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LPWA_ SAMPLE_APPLICATION (SDK Version 3.0.4)

Description

   LPWA_SAMPLE_APPLICATION (LPWA_sample_app) is a basic LPWA transmission sample application that uses Periodic Profile and Event Profile.

   Automatically switches Periodic1 and Periodic2 profiles according to the set time and performs LPWA transmission. If the transmission interval is longer than a certain time, the CXM 150 x is turned off for power saving.

   Event transmission is executed when the button on the host MCU board is pressed while periodic transmission is waiting.

   If both of the periodic1 and periodic2 profiles are disabled by the EEPROM setting, the CXM150x does not send periodic, but only sends Events. The CXM150x is activated only when the button is pressed, and after the completion of the Event transmission, the power of the CXM150x is turned off until the next time the button is pressed, and the host MCU goes into sleep mode.

   At the time of the start-up, the callback function to be called when an error occurs is registered

   Ephemeris backup (BUP) function is used in this sample application. The BUP function is expected to reduce satellite search time at restart by backing up and restoring GNSS information.

   For details on each function and how to build the application, refer to the CXM150x Host I/F Specification, CXM150x Configuration Manual, and CXM150x Programmer's Manual.
When you build the software according to the procedure described in CXM150x Programmer's Manual chapter 10,

   To use the transmit duty limit function in the CXM1504GR, change the definition of the macro TX_DUTY_USE in main_LPWA_sample_app.c as follows:

```
#define TX_DUTY_USE                    (1)
```

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· Supported firmware version

System firmware version (GNSS firmware version)
FY0100_RA2400 (17166,3dac91c,122) or later

The following EEPROM settings are involved in the operation of this application.

EEPROM function	description
POW_ENABLE_REMAIN_OFFSET	The offset value CXM150x is used to calculate the remaining time until the next power on. It is used to calculate the time until the power is turned on.
p1Enabled	Enable/disable setting for Periodic1 profile. Enable either or both p1Enable and p2Enable.
p2Enabled	Enable/disable setting for Periodic2 profile. Enable either or both p1Enable and p2Enable.
evEnabled	Enable/disable setting for Event profile. Enable this option if you want to use Event profile.
INT_OUT1 p1INT_OUT1 p2INT_OUT1 evINT_OUT1	Notify by the INT_OUT1 pin at the specified time before the update deadline of the LPWA transmission data. Refer to the CXM150x Configuration Manual for details of the settings. In order for the application to work, it must be enabled at profile to use. 5 or higher is recommended for this sample application.
AUTO_PERIODIC_SELECT	Automatically switches Periodic1/Periodic2 profiles according to their respective StartTime/EndTime. Set to 1 (automatic switching).

(2023.04)