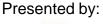


The Data's in the Mail

February 1, 2019

Fred Eady



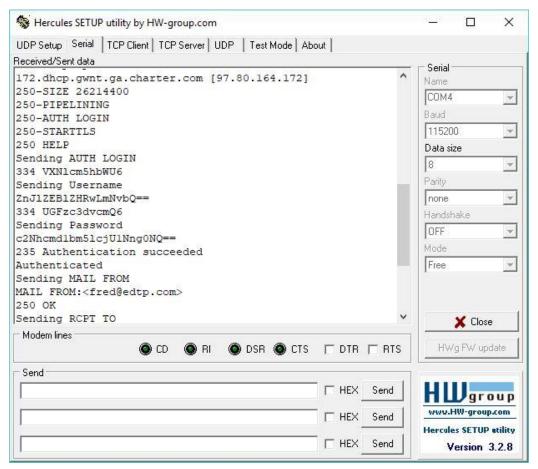






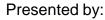
-ARM SMTP Driver

Day 5 Summary











ARM SMTP Driver: Enumerations and Function Prototypes

```
62 //* FUNCTION PROTOTYPES
64 void SystemClock Config(void);
65 static void MX GPIO Init (void);
                                                                  124 - enum{
66 static void MX SPI1 Init (void);
                                                                         MODE DISCOVERLCD = 0,
67 static void MX USART1 UART Init(void);
                                                                  126
                                                                         MODE DATAENTRY,
68 static void MX USART2 UART Init(void);
                                                                  127
                                                                         MODE NOLCD,
69 void getLCDpacket(void);
                                                                  128
                                                                         MODE DHCP,
70 uint8 t CharInRing(void);
                                                                  129
                                                                         MODE MONITOR,
71 uint8 t readring(void);
                                                                  130
                                                                         MODE CONNECT,
72 void getMAC(void);
                                                                  131
                                                                         MODE EHLO,
73 void mac csLO(void);
                                                                  132
                                                                         MODE LOGIN,
74 void mac csHI (void);
                                                                  133
                                                                         MODE AUTHENTICATE,
75 void eedata csLO(void);
                                                                  134
                                                                         MODE MAILFROM,
76 void eedata csHI (void);
                                                                  135
                                                                         MODE RCPTTO,
77 void wiz csLO(void);
                                                                  136
                                                                         MODE SENDDATA,
78 void wiz csHI (void);
                                                                  137
                                                                         MODE SENDMAIL,
79 uint8 t spi rb(void);
                                                                  138
                                                                         MODE QUIT
80 void spi wb(uint8 t b);
                                                                  139
81 void pageWR(uintl6 t addr, uint8 t *buf, uint8 t *len);
82 void pageRD(uintl6 t addr, uint8 t *buf, uint8 t *len);
83 void showNetInfo(void);
84 void base64 encode (unsigned char *dst, uint32 t dstlen, unsigned char *src, uint32 t srclen );
85 void base64 decode (unsigned char *dst, uint32 t dstlen, unsigned char *src, uint32 t srclen );
```









