# InPlay NanoBeacon™ IN100 Command Tool Application Notes

NanoBeacon™

Specifications and information are subject to change without notice.

# About Documentation

| | | |
|---|---|---|
| **Document Name** | IN100C0 Application Notes | |
| **Part number** | | |
| **Control Number** | IN1IDOC-HC-IN100-EN-V0_9 | External User |
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| Product Status | Document Content | Data Status |
|---|---|---|
| In Development | Target specification / MRD | Initial release |
| Engineering Document | Main functions and features description | Preliminary version |
| Official Release Document | Description of all functional features | Subject to revision and updates |

This document applies to the following products:

| Document number | Applicable Products | Document Status |
|---|---|---|
| | IN100-D1-R-RC1I | Engineering Document |
| | IN100-Q1-R-RC1I | Engineering Document |
| | IN100-D1-R-RC1F | Engineering Document |
| | IN100-Q1-R-RC1F | Engineering Document |
| | | |

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# 1. Introduction

The NanoBeacon IN100 MP Command tool is used to burn and test the IN100 using the command line mode. The IN100 device supports a host controller interface, as shown in Figure **1**, and this document will describe how to burn the device with a host controller through this interface.

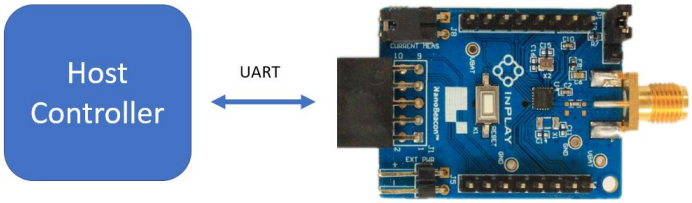
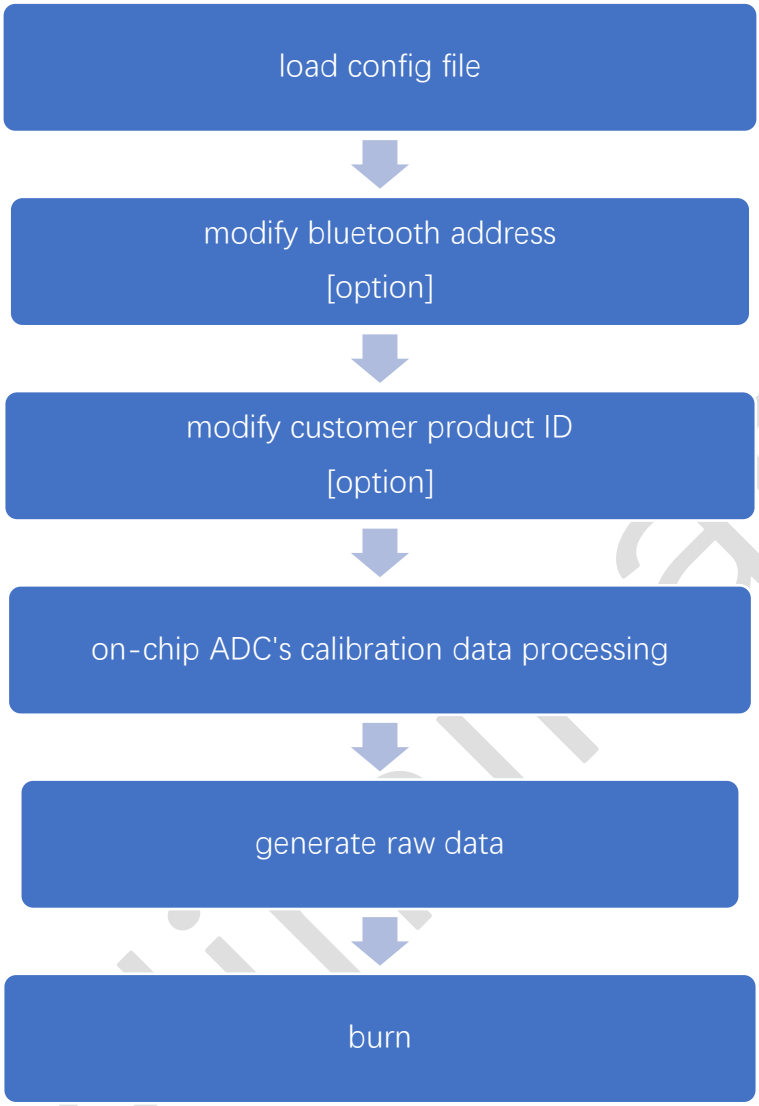



Figure 1: NanoBeacon device in host controller mode

The MP Command Tool is used with NanoBeacon Config Tool to facilitate the user to do the device programming and test during mass production.

The process is as follows.

1. First debug the prototype with NanoBeaconConfigTool according to the application requirements. Then save the configuration to a file.
2. Use the config file saved in step 1 as input and start the executable file beacon_mp_cmd.exe of MP Command Tool via command line to burn it into the device.
3. The operation flow of the MP Command Tool is as follows



