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1  /*
2  SMS_SS v 0.921/20171130 - a-gsmII 2.105/b-gsmgnss 2.105 send/read/list SMS example
   utility
3  COPYRIGHT (c) 2014-2017 Dragos Iosub / R&D Software Solutions srl
4
5  *****IMPORTANT
   NOTICE*****
6  "agsmII_basic_lbr.h", "agsmII_SMS_lbr.ino" and "agsmII_basic_lbr.h",
   "agsmII_SMS_lbr.ino"
7  or,
8  "bgsmgnss_basic_lbr.h", "bgsmgnss_SMS_lbr.ino" and "bgsmgnss_basic_lbr.h",
   "bgsmgnss_SMS_lbr.ino"
9  ARE REQUIERED IN ORDER TO RUN THIS EXAMPLE!!!!!!!!!!!!!!!!!!!!!!
10
11  Download the "a-gsmII kickstart for Arduino"/"b-gsmgnss kickstart for Arduino" from
   here:
12  https://itbrainpower.net/downloads
13  Uncompress the archive and copy the files mentined above in the folder
14  where is this utility, then you can compile this code.
15
16  You may want to modify "message" and "destinationNumber" variables found at lines
   55/56
17  *****END of
   NOTICE*****
18
19  You are legaly entitled to use this SOFTWARE ONLY IN CONJUNCTION WITH
   a-gsmII/b-gsmgnss DEVICES USAGE. Modifications, derivates and redistribution
20  of this software must include unmodified this COPYRIGHT NOTICE. You can redistribute
   this SOFTWARE and/or modify it under the terms
21  of this COPYRIGHT NOTICE. Any other usage may be permitted only after written notice
   of Dragos Iosub / R&D Software Solutions srl.
22
23  This SOFTWARE is distributed is provide "AS IS" in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied
24  warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
25
26  Dragos Iosub, Bucharest 2017.
27  http://itbrainpower.net
28  */
29  /*
30  In order to make your Arduino serial communication reliable (especially for Arduino
   Uno) with a-gsmII/b-gsmgnss shield, you must edit:
31  C:\Program Files\Arduino\libraries\SoftwareSerial\SoftwareSerial.h
32
33  comment the line 42
34  #define _SS_MAX_RX_BUFF 64
35
36  this, will look after that like:
37  // #define _SS_MAX_RX_BUFF 64
38
39  and add bellow the next line:
40
41  #define _SS_MAX_RX_BUFF 128
42
43  You just increased the RX buffer size for UNO and other "snails".
44
45  Now you can compile and upload your code supporting highier buffered serial input
   data.
46  */
47
48  //next 2 definition: leave them commented for standard conectivity over Software
   serial

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49  // #define usejLader                                //un-comment this if you use micro and nano
GSM 3G adapter for ArduinoNano --Do not use it with a-gsmII//b-gsmgnss!!!!
50  // #define HARDWARESERIAL                          //remove comment to use Serial1 for
communication on AT MEGA 2560...DUE..
51
52  // #define atDebug //uncomment this line if you want to catch OK/ERROR/TIMEOUT modem
response
53
54  //modify the next 2 line to be convenient for you
55  char message[]="Hi!\r\nThis message was sent from a-gsmII/b-gsmgnss v2.105 Arduino
shield connected with my Arduino board."; //no more than 160 chars -text SMS
maximum lenght
56  char destinationNumber[]=""; //usually phone number with International prefix
eg. +40 for Romania - in some networks you must use domestic numbers
57
58  #define SMSLibDebug                                //use this definition to output the SMS send
status messages
59  // #define atDebug                                  //un-comment this if you want to debug the
AT exchange
60
61
62  /*do not change under this line! Instead, make one copy for playing with.*/
63  #define powerPIN      7//Arduino Digital pin used to power up / power down the modem
64  #define resetPIN     6//Arduino Digital pin used to reset the modem
65  #define statusPIN    5//Arduino Digital pin used to monitor if modem is powered
66
67  #if (ARDUINO >= 100)
68      #include "Arduino.h"
69      #if !defined(HARDWARESERIAL)
70          #include <SoftwareSerial.h>
71      #endif
72  #else
73      #include "WProgram.h"
74      #if !defined(HARDWARESERIAL)
75          #include <NewSoftSerial.h>
76      #endif
77  #endif
78
79  #if defined(HARDWARESERIAL)
80      #define BUFFDSIZE 1024
81  #else
82      #if defined(__AVR_ATmega1280__) /*AT MEGA ADK*/ || defined(__AVR_ATmega2560__)
/*AT MEGA 2560*/ || defined(__AVR_ATmega32U4__) /*LEONARDO*/
83          SoftwareSerial agsmSerial(10,3); //RX==>10,TX soft==>3...read
84          #define BUFFDSIZE 1024
85      #else/*UNO*/
86          #define UNO_MODE //Arduino UNO
87          #define BUFFDSIZE 200 //240
88          #if defined usejLader
89              SoftwareSerial agsmSerial(3, 2); //RX==>3 ,TX soft==>2
90          #else
91              SoftwareSerial agsmSerial(2, 3); //RX==>2 ,TX soft==>3
92          #endif
93      #endif
94  #endif
95
96
97  #include "bgsmgnss_SMS_lbr.h"
98
99  #define printDebugLN(x){Serial.println(x);}
100
101