ARM SMTP Driver: Discover LCD Mode

```
case MODE DISCOVERLCD:
 printf("MODE DISCOVERLCD\r\n"):
 for (scratch8=0; scratch8 < 15; scratch8++)
   HAL Delay(1000);
 biteOut[0] = 0xAA;
 biteOut[1] = 0x30;
 biteOut[2] = 0xCC;
 biteOut[3] = 0x33;
 biteOut[4] = 0xC3;
 biteOut[5] = 0x3C;
 HAL UART Transmit(&huartl, biteOut, 6, 0xFFFF);
 for (scratch8=0; scratch8 < 10; scratch8++)
   HAL Delay(1000);
 if (CharInRing())
     rxBufLCD[0] = readring();
     if (rxBufLCD[0] == 0xAA)
       rxBufLCD[1] = readring();
       if(rxBufLCD[1] == 0x30)
         bufIndxLCD = 2:
              rxBufLCD(bufIndxLCD++) = readring();
              if (rxBufLCD|bufIndxLCD-11 == 0xCC)
                rxBufLCD[bufIndxLCD++] = readring();
                if(rxBufLCD[bufIndxLCD-1] == 0x33)
                  rxBufLCD[bufIndxLCD++] = readring();
                  if(rxBufLCD[bufIndxLCD-1] == 0xC3)
                   rxBufLCD[bufIndxLCD++] = readring();
                    if (rxBufLCD[bufIndxLCD-1] == 0x3C)
                      rxBufLCD[bufIndxLCD++] = readring();
                      if (rxBufLCD[bufIndxLCD-1] == 0x3A)
                        rxBufLCD[bufIndxLCD++] = readring();
                        if(rxBufLCD[bufIndxLCD-1] == 0x3E)
                          break;
```

```
bufIndxLCD = 2;
    while (rxBufLCD[bufIndxLCD] != 'R')
      ++bufIndxLCD:
    bufIndx = 0;
    while(srcReady[bufIndx] == rxBufLCD[bufIndxLCD] && srcReady[bufIndx] != 0x00)
      ++bufIndx;
      ++bufIndxLCD;
    if(srcReady[bufIndx] == 0x00)
      flags.fentry = 0;
      lastpstate = pstate;
      pstate = MODE DATAENTRY:
                                               USER NAME
                                                           User Name p
    else
                                               PASSWORD
                                                           Password p
      lastpstate = pstate;
                                               EMAIL DOMAIN
                                                           Email Domain p
      pstate = MODE NOLCD;
                                               MAIL TO:
                                                           Mail to p
                                                           Mail from p
                                               MAIL FROM:
  else
    lastpstate = pstate;
    pstate = MODE NOLCD;
break;
```

```
140  typedef struct{
141     uint16_t fentry:1;
142     uint16_t fmonitor:1;
143  }FFLAGS;
144  FFLAGS flags;
```

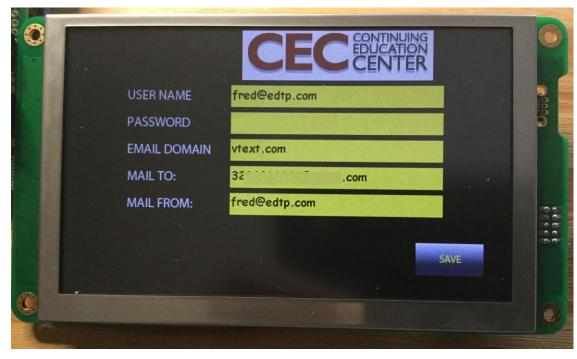






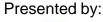
ARM SMTP Driver: Data Entry Mode

```
872
          case MODE DATAENTRY:
873
            if (flags.fentry == 0)
874 -
              printf("MODE DATAENTRY\r\n");
875
876
              flags.fentry = 1;
877
              if (CharInRing())
878
879 戸
880
              getLCDpacket();
881
         break;
882
```



```
case mailto:
  emaildata.emto[0] = 'R';
  emaildata.emto[1] = 'C';
  emaildata.emto[2] = 'P';
  emaildata.emto[3] = 'T';
  emaildata.emto[4] = ' ';
  emaildata.emto[5] = 'T';
  emaildata.emto[6] = '0';
  emaildata.emto[7] = ':';
  emaildata.emto[8] = '<';
  i = 9:
  j = 6;
  lenmailto = 9:
  do{
        emaildata.emto[i++] = rxBufLCD[j++];
        lenmailto++:
  }while(rxBufLCD[j-1] != 0x00);
  emaildata.emto[i++] = '>';
  lenmailto++;
  emaildata.emto[i++] = 0 \times 0 D;
  lenmailto++;
  emaildata.emto[i] = 0x0A;
break;
```





