```
  1: /*
  2:     libxbee - a C library to aid the use of Digi's Series 1 XBee modules
  3:              running in API mode (AP=2).
  4:
  5:     Copyright (C) 2009  Attie Grande (attie@attie.co.uk)
  6:
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  8:     it under the terms of the GNU General Public License as published by
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 10:     (at your option) any later version.
 11:
 12:     This program is distributed in the hope that it will be useful,
 13:     but WITHOUT ANY WARRANTY; without even the implied warranty of
 14:     MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 15:     GNU General Public License for more details.
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 17:     You should have received a copy of the GNU General Public License
 18:     along with this program.  If not, see <http://www.gnu.org/licenses/>.
 19: */
 20:
 21: #ifndef XBEE_H
 22: #define XBEE_H
 23:
 24: #include <stdarg.h>
 25:
 26: enum xbee_types {
 27:   xbee_unknown,
 28:
 29:   xbee_localAT, /* frame ID */
 30:
 31:   xbee_remoteAT,
 32:   xbee_16bitRemoteAT, /* frame ID */
 33:   xbee_64bitRemoteAT, /* frame ID */
 34:
 35:   xbee_16bitData, /* frame ID for ACKs */
 36:   xbee_64bitData, /* frame ID for ACKs  */
 37:
 38:   xbee_16bitIO,
 39:   xbee_64bitIO,
 40:
 41:   xbee_txStatus,
 42:   xbee_modemStatus
 43: };
 44: typedef enum xbee_types xbee_types;
 45:
 46: struct xbee_con {
 47:   unsigned int tAddr64       : 1;
 48:   unsigned int atQueue       : 1; /* queues AT commands until AC is sent */
 49:   unsigned int txDisableACK  : 1;
 50:   unsigned int txBroadcast   : 1; /* broadcasts to PAN */
 51:   unsigned int __spare__     : 4;
 52:   xbee_types type;
 53:   unsigned char frameID;
 54:   unsigned char tAddr[8];          /* 64-bit 0-7   16-bit 0-1 */
 55:   struct xbee_con *next;
 56: };
 57: typedef struct xbee_con xbee_con;
 58:
 59: struct xbee_pkt {
 60:   unsigned int sAddr64        : 1; /* yes / no */
 61:   unsigned int dataPkt        : 1; /* if no - AT packet */
 62:   unsigned int txStatusPkt    : 1;
 63:   unsigned int modemStatusPkt : 1;
 64:   unsigned int remoteATPkt    : 1;
 65:   unsigned int IOPkt          : 1;
 66:   unsigned int __spare__      : 2;
 67:   xbee_types type;
 68:   unsigned char frameID;          /* AT        Status   */
 69:   unsigned char atCmd[2];         /* AT                 */
 70:   unsigned char status;           /* AT  Data  Status   */ /* status / options */
 71:   unsigned char Addr64[8];        /* AT  Data           */
 72:   unsigned char Addr16[2];        /* AT  Data           */
 73:   unsigned char data[128];        /* AT  Data           */
 74:   unsigned char RSSI;             /*      Data          */
 75:   unsigned int datalen;
 76:
 77:   /* X  A5 A4 A3 A2 A1 A0 D8    D7 D6 D5 D4 D3 D2 D1 D0 */
 78:   unsigned short IOmask;          /*                    IO */
 79:
 80:   /* X  X  X  X  X  X  X  D8    D7 D6 D5 D4 D3 D2 D1 D0 */
 81:   unsigned short IOdata;          /*                    IO */
 82:
 83:   /* X  X  X  X  X  D  D  D     D  D  D  D  D  D  D  D  */
 84:   unsigned short IOanalog[6];     /*                    IO */
 85:
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 86:    struct xbee_pkt *next;
 87: };
 88: typedef struct xbee_pkt xbee_pkt;
 89:
 90: int xbee_setup(char *path, int baudrate);
 91: int xbee_setuplog(char *path, int baudrate, int logfd);
 92:
 93: xbee_con *xbee_newcon(unsigned char frameID, xbee_types type, ...);
 94:
 95: #define xbee_endcon(x) xbee_endcon2((void **)&x)
 96: void xbee_endcon2(xbee_con **con);
 97:
 98: int xbee_senddata(xbee_con *con, char *format, ...);
 99: int xbee_vsenddata(xbee_con *con, char *format, va_list ap);
100: int xbee_nsenddata(xbee_con *con, char *data, int length);
101:
102: xbee_pkt *xbee_getpacketwait(xbee_con *con);
103: xbee_pkt *xbee_getpacket(xbee_con *con);
104:
105: int xbee_hasdigital(xbee_pkt *pkt, int input);
106: int xbee_getdigital(xbee_pkt *pkt, int input);
107:
108: int xbee_hasanalog(xbee_pkt *pkt, int input);
109: double xbee_getanalog(xbee_pkt *pkt, int input, double Vref);
110:
111: #endif
```