenna tuning needs to be done in a free space environment as illustrated in the Picture 1. Keep the device away from all objects, including your body, during the tuning process.



Picture 1

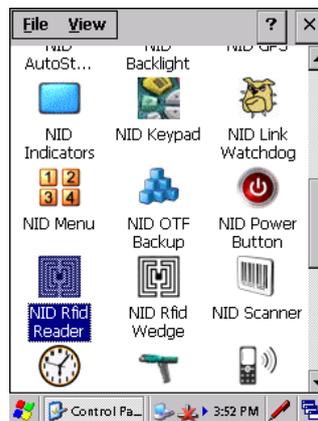
### 3 How to retune antenna

#### 3.1 Basic retuning process

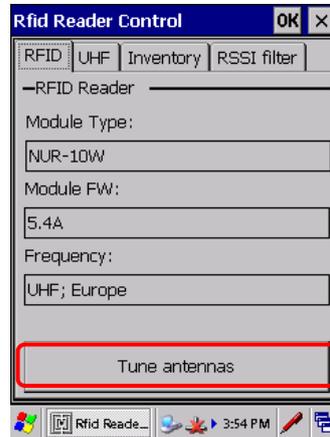
Retuning of antenna is easy but it should be noted that protective antenna cover need to be on the antenna when the retuning is performed. The retuning can be done with NID Rfid Reader application. First open Control Panel by pressing *Windows Key* and selecting *Settings -> Control Panel*.



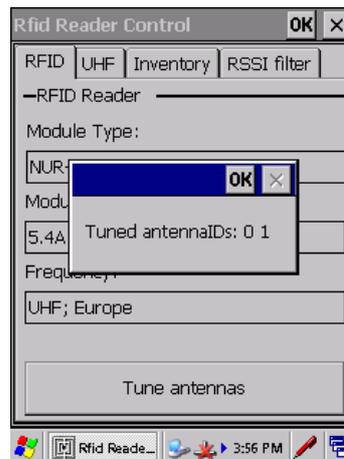
Open the *NID Rfid Reader* application



Keep the device away from all objects, including your body, during the tuning process. Start the tuning process by pressing *Tune antennas* button and wait a moment



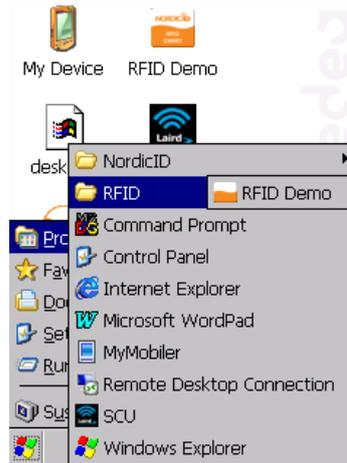
Tuning is completed successfully when Tuned antennaIDs text comes visible. Press OK and you're done!



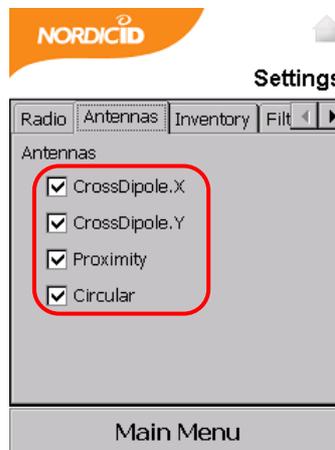
**NOTE!** The NID Rfid Reader retunes only internal antenna elements that are enabled. If one wants to retune all the antenna elements, the antenna elements need to be enabled first. More information can be found from the [chapter 3.2](#).

### 3.2 Retuning of all antenna elements

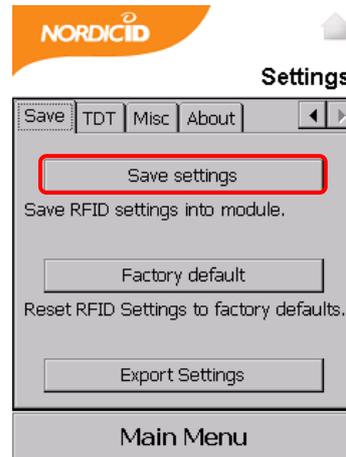
If all antenna elements need to be retuned, the antenna elements need to be enabled first. Enabling can be done via RFID Demo application. The RFID Demo application can be opened by pressing *Windows Key* and selecting *Programs -> RFID -> RFID Demo*.



Select *Settings -> Antennas* and enable all needed antenna elements.



Save settings from *Save* tab by pressing *Save settings* button.



Select *Main Menu* -> *Exit* in order to close the RFID Demo application. Next step is to perform tuning process based on the instructions from the [chapter 3.1](#). Disable antenna elements that are not needed after the retuning from the RFID Demo application.

### 3.3 Retuning of antenna using NUR.API

Retuning of antenna can be done via NUR.API. The retuning can be done when needed using relevant tuning commands or using automatic tuning process. The automatic tuning process means that the module, by itself, periodically checks the reflected power during e.g. inventory stream and tries to find better internal match for the connected antenna.

More information about NUR.API can be found from Support site of the Nordic ID.

<http://www.nordicid.com/en/home/support/>