Getting the QZSS Disaster and Crisis report message using Spresense

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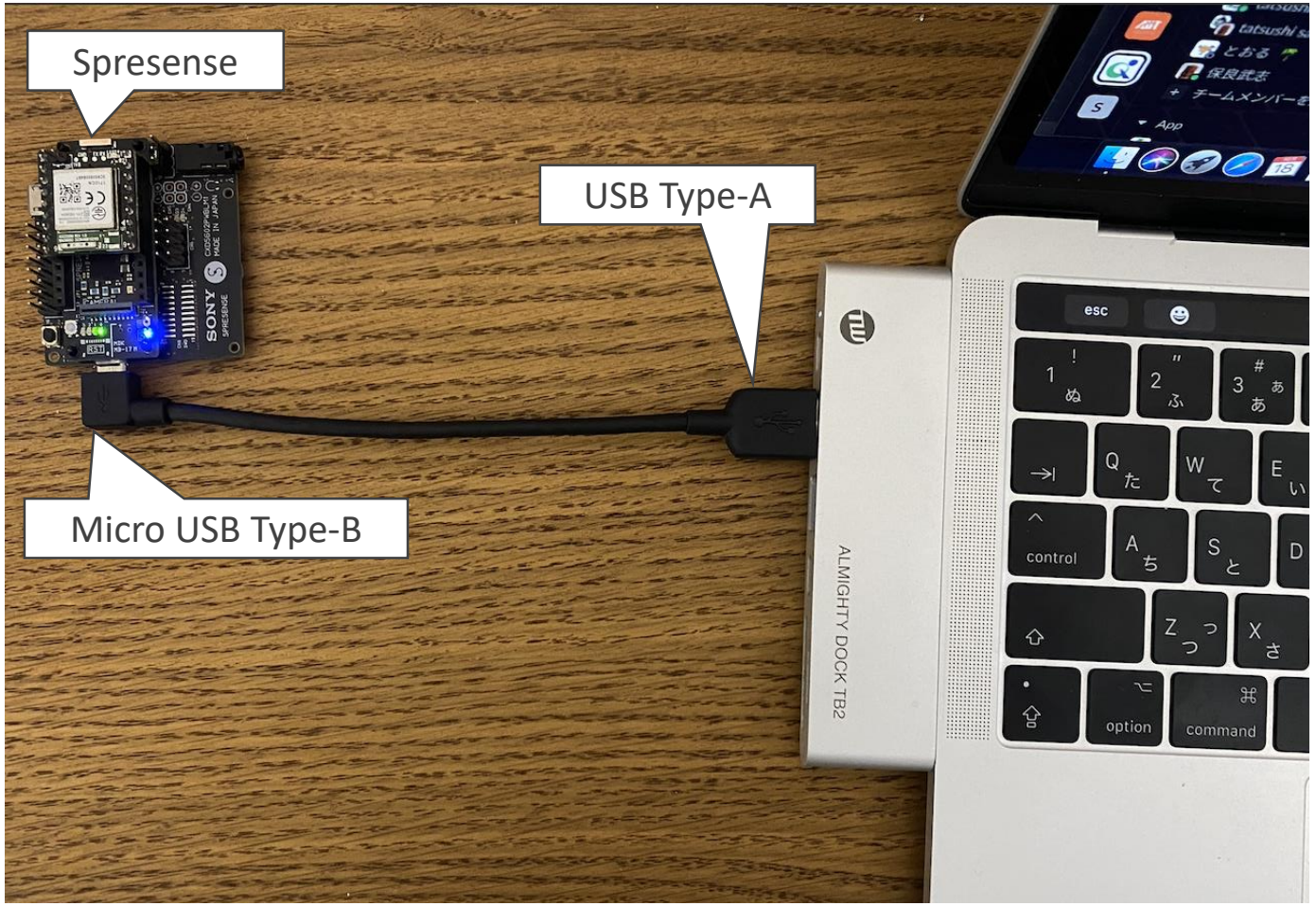
Connecting a Spresense to your computer

You can connect a Spresense to your computer using micro USB Type-B.

