
STANDALONE MODE SAMPLE APPLICATION (Version 1.0.3)

Description

STANDALONE MODE SAMPLEAPPLICATION (standalone_mode_sample_app) is a sample application for LPWA transmission using Standalone mode on CXM150x.

Communication control, power control and basic payload data generation are performed by the CXM150x itself according to the EEPROM setting of the CXM150x, and the host micro controller performs only partial payload change and the operation mode setting at startup. As an example of attaching user data to a payload, this program replaces the end of the payload that CXM150x automatically generated with a tick (program run time).

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

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.

Building Applications

In principle follow the instructions in chapter 10 of the CXM150x Programmer's Manual, however change the application name to "standalone_mode_sample_app" and note the following points must be changed from the original instructions in the manual.

10.2. Adding SDK Library Files

Add only 2 files under SampleProject¥CXM150x_SDK to project directory ¥Src

CXM150x_Port.c
main_standalone_mode_sample_app.c

The following files should be added to the project directory ¥Inc

CXM150x_Port.h
main_standalone_mode_sample_app.h
CXM150x_typedef.h

(4) Steps through (9) are not required.

In (10), add only CXM150x_Port.c and main_standalone_mode_sample_app.c.

10.3. Adding SDK Library Path

Not required.

10.5. Adding to interrupt handler

Step (3) is not required.

(4) Add the following description

```

/* USER CODE BEGIN EXTI4_15_IRQn 0 */
if(__HAL_GPIO_EXTI_GET_IT(GPIO_PIN_10) != RESET){ //←ADD
    wrapper_CXM150x_int_out2();           //←ADD
}                                           //←ADD
/* USER CODE END EXTI4_15_IRQn 0 */

```

Step (5) is not required.

Note that if the diff tool is available, you can substitute 10.4 ~ 10.6 operations by applying the ¥standalone _ mode _ sample _ app.patch project directory.

When using transmission duty limiting function in CXM1504GR

Change the definition of the macro TX_DUTY_USE in main_standalone_mode_sample_app.c as follows:

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

Supported firmware version

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

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

EEPROM function	Description
INT_OUT2	Signal the CXM150x to send a specific number of milliseconds before it starts sending on the UART. Must be set to something other than 0. A setting of 10 is recommended.
SM_TOUT	Specifies the time after which CXM150x automatically enters normal operation mode. Set it to 0 (auto transition disabled).
AUTOPLD_COLLECT	Set the data collection start time for acquiring data from the Autopayload by the number of seconds before data transmission. Must be set to something other than 0. A setting of 5 is recommended.
WAKEUP_CTRL	Sets whether to automatically power off the UART interface circuit. Set it to 0 (do not turn it off automatically).

<p>AUTO_PERIODIC_SELECT PROFILE_SELECT MIN_DSLP_TIME DSLP_BUP</p>	<p>Set the value appropriate for your transmission profile. Refer to the CXM150x Application Manual, CXM150x Configuration Manual for configuration details.</p>
<p>AUTOPLD_SRC_SELECT AUTOPLD_LAT_BASE AUTOPLD_LON_BASE AUTOPLD_LAT_RANGE AUTOPLD_LON_RANGE AUTOPLD_LAT_RES AUTOPLD_LON_RES AUTOPLD_SRC6_BIT_WIDTH AUTOPLD_SRC7_BIT_WIDTH AUTOPLD_HEIGHT_OFFSET AUTOPLD_SRC1_BIT_POS AUTOPLD_SRC2_BIT_POS AUTOPLD_SRC3_BIT_POS AUTOPLD_SRC4_BIT_POS AUTOPLD_SRC5_BIT_WIDTH AUTOPLD_SRC5_BIT_POS AUTOPLD_SRC6_BIT_WIDTH AUTOPLD_SRC6_BIT_POS AUTOPLD_SRC7_BIT_WIDTH AUTOPLD_SRC7_BIT_POS AUTOPLD_SRC8_BIT_POS AUTOPLD_SRC9_BIT_WIDTH AUTOPLD_SRC9_BIT_POS</p>	<p>Set it according to the data to be set in the payload. Refer to the CXM150x Application Manual, CXM150x Configuration Manual for configuration details.</p>

(2023.04)