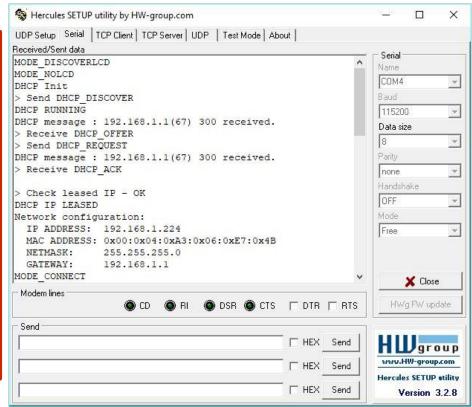






ARM SMTP Driver: Headless (No LCD) Mode

```
case MODE NOLCD:
 printf("MODE NOLCD\r\n");
 oneBite = 0x01:
 pageRD(eepageusrnamelen, &lenusrname, &oneBite);
 pageRD(eepagepasswrdlen, &lenpasswrd, &oneBite);
 pageRD(eepagedomainlen, &lenedomain, &oneBite);
 pageRD(eepagemailtolen, &lenmailto, &oneBite);
 pageRD(eepagemailfrmlen, &lenmailfrm, &oneBite);
 pageRD(eepageuname64len, &lenUname64, &oneBite);
 pageRD(eepagepword64len, &lenPword64, &oneBite);
 pageRD(eepageusrname, emaildata.uname, &lenusrname);
 pageRD(eepagepasswrd, emaildata.pword, &lenpasswrd);
 pageRD(eepagedomain, emaildata.domain, &lenedomain);
 pageRD(eepagemailto, emaildata.emto, &lenmailto);
 pageRD(eepagemailfrm, emaildata.emfrm, &lenmailfrm);
 pageRD(eepageuname64, emaildata.uname64, &lenUname64);
 pageRD(eepagepword64, emaildata.pword64, &lenPword64);
 lastpstate = pstate;
 pstate = MODE DHCP;
break:
```











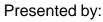


ARM SMTP Driver: Connect to SMTP Server

```
case MODE CONNECT:
 printf("MODE CONNECT\r\n");
 retVal = socket(0, Sn MR TCP, 5000, 0);
 if(retVal == 0)
   printf("Socket 0 opened.\r\n");
    retVal = connect(0, spiderIP, 587);
    if (retVal == SOCK OK)
     printf("Connected\r\n");
     HAL Delay(2000);
     rcvLen = 0;
        rcvLen = getSn RX RSR(0);
     }while (rcvLen == 0);
     recv(0, sktRxBuf, rcvLen);
     HAL UART Transmit (&huart2, sktRxBuf, rcvLen, 0xFFFF);
     sktIndx = 0;
     do {
     if(sktRxBuf[sktIndx] == '2' &&
         sktRxBuf[sktIndx+1] == '2' &&
        sktRxBuf[sktIndx+2] == '0' &&
         sktRxBuf[sktIndx+3] == ' ')
          lastpstate = pstate;
          pstate = MODE EHLO;
      }while(pstate == MODE CONNECT || sktIndx > rcvLen);
     if(sktIndx > rcvLen)
        lastpstate = pstate;
       pstate = MODE MONITOR;
        close (0);
  break;
```

🔷 Hercules SETUP utility by HW-group.com			×
UDP Setup Serial TCP Client TCP Server UDP Test Mode A	bout		
Received/Sent data		6.21	
MODE CONNECT		Serial Name	
Socket 0 opened.		113111	Esta
Connected		СОМ4	¥
220 smtp.spiderhost.com Welcome to the @Mail	SMTP Server	Baud	
(Exim)		115200	¥
Sending EHLO		Data size	= = = = = = = = = = = = = = = = = = = =
EHLO vtext.com		8	*
250-smtp.spiderhost.com Hello 97-80-164-		1	9150
172.dhcp.gwnt.ga.charter.com [97.80.164.172]		Parity.	
250-SIZE 26214400		none	*
250-PIPELINING		Handshake	
250-AUTH LOGIN		OFF	w
250-STARTTLS 250 HELP		Mode	-
Sending AUTH LOGIN		Free	+
334 VXN1cm5hbWU6		Triee	200
Sending Username			
ZnJ1ZEB1ZHRwLmNvbO==			
334 UGFzc3dvcmQ6	~	¥ Close	
Modern lines		V C1036	
CD RI DSR CTS	☐ DTR ☐ RTS	HWg FW up	date
Send -			
	☐ HEX Send	НШgr	o u p
	☐ HEX Send	wwv.HW-group	
J	1 TIEN JOHU	Hercules SETUP	atility
	HEX Send	Version	1





