

Modem

INHERITS FROM Serial
DECLARED IN Modem.h
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CLASS DESCRIPTION

The Modem class is a subclass of Serial that adds an object oriented interface to standard "Hayes" style modems.

FEATURES

- Builds on the Serial Class and provides an easy to use, object oriented interface to using a Modem.

INSTANCE VARIABLES

Inherited from Object
Class isa;

Inherited from Serial

```
int          ttyPtr;
int          baudrate;
int          par;
id           target;
SEL          theSelector;
BOOL         notifyStatus;
char         deviceName[20];
BOOL         reEnteredTtyHandler;
unsigned long timeout;
unsigned     int notifyThreshold;
```

Declared in Modem

```
struct       modemStruct localModem;
int          modemStatus;
int          numRings;
char         lastResponse[100];
BOOL         autoAnswerOn;
```

METHOD TYPES

Open and initializing a Modem Object

- init;
- defineModem: (struct modemStruct) aModem;
- getModemDef: (struct modemStruct *) aModem;

Checking the modemstatus

- (int) getModemStatus;
- (char*) getLastResponse;

Controlling the Modem

- (int) modemReset;
- (int) modemToneDial:(BOOL)flag;
- (int) modemDial: (char*) number AutoBaud:(BOOL) autoBaud
- (int) modemRedial:(BOOL) autoBaud;
- (int) modemHangup;
- (int) modemAnswer;
- (int) modemAutoAnswer: (int) numberOfRings;
- (int) modemAutoAnswer;
- (int) modemReadRegister:(int) reg;
- (int) modemWriteRegister:(int) reg withValue:(int)value;

INTERNAL METHODS

None

CLASS METHODS

None

INSTANCE METHODS

defineModem:

- **defineModem:** (struct modemStruct*) aModem;

Sets the modem objects current modem definition. (see the structure modemStruct)

getModemStatus

- (int) **getModemStatus;**

Returns the modem status variable. The defined constants are;

ONHOOK
OFFHOOK
CONNECTED
BUSY
DIALING
REDIALING
IDLE
REMOTERING
NOCARRIER.

getModemDef:

- **getModemDef:** (struct modemStruct*) aModem;

Returns the current modem definition in the structure pointed to by

aModem.

getLastResponse

- (char*) **getLastResponse**;

Returns the FULL text of the last modem response. For example the modem status may be CONNECTED but the full text may be "CONNECT 2400" so you would know to change the serial port baudrate to 2400 before continuing. This is a shallow copy (we return the pointer to the internal string variable) so DON'T expect it to remain constant.

init

- **init**

Set up for internal variables and signal handlers.

modemAnswer

- (int) **modemAnswer**;

Causes the modem to pickup the phone and answer. Status = CONNECTED.

Returns **PORTNOTOPEN** if there was no port open **OK** otherwise.

modemAutoAnswer:

- (int) **modemAutoAnswer**: (int) numberOfRings;

Tells the modem to answer the phone after **numberOfRings**.
Returns **PORTNOTOPEN** if there was no port open
OK otherwise.

modemAutoAnswer

- (int) **modemAutoAnswer**;

Returns the number of rings required before the modem will answer the phone. 0 means that the modem will NOT answer the phone.

Returns **PORTNOTOPEN** if there was no port open

modemDial: AutoBaud:

- (int) **modemDial:** (char*) number AutoBaud:(BOOL) autoBaud ;

Dials the requested number..

Returns **PORTNOTOPEN** if there was no port open.

Returns CONNECT is connected or BUSY ETC. Look at the method **getLastResponse** to find the full text. If **autoBaud** equals YES then we will try to figure out the speed from the modem response line and adjust the speed of the serial port to match. If the variable equals NO then we leave the port speed alone.

modemHangup

- (int) **modemHangup**;

Drops DTR for 1 second and sets modem status = IDLE.

Returns **PORTNOTOPEN** if there was no port open
OK otherwise.

modemRedial:

- (int) **modemRedial:**(BOOL) autoBaud;

Calls **modemDial:** with the last number dialed. If **autoBaud** equals YES then we will try to figure out the speed from the modem response line and adjust the speed of the serial port to match.

Returns same as **modemDial:**

modemReset

- (int) **modemReset;**

Sends the modem reset string to the modem.
Returns **PORTNOTOPEN** if there was no port open.
Returns **TIMEOUT** if there is no response.

modemToneDial:

- **modemToneDial:**(BOOL)flag;

Tells the modem to use the **TONE** or **PULSE** dialing string.
YES = TONE , NO = PULSE.

modemReadRegister:

- (int) **modemReadRegister:(int) reg;**

Returns the value in the modem register specified by **reg**.

Returns **PORTNOTOPEN** if there was no port open.

modemWriteRegister: withValue:

- (int) **modemWriteRegister:(int) reg withValue:(int)value;**

Sets the value in the modem register specified by **reg** to **value**

Returns **PORTNOTOPEN** if there was no port open.

CONSTANTS AND DEFINED TYPES

DEFINED IN SERIAL

```
#define OFF                0
#define ON                 1
#define EVEN              1
#define ODD               2
#define NONE              3
#define SPACE             4
#define MARK              5

#define SEC                1000000L
```

```
#define SERIALOK          0

#define PORTNOTOPEN      -1
#define TIMEOUT          -2
#define BADPARITY        -3
#define BADBAUD          -4
#define BADLENGTH       -5
```

DEFINED IN MODEM

```
#define          OK          0
#define          ONHOOK      1
#define          OFFHOOK     2
#define          CONNECTED   3
#define          BUSY        4
#define          DIALING      5
#define          REDIALING    6
#define          IDLE        7
#define          REMOTERING   8
#define          NOCARRIER   9
#define MODEMRESPONSEERROR   10

#define          AUTOANSRING  0
#define          RING_CNT     1
#define          ESC_CHAR     2
#define          RETURN_CHAR  3
#define          LINEFEED_CHAR 4
#define          BS_CHAR      5
```

```
#define WAIT_DIALTONE 6
#define WAIT_CARRIER 7
#define LEN_PAUSE 8
#define CD_GUARD 9
#define LOST_CDTIME 10
#define TONE_RATE 11
#define ESC_GUARD 12
#define DELAY_DTR 25
#define RTS_CTS_DELAY 26
```

```
struct modemStruct {
    char type[40]; //name of modem
    char lastNum[40]; //Last Number dialed
    char term[3]; //Normal command terminator
    char tone[20]; //tone dial prefix
    char pulse[20]; //pulse dial prefix
    BOOL toneDial; //YES = TONE NO=PULSE
    char hangup[20]; //code to cause a hangUp
    char reset[20]; //code to reset modem
    char answer[20]; //code to cause answer
};
```