

N21

Non-IP Application Guide

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Notice

This document provides guide for users to use N21.

This document is intended for system engineers (SEs), development engineers, and test engineers.

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About This Document

Scope

This document is applicable to the N21 series.

Audience

This document is intended for [system engineers \(SEs\)](#), [development engineers](#), and [test engineers](#).

Change History

Issue	Date	Change	Changed By
1.0	2020-11	Initial draft	Qu Dongdong

Conventions

Symbol	Indication
	This warning symbol means danger. You are in a situation that could cause fatal device damage or even bodily damage.
	Means reader be careful. In this situation, you might perform an action that could result in module or product damages.
	Means note or tips for readers to use the module

Related Documents

Neoway_N21_Datasheet

Neoway_N21_Product_Specifications

Neoway_N21_HW_User_Guide

Neoway_N21_AT_Command_Manual

Neoway_N21_EVK_User_Guide

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1 Overview

This document details the Non-IP data process to describe how to send Non-IP data through an N21 module.

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2 Related Commands

2.1 AT+CFGDFTPDN - Setting the Protocol Type

To set the default protocol stack.

Format

Type	Command	Response
Execute	AT+CFGDFTPDN=<pdntype>[,<"apn">]	<CR><LF>OK<CR><LF>

Timeout

The command times out if the module does not respond in 300 ms.

Parameter

<pdntype>	PDN type, in integer type 5: Non-IP
<"apn">	Value of APN in character string type

Example

```
AT+CFGDFTPDN=5, ""           Set the protocol stack to NON-IP by default
                                and set the APN to null.
OK
```

2.2 AT+TRB - Restarting the Module

To restart the module.

Format

Type	Command	Response
Execute	AT+TRB<CR>	N/A

Timeout

The command times out if the module does not respond in 300 ms.

Parameter

N/A.

Example

N/A.

2.3 AT+CGDCONT - Setting PDP Format

To set the packet data protocol (PDP) format of the GPRS.

Format

Type	Command	Response
Execute	AT+CGDCONT=[<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>[,<pd1>[,...[,pdN]]]]]]]]<CR>	<CR><LF>OK<CR><LF>

Timeout

The command times out if the module does not respond in 300 ms.

Parameter

<cid> (PDP Context Identifier) a numeric parameter that specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum

- value= 1) is returned by the test form of the command.
- <PDP_type> (Packet Data Protocol type) a string parameter. IP Internet Protocol (IETF STD 5)
- <APN> (Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network. If the value is null or omitted, then the subscription value is requested.
- <PDP_address> a string parameter that identifies the MT in the address space applicable to the PDP. If the value is null or omitted, then a value maybe provided by the TE during the PDP startup procedure or, failing that, a dynamic address is requested. The read form of the command continues to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using the +CGPADDR command.
- <d_comp> a numeric parameter that controls PDP data compression (applicable for SNDCP only)
0: off (default if value is omitted)
- <h_comp> a numeric parameter that controls PDP header compression
0: off (default if value is omitted)
- <pd1>, ...<pdN> zero to N string parameters whose meanings are specific to the <PDP_type>.

Example

```
AT+CGDCONT=1,"Non-IP","CMIIOT"           Set the APN.
OK
```

2.4 AT+CGACT - Activating the Configured PDN in Non-IP Type

To activate the configured PDN in Non-IP Type.

Format

Type	Command	Response
Execute	AT+CGACT=<status>[,<cid>]<CR>	<CR><LF>OK<CR><LF> Or <CR><LF>ERROR<CR><LF>

Timeout

The command times out if the module does not respond in 300 ms.

Parameter

<status>	Integer type 0: deactivate 1: activate
<cid>	Integer type, the channel number to be activated, ranging from 1 to 7.

Example

```
AT+CGACT=1,1
OK
```

2.5 AT+NIPDATA - Sending Non-IP Data

To send Non-IP data to the network side.

Format

Type	Command	Response
Execute	AT+NIPDATA=<cid>,<data><CR>	<CR><LF>OK<CR><LF> +NIPDATA:<cid>,<hex_len>,<data> Or <CR><LF>+CTM2M ERROR:<err><CR><LF>

Timeout

The command times out if the module does not respond in 300 ms.

