

# Manual Sigfox Downlink



PRODUCT REFERENCES		
HC-ANA-SIG-Z1-W-B	HC-ANA-SIG-Z2-W-B	HC-ANA-SIG-Z4-W-B
HC-ANA-SIG-Z1-F-B	HC-ANA-SIG-Z2-F-B	HC-ANA-SIG-Z4-F-B
HC-ANA-SIG-Z1-W-TR	HC-ANA-SIG-Z2-W-TR	HC-ANA-SIG-Z4-W-TR
HC-ANA-SIG-Z1-F-TR	HC-ANA-SIG-Z2-F-TR	HC-ANA-SIG-Z4-F-TR

## 1. ACCESS TO SIGFOX BACKEND

### 1.1 Downlink mode activation

a. Configure the BIDIR mode in your Callback

The screenshot shows the Sigfox backend interface for editing a callback. The page title is "Device type InetCounters\_Type1 - Callback edition". The "Callbacks" section contains the following fields:

- Type: **BIDIR** (circled in blue)
- Channel: URL
- Send duplicate:
- Custom payload config:
- URL syntax: `http://host/path?id={device}&time={time}&key1={var1}&key2={var2}...`  
Available variables: device, time, duplicate, snr, station, data, avgSnr, lat, lng, rssi, seqNumber, ack, longPolling  
Custom variables:
- Url pattern: `http://www.territorio.es:8082/CargaAutomaticaLecturas/CargaLecturasRedSIGFOX.ε`
- Use HTTP Method: GET
- Send SNI:  (Server Name Indication) for SSL/TLS connections
- Headers: header value

Buttons: Ok, Cancel

b. Downlink mode activation

The screenshot shows the Sigfox backend interface for managing callbacks. The page title is "Device type 'InetCounters\_Type1' - Callbacks". Below the title, there is a table of callbacks:

These callbacks transfer data received from the devices associated to this device type to your infrastructure. For more informations, please refer to the [Callback documentation](#)

DATA callbacks

Downlink	enable	Channel	Subtype	Duplicate	Batch	Information	Edit	Errors	Delete
<b>●</b> (circled in blue)	<input checked="" type="checkbox"/>		BIDIR	<input type="checkbox"/>	<input type="checkbox"/>	[GET] http://www.territorio.es:8082/CargaAutomaticaLecturas/CargaLecturasRedSIGFOX.aspx?id={de...			

## 1.2. Access to downlink configuration

a. Enter into the device type you desire to configure by the Downlink mode and press Edit.

The screenshot shows the Sigfox backend interface. The browser address bar displays `https://backend.sigfox.com/devicetype/563a2c439336a577179c2bb4/info`. The page title is "Device type 'INETCounters\_Dispositivo Test' - Information". On the right side, there are three buttons: "Disengage sequence number", "Edit", and "Delete". The "Edit" button is circled in blue. The left sidebar contains a navigation menu with options like INFORMATION, LOCATION, ASSOCIATED DEVICES, etc. The main content area lists details for the device type, including its ID, name, description, and creation date.

The screenshot shows the Sigfox backend interface for editing a device type. The browser address bar displays `https://backend.sigfox.com/devicetype/563a2c439336a577179c2bb4/edit`. The page title is "Device type INETCounters\_Dispositivo Test - Edition". The "Downlink mode" is set to "DIRECT". Below this, there is a text input field for "Downlink data in hexa" with the value "0004020000571900". A "Downlink Data" section provides instructions on how to configure custom variables for the downlink data. The left sidebar is the same as in the previous screenshot.

b. Select DIRECT if you wish sending the data from the Sigfox backend or CALLBACK if you will send the commands from your platform or server.



## 2. COMMANDS

### 2.1 Commands structure

		8 BYTES							
		BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7	BYTE 8
No configuration	00	-	-	-	-	-	-	-	-
Date and Time Change	01	Seconds	Minutes	Hour	Day	Week day	Month	Year	
Alarm change	02	type	min/period**	Hour*	sec_current	min_current	hour_curr	-	
Device configuration	03	power_save	inputs (1-3)	type_CN1(5-8)	type_CN2(5-8)	type_CN2(5-8)	-	-	
Change CN1	11	XX	XX	XX	XX	-	-	-	
Change CN2	12	XX	XX	XX	XX	-	-	-	
Change CN3	13	XX	XX	XX	XX	-	-	-	
Alarm limits CN1	14	Limit A			DirLimA	Limit B			DirLimB
Alarm limits CN2	15	Limit A			DirLimA	LimitB			DirLimB
Alarm limits CN3	16	Limit A			DirLimA	LimitB			DirLimB

Type	01	Periodical Hours	Power_save	00	Deactivated		
	02	Daily		01	Activated		
	03	Periodical Minutes					
				Inputs	01	1 input	
					02	2 inputs	
Type_CNx	05	5 digits			03	3 inputs	
	06	6 digits					
	07	7 digits		DirLimA/B	0	Below limit	
	08	8 digits			1	Above limit	

### 2.2 Data format

- Time and Date: Numerical character 0-9.
- Periods: Hexadecimal character 00-FF. For example 27 min -> 1B (hex) min.
- Configuration bytes: Numerical character 0-9
- Meter values: Hexadecimal character 00000000 - 5F5E0FF (HEX) (00000000 – 99999999 (Dec))
- Limits: Voltage in hex format (6 hex bytes). One byte for whole number (1) and five bytes for the decimal part.
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### 2.3 Samples

0130151016020517	Time: 10:15:30, Date: Tuesday 16/05/17			
0202171000161000	Alarm: (1)daily	10:17:00	Current time:	10:16:00
0203100000151200	Alarm: (3)periodical minutes	Every 16 min	Current time:	12:15:00



0201050000321900	Alarm: (2)periodical hours	Every 5 h.	Current time:	19:32:00
0301000000000000	Activation Power Save			
0300000000000000	Deactivation Power Save			
0300030807050000	Power Save:0, Inputs:3, type_CN1:8, type_CN2:7, type_CN3:5			
11057581BD000000	Meter 1	Value: 057581BD		91587005
1200134FA0000000	Meter 2	Value: 00134FA0		01265568
1300000153000000	Meter 3	Value: 00000153		00000339
141CFDE011E84800	In1 Limit A (lower): 1CFDE0 -> 1,900000V DirLimA = 1. Alarm when signal above limit. Limit B (upper): 1E8480 ->2,000000V DirLimA = 0. Alarm when signal below limit.			
151CFDE011E84800	In2 Limit A (lower): 1CFDE0 -> 1,900000V DirLimA = 1. Alarm when signal above limit. Limit B (upper): 1E8480 ->2,000000V DirLimA = 0. Alarm when signal below limit.			

### 3. ACTIVATION OF THE DOWNLINK MODE IN THE DEVICES HC-DIG-SIG-Zx

In order for the device to receive commands via Downlink, please, check the Installation manual HC-DIG.

If you have any doubts or concerns regarding this manual, please contact HC TECHNOLOGIES using the following procedures:

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