- Choose a USB cable

  you need to choose the suitable USB cable for your computer and Spresense.

  If the cable is too long, writing a code to Spresense may sometimes fail.



Getting a example source code for Spresense receiving QZSS signals

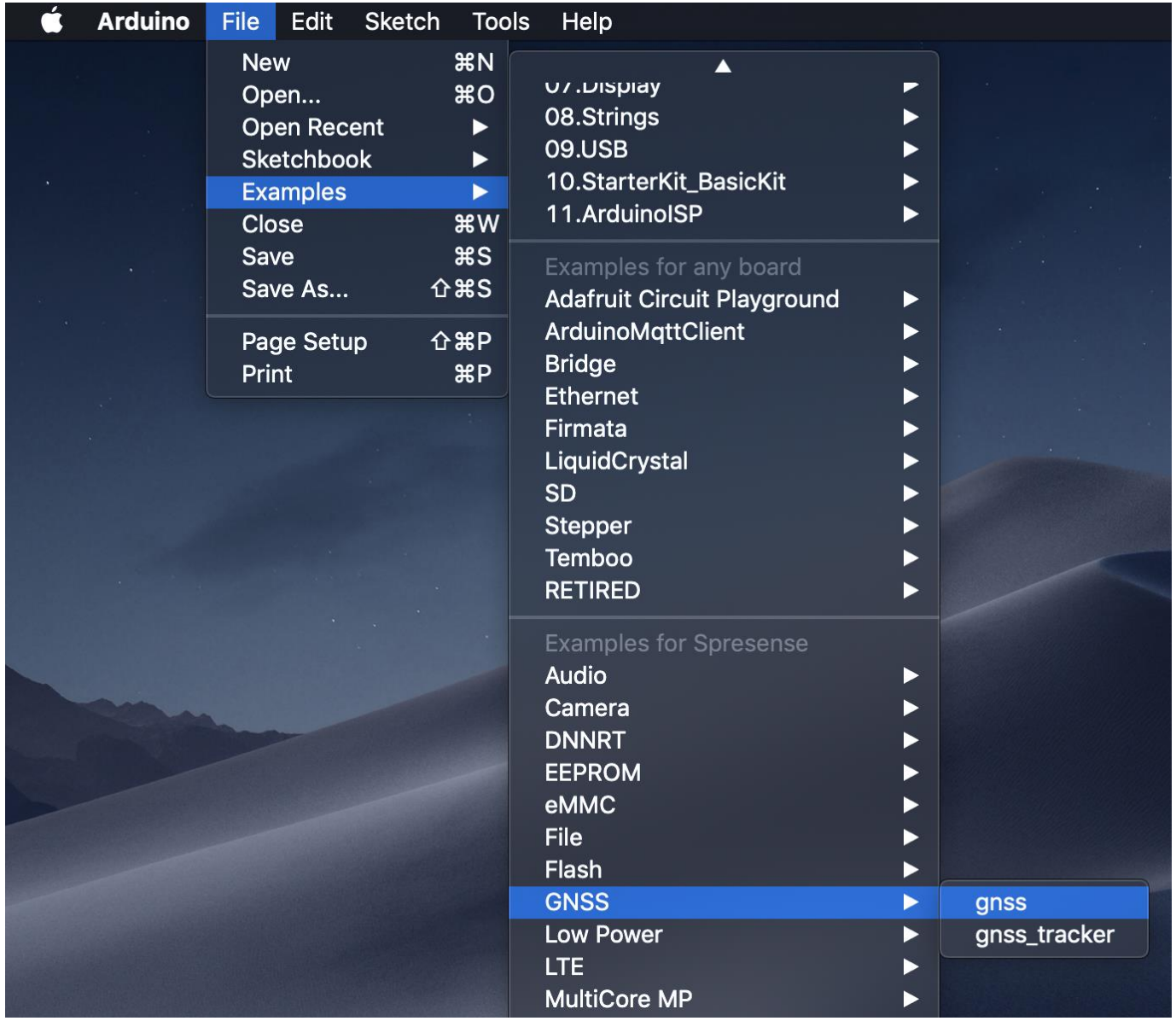
You can get it on Arduino IDE or from GitHub repository of spresense-arduino-compatible.