Parameter

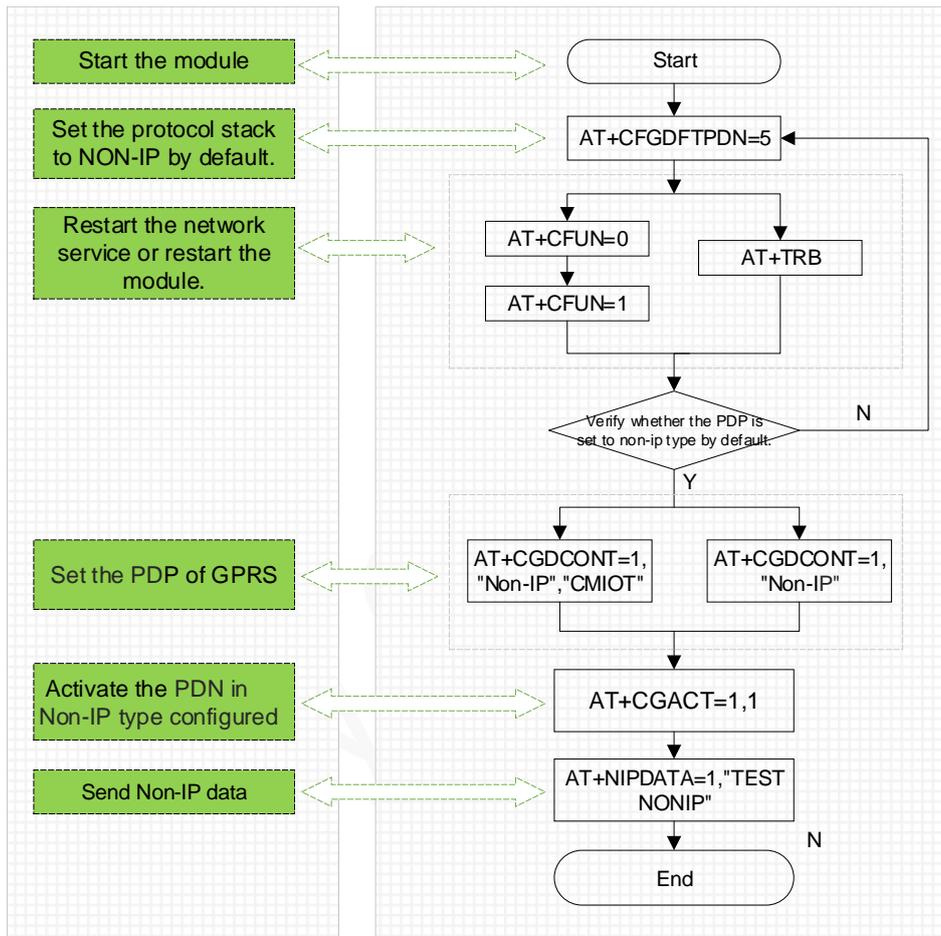
<cid>	The channel number to send data, ranging from 1 to 7.
<data>	Data that is sent to the network side, in Hex string type.
<hex_len>	Data length in Hex string type. E.g. the length of "3132333435" is 10.

Example

```
AT+NIPDATA=1,"MyText"
OK
+NIPDATA:1,10,3132333435
```

3 Example

3.1 Non-IP Data Process



If the network side can send the Non-IP downlink data, the data will be displayed in the serial tool.

3.2 Command Example

```

AT
OK

AT+CFGDFTPDN=5,"neoway.nidd.test"
OK
    
```

```
AT+TRB  
REBOOTING  
+PBREADY
```

```
AT+CGDCONT=1,"Non-IP","neoway.nidd.test"  
OK
```

```
AT+CGACT=1,1  
OK
```

```
AT+NIPDATA=1,"TESTNONIP"  
OK
```

```
+NIPDATA:1,10,3132333435 // unsolicited message about data reception from the  
Cellular Operator's Platform.
```