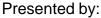


ARM SMTP Driver: Identify to the SMTP Server

```
case MODE EHLO:
  printf("Sending EHLO\r\n");
  HAL UART Transmit(&huart2, emaildata.domain, lenedomain, 0xFFFF);
  send(0, emaildata.domain, lenedomain);
                                                                    Hercules SETUP utility by HW-group.com
  HAL Delay(2000);
                                                                    UDP Setup Serial TCP Client TCP Server UDP Test Mode About
  rcvLen = 0:
                                                                   Received/Sent data
                                                                                                                            Serial
  do {
                                                                   MODE CONNECT
                                                                                                                            Name
    rcvLen = getSn RX RSR(0);
                                                                    Socket 0 opened.
                                                                                                                            COM4
                                                                   Connected
  }while(rcvLen == 0);
                                                                    220 smtp.spiderhost.com Welcome to the @Mail SMTP Server
                                                                    (Exim)
                                                                                                                            115200
  recv(0, sktRxBuf, rcvLen);
                                                                   Sending EHLO
                                                                                                                            Data size
  HAL UART Transmit (&huart2, sktRxBuf, rcvLen, 0xFFFF);
                                                                    EHLO vtext.com
                                                                    250-smtp.spiderhost.com Hello 97-80-164-
                                                                                                                            Parity
                                                                    172.dhcp.gwnt.ga.charter.com [97.80.164.172]
  sktIndx = 0;
                                                                   250-SIZE 26214400
                                                                                                                            none
  do{
                                                                    250-PIPELINING
                                                                                                                            Handshake
                                                                   250-AUTH LOGIN
    if(sktRxBuf[sktIndx] == '2' &&
                                                                                                                            OFF
                                                                   250-STARTTLS
        sktRxBuf(sktIndx+1) == '5' &&
                                                                                                                            Mode
                                                                   250 HELP
        sktRxBuf[sktIndx+2] == '0' &&
                                                                                                                            Free
                                                                    Sending AUTH LOGIN
                                                                    334 VXN1cm5hbWU6
        sktRxBuf(sktIndx+3) == ' ')
                                                                   Sending Username
                                                                    ZnJ1ZEB1ZHRwLmNvb0==
       lastpstate = pstate;
                                                                   334 UGFzc3dvcmO6
                                                                                                                                X Close
       pstate = MODE LOGIN;
                                                                    Modem lines
                                                                                                 O DSR O CTS DTR RTS
    sktIndx++;
                                                                    Send
  }while(pstate == MODE EHLO || sktIndx > rcvLen);
                                                                                                              ☐ HEX Send
                                                                                                                            group
  if(sktIndx > rcvLen)
                                                                                                                             www.HW-group.com
                                                                                                              THEX Send
                                                                                                                            Hercules SETUP atility
    lastpstate = pstate;
                                                                                                              HEX Send
                                                                                                                               Version 3.2.8
    pstate = MODE MONITOR;
    close (0);
break:
```