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102
103 int state=0, i=0, powerState = 0;
104 char ch;
105 char buffd[256];
106 //char IMEI[18];
107 unsigned long offsetTime;
108 int totalChars = 0;
109 //int ready4SMS = 0;
110 //int ready4Voice = 0;
111
112 char readBuffer[200];
113
114 void setup() {
115     agsmSerial.begin(9600);
116     Serial.begin(57600);
117     clearagsmSerial();
118     clearSerial();
119     delay(10);
120
121     modemHWSSetup(); //configure Arduino IN and OUT to be
122                       used with modem
123
124     Serial.flush();
125     agsmSerial.flush();
126     delay(1000);
127     Serial.println(F("a-gsmII/b-gsmgnss SMS send/read/list SMS example"));
128     Serial.flush();
129     //You may want to modify "message" and "destinationNumber"
130     if(strlen(destinationNumber)<1) {
131         Serial.print(F("destinationNumber not initialized. Edit SM_SS.ino and set
132 the destinationNumber(line 48) with your phone number.\r\n\r\nNow the
133 program will stop.));
134         delay(1000);
135         exit(0);
136     }
137     Serial.println(F("seat back and relax until your a-gsmII/b-gsmgnss is ready"));
138     delay(100);
139     powerOnModem();
140
141     clearBUFFD();
142     while(strlen(buffd)<1) {
143         getIMEI();
144         delay(500);
145     }
146
147     ready4SMS = 0;
148     ready4Voice = 0;
149
150     Serial.println(F("a-gsmII/b-gsmgnss ready.. let's run the example"));
151     Serial.print(F("a-gsmII/b-gsmgnss IMEI: ")); Serial.flush();
152     Serial.println(buffd); Serial.flush();
153     //setAUDIOchannel(20);
154     delay(1000);
155 }
156
157 void loop() {
158     int SMSindex = 1;
159     char * pch0;
160     char * pch1;
161     int res;