- On Arduino IDE

  in the example on the right.

- From GitHub

https://github.com/sonydevworld/spresense-arduino-compatible/tree/master/Arduino15/packages/SPRESENSE/hardware/spresense/1.0.0/libraries/GNSS/examples/gnss



Custom the code and Upload to your Spresense

As in the example on the right, you can get hexadecimal signals of QZSS.

- Change a parameter of the ParamSat variable
you need to set “eSatGpsQz1cQz1S” on “satType” in the example source code.

- Push a upload button
the Arduino IDE compiles your cord and uploads it into Spresense. After that, you can see QZSS signals received on the Arduino IDE’s serial monitor.

<Attention>
Spresense can generally receive QZSS signal only **outdoors**.
Depending on the building, Spresense may be able to receive a signal from time to time indoors.

- Next Step

Custom the code for your idea.

Ex.) File I/O, LTE-M, Bluetooth, WiFi, getting other signal, connecting your apps and other API, etc.

1. Change a parameter on the Arduino IDE

```
45 enum ParamSat {
46   eSatGps,             /**< GPS                      World wide coverage  */
47   eSatGlonass,         /**< GLONASS                  World wide coverage  */
48   eSatGpsSbas,         /**< GPS+SBAS                 North America        */
49   eSatGpsGlonass,      /**< GPS+Glonass              World wide coverage  */
50   eSatGpsBeidou,       /**< GPS+BeiDou               World wide coverage  */
51   eSatGpsGalileo,      /**< GPS+Galileo              World wide coverage  */
52   eSatGpsQz1c,         /**< GPS+QZSS_L1CA            East Asia & Oceania  */
53   eSatGpsGlonassQz1c,  /**< GPS+Glonass+QZSS_L1CA    East Asia & Oceania  */
54   eSatGpsBeidouQz1c,   /**< GPS+BeiDou+QZSS_L1CA     East Asia & Oceania  */
55   eSatGpsGalileoQz1c,  /**< GPS+Galileo+QZSS_L1CA    East Asia & Oceania  */
56   eSatGpsQz1cQz1S,     /**< GPS+QZSS_L1CA+QZSS_L1S   Japan                */
57 };
58
59 /* Set this parameter depending on your current region. */
60 static enum ParamSat satType =  eSatGps;
61
```

eSatGpsQz1cQz1S

2. Push a upload button

3. Look on the Arduino IDE’s serial monitor

QZSS DC Report Message converted binary into hexadecimal
(between a comma and an asterisk)

```
$QZQSM,55,53ADF4C4540005178E000000000000000000000000000000000011B39CBAC*76
```

Be more useful QZSS DC Report message in your source code

Consider using “getDCReport” method of the SpGnss class as in the example on the right. You can get QZSS DC Report message out from “Gnss” of the SpGnss class variable.

- Information of SpGnss class
https://developer.sony.com/develop/spresense/developer-tools/api-reference/api-references-arduino/classSpGnss.html

```
#include <gpsutils/cxd56_gnss_nmea.h>
    .
    .
    .
tmp = Gnss.getDCReport()
cxd56_gnss_dcreport_data_s* dcReport = (cxd56_gnss_dcreport_data_s*) tmp;
```

In Arduino IDE example source code for Spresense use “getNavData” that is the SpGnss class’s other method.
Type of data “getNavData” returns is the SpNavData class.

- Information of the SpNavData class
https://developer.sony.com/develop/spresense/developer-tools/api-reference/api-references-arduino/classSpNavData.html