ARM SMTP Driver: LOGIN to the SMTP Server

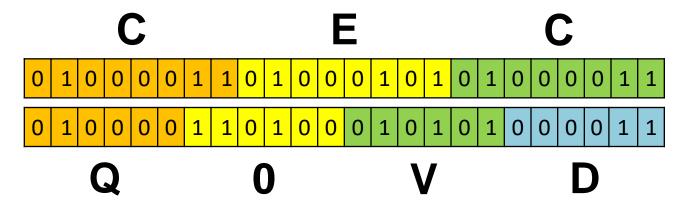
```
Hercules SETUP utility by HW-group.com
case MODE LOGIN:
                                                                      UDP Setup Serial TCP Client TCP Server UDP Test Mode About
 printf("Sending AUTH LOGIN\r\n");
                                                                      Received/Sent data
  sprintf((char*)sktTxBuf, "AUTH LOGIN\r\n");
                                                                                                                              Serial
                                                                      Sending AUTH LOGIN
                                                                                                                              Name
  send(0,sktTxBuf,strlen((char*)sktTxBuf));
                                                                      334 VXN1cm5hbWU6
                                                                                                                              COM4
  HAL Delay (2000);
                                                                      Sending Username
                                                                      ZnJ1ZEB1ZHRwLmNvbQ==
 rcvLen = 0:
                                                                      334 UGFzc3dvcmQ6
                                                                                                                              115200
  dof
                                                                      Sending Password
                                                                                                                              Data size
    rcvLen = getSn RX RSR(0);
                                                                      c2Nhcmdlbm5lcjUlNng0NQ==
                                                                      MODE AUTHENTICATE
  }while(rcvLen == 0);
                                                                      235 Authentication succeeded
                                                                      Authenticated
                                                                                                                              none
  recv(0, sktRxBuf, rcvLen);
                                                                      Sending MAIL FROM
                                                                                                                              Handshake
                                                                      MAIL FROM: < fred@edtp.com>
  HAL UART Transmit(&huart2, sktRxBuf, rcvLen, 0xFFFF);
                                                                                                                              OFF
                                                                      250 OK
                                                                      Sending RCPT TO
 memset(src64, 0x00, sizeof(src64));
                                                                      RCPT TO:<3214266446@vtext.com>
                                                                                                                              Free
                                                                      250 Accepted
 memset(dst64, 0x00, sizeof(dst64));
                                                                      Sending DATA
  sktIndx = 0:
                                                                      354 Enter message, ending with "." on a line by itself
  srcIndx = 0:
                                                                      Sending message
                                                                                                                                  X Close
  dstIndx = 0:
                                                                      Modem lines
                                                                                       CD CD
                                                                                                   O DSR O CTS DTR RTS
                                                                                                                                HWa FW update
    if(sktRxBuf[sktIndx++] == '3' &&
                                                                      Send
        sktRxBuf(sktIndx++) == '3' &&
                                                                                                                THEX Send
        sktRxBuf[sktIndx++] == '4' &&
                                                                                                                              www.HW-group.com
                                                                                                                ☐ HEX Send
        sktRxBuf[sktIndx++] == ' ')
                                                                                                                              Hercules SETUP etility
                                                                                                                THEX Send
                                                                                                                                 Version 3.2.8
       do f
         if(sktRxBuf[sktIndx] != 0x0D && sktRxBuf[sktIndx] != 0x0A)
           src64[srcIndx] = sktRxBuf[sktIndx];
           ++srcIndx:
           ++sktIndx:
       }while(sktRxBuf[sktIndx] != 0x0D && sktRxBuf[sktIndx] != 0x0A);
```

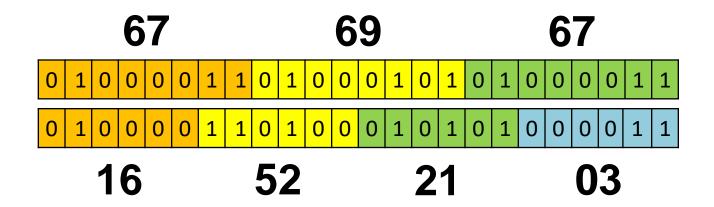






ARM SMTP Driver: Base64



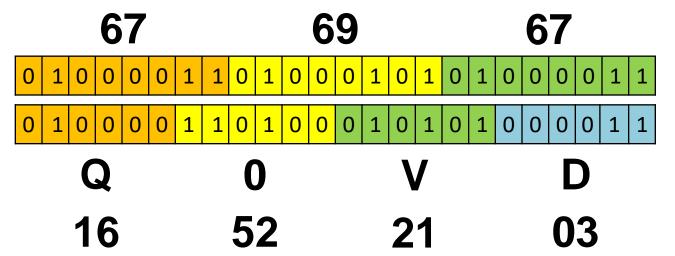






ARM SMTP Driver: Base64 Encode 24 Bits

```
173
     static const unsigned char base64 enc map[64] =
174 - {
175
176
177
         'U', 'V', 'W', 'X', 'Y', 'Z', 'a', 'b', 'c', 'd',
178
         'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n',
179
        'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x',
180
         'y', 'z', '0', '1', '2', '3', '4', '5', '6', '7',
181
         18', 19', 1+', 1/'
182
    };
```