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161     int i;
162     int smslen=0;
163
164     switch(state){
165     case 0://check modem status
166         if(!getModemState()) restartMODEM();
167         else
168             state++;
169         i=0;
170         res= 0;
171         while(res != 1){
172             res = sendATcommand("", "OK", "ERROR", 2);
173             if (res != 1) {
174                 if(i++ >= 10) {
175                     printDebugLN(F("AT err...restarting"));
176                     restartMODEM();
177                 }
178             }
179             delay(500);
180         }
181         sendATcommand("+IPR=0;&w", "OK", "ERROR", 2);
182         delay(2000);
183         break;
184
185     case 1:
186         clearBUFFD();
187         //next some init strings...
188         aGsmCMD("AT+QIMODE=0", 200);
189         aGsmCMD("AT+QINDI=0", 200);
190         aGsmCMD("AT+QIMUX=0", 200);
191         aGsmCMD("AT+QIDNSIP=0", 200);
192         offsetTime=0;
193         clearBUFFD();
194         state++;
195         break;
196
197     case 2:
198         printDebugLN(F("try CPIN..."));
199         if(!offsetTime) offsetTime = millis();
200         if ((millis() - offsetTime) > 20000) restartMODEM();
201         if(sendATcommand("+CPIN?", "READY")==1){
202             offsetTime=0; state++;
203             printDebugLN(F("READY"));
204         }else{}
205         clearagsmSerial(); delay(100);
206         offsetTime = millis();
207         break;
208
209     case 3:
210         if(!offsetTime) offsetTime = millis();
211         if ((millis() - offsetTime) > 30000) restartMODEM();
212
213         printDebugLN(F("Query GSM registration?"));
214         res = registration(GSM);
215         if(res==1){
216             offsetTime=0; state++;
217             printDebugLN(F("READY, HOME NETWORK"));
218         }else if(res==5){
219             offsetTime=0; state++;
220             printDebugLN(F("READY, ROAMING"));
221         }else{
222             Serial.print(F("."));

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223     }
224     offsetTime = millis();
225 break;
226
227 case 4: //init SIM/MODEM
228     printDebugLN(F("Query State of Initialization"));
229     if(sendATcommand("+QINISTAT","3")==1){
230         offsetTime=0; state++;
231         printDebugLN(F("READY"));
232     }else{Serial.print(F(".")); delay(100);}
233     clearagsmSerial(); delay(100);
234     offsetTime = millis();
235 break;
236
237 case 5://let's prepare modem for SMS usage
238     if(!offsetTime) offsetTime = millis();
239     if ((millis() - offsetTime) > 5000) restartMODEM();
240     clearBUFFD();
241     clearagsmSerial();
242
243     printDebugLN(F("Prepare the modem for SMS usage!"));
244     setupMODEMforSMSusage();
245     delay(10000);
246     offsetTime = millis();
247     state++;
248 break;
249
250 case 6://let's send one SMS to the destination receipt
251     if(!offsetTime) offsetTime = millis();
252     if ((millis() - offsetTime) > 5000) restartMODEM();
253
254     printDebugLN(F("Let's send one SMS..."));
255
256     sendSMS(destinationNumber,message);
257
258     //if(sendSMS(destinationNumber,message,"147")==1) printDebugLN("test SMS has
259     //been send with succes!");
260
261     //in real app you would like to use it like bellow
262     //if(sendSMS(destinationNumber,message) == 1) printDebugLN("SMS SUCCESS");
263     //else printDebugLN("SMS FAILURE");
264
265     clearBUFFD();
266     clearagsmSerial();
267
268     delay(10000);
269     offsetTime = millis();
270     state++;
271 break;
272
273 case 7://let's read SMSs from active memmory
274     printDebugLN(F("Let's find SMS storage used/free locations!")); delay(100);
275     clearBUFFD();
276     //listSMSstatus();
277     listSMS(); //this function do the job
278     Serial.print(F("noSMS: "));
279     printDebugLN(noSMS);
280     Serial.print(F("totSMS: "));
281     printDebugLN(totSMS);
282
283     delay(5000);

```

```
284     clearBUFFD();
285     clearagsmSerial();
286
287     state++;
288     break;
289
290     case 8://let's read one SMS
291         printDebugLN(F("Read the first SMS stored!")); delay(100);
292
293         //start READ SMS
294         SMSindex = 1; //h used as SMS index here we read
                //only first index... h >=1, h <= totSMS!!!!
295         clearBUFFD();
296         readSMS(SMSindex); //do the job the SMS content it is
                //returned in buffd
297
298         Serial.print("List the message >> ");
299         printDebugLN(buffd); //here is the message ....
300
301         delay(15000);
302
303         clearBUFFD();
304         clearagsmSerial();
305
306         state++;
307         break;
308
309     default:
310         //restartMODEM();
311         printDebugLN(F("That's all folks!"));
312         delay(10000);
313         //state=0;
314         break;
315     }
316
317 }
318
```