# 2. Commands

## 2.1 burn

| Arguments | Example | Description | |
|---|---|---|---|
| **-c** | beacon_mp_cmd.exe -c burn | burn eFuse command | Mandator |
| **-p** | beacon_mp_cmd.exe -c burn -p COM4 | Which UART port to use | Mandator |
| **-i** | beacon_mp_cmd.exe -c burn -p COM4 -i x.cfg | Which config file to use as input file. **The config file comes from NanoBeacon config tool.** | Mandator |
| **-a** | beacon_mp_cmd.exe -c burn -p COM4 -i x.cfg -a 0605AE030201 | Using the argument to update Bluetooth device address. Six bytes of hexadecimal data, MSB first. Addresses of multiple advertising sets are separated by semicolons (;). | Option |
| **-d** | beacon_mp_cmd.exe -c burn -p COM4 -i x.cfg -d 0000000000F1 | Using the argument to update customer product ID. Six bytes of hexadecimal data, MSB first. | Option |
| **-r** | beacon_mp_cmd.exe -c burn -p COM4 -r 1 -i x.cfg | 1 : reset chip after brun;<br>0 : not reset chip after burn | Option |

burn example 1，Configuration from nano_beacon_config.cfg file：
beacon_mp_cmd.exe -c burn -p COM4 -i nano_beacon_config.cfg

burn example 2，modify Bluetooth device address based config file (nano_beacon_config.cfg)：
beacon_mp_cmd.exe -c burn -p COM4 -i nano_beacon_config.cfg -a 0605AE030201

example 3，modify multiple addresses:
beacon_mp_cmd.exe -c burn -p COM4 -i nano_beacon_config.cfg -a 0605AE030201; 0605AE030202

example 4，modify Bluetooth device address and customer product id：
beacon_mp_cmd.exe -c burn -p COM4 -i nano_beacon_config.cfg -a 0605AE030201 -d 0000000000F1

## 2.2 RAM test

| Arguments | Example | Description | |
|---|---|---|---|
| **-c** | beacon_mp_cmd.exe -c ram | RAM test command | Mandator |
| **-p** | beacon_mp_cmd.exe -c ram -p COM4 | Which UART port to use | Mandator |
| **-i** | beacon_mp_cmd.exe -c ram -p COM4 -i x.cfg | Which config file to use as input file. **The config file comes from NanoBeacon config tool.** | Mandator |
| **-a** | beacon_mp_cmd.exe -c ram -p COM4 -i x.cfg -a 0605AE030201 | Using the argument to update Bluetooth device address. Six bytes of hexadecimal data, MSB first. Addresses of multiple advertising sets are separated by semicolons (;). | Option |
| **-d** | beacon_mp_cmd.exe -c ram -p COM4 -i x.cfg -d 0000000000F1 | Using the argument to update customer product ID. Six bytes of hexadecimal data, MSB first. | Option |

RAM test example 1, Configuration from nano_beacon_config.cfg file:
beacon_mp_cmd.exe -c ram -p COM4 -i nano_beacon_config.cfg

RAM Test example 2, modify Bluetooth device address:
beacon_mp_cmd.exe -c ram -p COM4 -i nano_beacon_config.cfg -a 0605AE030201

example 3, modify multiple addresses:
beacon_mp_cmd.exe -c ram -p COM4 -i nano_beacon_config.cfg -a 0605AE030201; 0605AE030202

example 4, modify Bluetooth device address and customer product id:
beacon_mp_cmd.exe -c ram -p COM4 -i nano_beacon_config.cfg -a 0605AE030201 -d 0000000000F1

## 2.3 DTM test start

| Arguments | Example | Description | |
|---|---|---|---|
| **-c** | beacon_mp_cmd.exe -c dtm_start | DTM test start command | Mandator |
| **-p** | beacon_mp_cmd.exe -c dtm_start -p COM4 | Which UART port to use | Mandator |
| **-x** | beacon_mp_cmd.exe -c dtm_start -p COM4 -x 37,25,0,1M,11,3 | <ch,tx_len,tx_payload,phy,cap,tx_power><br>Parameters to be set for DTM test. There are six parameters in total, separated by commas (,).<br>ch: physical channel 0~39;<br>tx_len: length for transmitting 0 ~ 255;<br>tx_payload: index of payload pattern 0~7<br>0 - prbs 9<br>1 - 0x0f<br>2 - 0x55<br>3 - prbs 15<br>4 - 0xff<br>5 - 0x0<br>6 - 0xf0<br>7 - 0xaa<br>phy: '1M' for 1M PHY，'125K' for 125K coded PHY<br>cap: on-chip capacitor code 0~15<br>tx_power: tx power, dBm | Mandator |

## 2.4 DTM test stop

| Arguments | Example | Description | |
|---|---|---|---|
| **-c** | beacon_mp_cmd.exe -c dtm_stop | DTM test stop command | Mandator |
| **-p** | beacon_mp_cmd.exe -c dtm_stop -p COM4 | Which UART port to use | Mandator |

## 2.5 Carrier test start

| Arguments | Example | Description | |
|---|---|---|---|
| **-c** | beacon_mp_cmd.exe -c carrier_start | Start carrier test command | Mandator |
| **-p** | beacon_mp_cmd.exe -c carrier_start -p COM4 | Which UART port to use | Mandator |
| **-x** | beacon_mp_cmd.exe -c carrier_start -p COM4 -x 37,11,3 | <ch,cap,tx_power><br>Parameters to be set for carrier test. There are three parameters in total, separated by commas (,).<br>ch: physical channel 0~39;<br>cap: on-chip capacitor code 0~15<br>tx_power: tx power, dBm | Mandator |

## 2.6 Carrier test stop

| Arguments | | Example | Description | |
|---|---|---|---|---|
| **-c** | | beacon_mp_cmd.exe -c carrier_stop | Stop carrier test command | Mandator |
| **-p** | | beacon_mp_cmd.exe -c carrier_stop -p COM4 | Which UART port to use | Mandator |

# 3. Revision History

| Revision | Description | Prepared By | Date |
|---|---|---|---|
| Ver 0.9 | Preliminary version | WZ, Liu | 2022-05-12 |
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