ARM SMTP Driver: Base64 Decode 24 Bits

```
//base64 dec map = ASCII chart used as an index into base64 enc map
static const unsigned char base64 dec map[128] =
  static const unsigned char base64 enc map[64] =
  174 - {
  'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J',
                                           175
  127, 127, 127, 62, 127, 127, 127,
                                           176
                                                 'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T',
   54, 55, 56, 57, 58, 59, 60,
                            61, 127, 127,
                                           177
                                                 'U', 'V', 'W', 'X', 'Y', 'Z', 'a', 'b', 'c', 'd',
                     0,
      64, 127, 127, 127,
                         1,
                             2,
                                                 'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n',
                                           178
   5, 6, 7, 8, 9,
                     10,
                        11.
                            12.
                                           179
                                                 'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x',
      16, 17, 18, 19,
                     20, 21,
                            22,
                                                 'v', 'z', '0', '1', '2', '3', '4', '5', '6', '7',
                                           180
   25, 127, 127, 127, 127, 127, 127,
                            26,
                                           181
                                                 18', 19', 1+', 1/'
   29, 30, 31, 32, 33, 34, 35, 36, 37,
                                           182
   39, 40, 41, 42, 43, 44, 45,
                            46, 47, 48,
   49, 50, 51, 127, 127, 127, 127, 127
1:
//static const unsigned char base64 dec map[128] =
1/1
    11
    67
                                                              69
    11
11
    +, 127, 127, 127,
    127, 127, 127,
11
                    6,
                       7,
                           8,
         =, 127, 127, 127,
             Н,
                I,
                    J,
                       K,
                                      0,
             R,
                S,
                    Τ,
     Z. 127, 127, 127, 127, 127, 127,
            f,
                        i,
                           j,
         e,
                g,
                    h,
11
     n,
            p,
                q,
                    r,
                        3,
                           t,
     x, y, z, 127, 127, 127, 127, 127
```

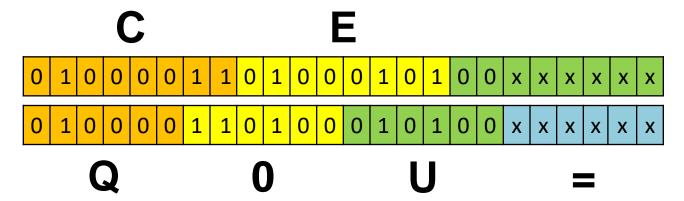


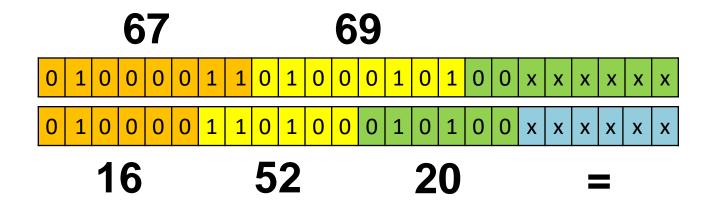




//};

ARM SMTP Driver: Base64 Encode 16 bits









Presented by:

DesignNews

ARM SMTP Driver: Base64 Encode 8 bits





ARM SMTP Driver: Send MAIL FROM Data

```
case MODE MAILFROM:
 printf("Sending MAIL FROM\r\n");
  HAL UART Transmit(&huart2, emaildata.emfrm, lenmailfrm, 0xFFFF);
  send(0,emaildata.emfrm, lenmailfrm);
                                                                   Hercules SETUP utility by HW-group.com
  HAL Delay(2000);
                                                                   UDP Setup Serial TCP Client TCP Server UDP Test Mode About
  rcvLen = 0:
                                                                   Received/Sent data
  do{
                                                                                                                           Serial
                                                                   Sending AUTH LOGIN
                                                                                                                           Name
    rcvLen = getSn RX RSR(0);
                                                                   334 VXN1cm5hbWU6
                                                                                                                           COM4
                                                                                                                                     w
  }while(rcvLen == 0);
                                                                   Sending Username
                                                                   ZnJ1ZEB1ZHRwLmNvbQ==
                                                                   334 UGFzc3dvcmQ6
                                                                                                                           115200
  recv(0, sktRxBuf, rcvLen);
                                                                   Sending Password
                                                                                                                           Data size
  HAL UART Transmit(&huart2, sktRxBuf, rcvLen, 0xFFFF);
                                                                   c2Nhcmd1bm51ciU1Nng0NO==
                                                                   MODE AUTHENTICATE
                                                                                                                           Parity
                                                                   235 Authentication succeeded
  sktIndx = 0:
                                                                   Authenticated
                                                                                                                           none
                                                                   Sending MAIL FROM
                                                                                                                           Handshake
                                                                   MAIL FROM: < fred@edtp.com>
    if(sktRxBuf[sktIndx++] == '2' &&
                                                                                                                           OFF
                                                                                                                                     ¥
                                                                   250 OK
        sktRxBuf[sktIndx++] == '5' &&
                                                                                                                           Mode
                                                                   Sending RCPT TO
        sktRxBuf[sktIndx++] == '0' &&
                                                                   RCPT TO:<
                                                                                    @vtext.com>
                                                                                                                           Free
        sktRxBuf(sktIndx++) == ' ')
                                                                   250 Accepted
                                                                   Sending DATA
                                                                   354 Enter message, ending with "." on a line by itself
       lastpstate = MODE MAILFROM;
                                                                   Sending message
                                                                                                                               X Close
      pstate = MODE RCPTTO;
                                                                    Modem lines
                                                                                    HWg FW update
    else
                                                                    Send
                                                                                                             ☐ HEX Send
                                                                                                                           group
         lastpstate = pstate;
                                                                                                                           www.HW-group.com
                                                                                                             ☐ HEX Send
         pstate = MODE MONITOR;
                                                                                                                           Hercules SETUP etility
         close(0);
                                                                                                             ☐ HEX Send
                                                                                                                              Version 3.2.8
  break:
```







ARM SMTP Driver: Send RCPT TO Data

```
case MODE RCPTTO:
  printf("Sending RCPT TO\r\n");
  HAL UART Transmit(&huart2, emaildata.emto, lenmailto, 0xFFFF);
  send(0,emaildata.emto, lenmailto);
                                                                      Hercules SETUP utility by HW-group.com
  HAL Delay(2000);
  rcvLen = 0:
                                                                     UDP Setup Serial TCP Client TCP Server UDP Test Mode About
                                                                     Received/Sent data
  do {
                                                                                                                               Serial
                                                                     Sending AUTH LOGIN
    rcvLen = getSn RX RSR(0);
                                                                                                                              Name
                                                                     334 VXN1cm5hbWU6
                                                                                                                              COM4
  }while (rcvLen == 0):
                                                                     Sending Username
                                                                     ZnJ1ZEB1ZHRwLmNvbQ==
                                                                     334 UGFzc3dvcmQ6
                                                                                                                              115200
  recv(0, sktRxBuf, rcvLen);
                                                                     Sending Password
 HAL UART Transmit(&huart2, sktRxBuf, rcvLen, 0xFFFF);
                                                                                                                              Data size
                                                                     c2Nhcmdlbm5lcjUlNng0NQ==
                                                                     MODE AUTHENTICATE
                                                                     235 Authentication succeeded
  sktIndx = 0:
                                                                     Authenticated
                                                                                                                              none
                                                                     Sending MAIL FROM
                                                                                                                              Handshake
    if(sktRxBuf[sktIndx++] == '2' &&
                                                                     MAIL FROM: < fred@edtp.com>
                                                                                                                              OFF
                                                                     250 OK
        sktRxBuf[sktIndx++] == '5' &&
                                                                     Sending RCPT TO
        sktRxBuf[sktIndx++] == '0' &&
                                                                     RCPT TO:
                                                                                      6@vtext.com>
                                                                                                                              Free
        sktRxBuf[sktIndx++] == ' ')
                                                                     250 Accepted
                                                                     Sending DATA
                                                                     354 Enter message, ending with "." on a line by itself
       lastpstate = pstate;
                                                                     Sending message
                                                                                                                                   X Close
      pstate = MODE SENDDATA;
                                                                      Modem lines
                                                                                       OCD RI ODSR OCTS TOTR TRTS
                                                                                                                                HWo FW update
    else
                                                                      Send
                                                                                                                THEX Send
         lastpstate = pstate;
                                                                                                                               www.HW-group.com
                                                                                                                THEX Send
         pstate = MODE MONITOR;
                                                                                                                              Hercules SETUP etility
         close(0);
                                                                                                                THEX Send
                                                                                                                                 Version 3.2.8
    break;
```







ARM SMTP Driver: Send Message

```
case MODE SENDMAIL:
  printf("Sending message\r\n");
  sprintf((char*)sktTxBuf, "From: Sump Pump\r\nSubject: Moisture Alert\r\nTo: Pump Owner\r\n");
  send(0,sktTxBuf,strlen((char*)sktTxBuf));
  sprintf((char*)sktTxBuf, "Moisture Sensor indicates pump is not running.\r\n.\r\n");
  send(0,sktTxBuf,strlen((char*)sktTxBuf));
  HAL Delay (2000);
                                                                     Hercules SETUP utility by HW-group.com
  rcvLen = 0:
                                                                     UDP Setup | Serial | TCP Client | TCP Server | UDP | Test Mode | About
  do {
                                                                    Received/Sent data
                                                                                                                            Serial
    rcvLen = getSn RX RSR(0);
                                                                     c2Nhcmdlbm51cjU1Nng0NQ==
  }while(rcvLen == 0);
                                                                     MODE AUTHENTICATE
                                                                                                                            COM4
                                                                     235 Authentication succeeded
                                                                    Authenticated
  recv(0, sktRxBuf, rcvLen);
                                                                     Sending MAIL FROM
                                                                                                                            115200
  HAL UART Transmit(&huart2, sktRxBuf, rcvLen, 0xFFFF);
                                                                    MAIL FROM: < fred@edtp.com>
                                                                                                                           Data size
                                                                    250 OK
                                                                     Sending RCPT TO
  sktIndx = 0:
                                                                                                                           Parity
                                                                     RCPT TO:<3214266446@vtext.com>
                                                                     250 Accepted
                                                                                                                            none
                                                                     Sending DATA
    if(sktRxBuf[sktIndx++] == '2' &&
                                                                                                                           Handshake
                                                                     354 Enter message, ending with "." on a line by itself
        sktRxBuf(sktIndx++) == '5' &&
                                                                                                                            OFF
                                                                     Sending message
        sktRxBuf(sktIndx++) == '0' &&
                                                                                                                            Mode
                                                                     250 OK id=lgjVHA-00070q-DD
                                                                     Sending OUIT
                                                                                                                            Free
        sktRxBuf(sktIndx++1 == ' ')
                                                                     221 smtp.spiderhost.com closing connection
                                                                     Closing Socket 0
      lastpstate = MODE SENDDATA;
                                                                    MODE MONITOR
      pstate = MODE QUIT;
                                                                                                                               X Close
                                                                     Modem lines
                                                                                     HWg FW update
    else
                                                                     Send
                                                                                                              ☐ HEX Send
         lastpstate = pstate;
                                                                                                                            group
         pstate = MODE MONITOR;
                                                                                                                            www.HW-group.com
                                                                                                              ☐ HEX Send
         close(0);
                                                                                                                           Hercules SETUP atility
                                                                                                              ☐ HEX Send
                                                                                                                              Version 3.2.8
  break:
```







ARM SMTP Driver: Send Quit and Exit to MONITOR MODE

```
case MODE QUIT:
                                                                      Section 4 Hercules SETUP utility by HW-group.com
                                                                                                                                        X
       printf("Sending OUIT\r\n");
                                                                      UDP Setup Serial TCP Client TCP Server UDP Test Mode About
       sprintf((char*)sktTxBuf, "QUIT\r\n");
                                                                      Received/Sent data
       send(0,sktTxBuf,strlen((char*)sktTxBuf));
                                                                                                                              Serial
                                                                      c2Nhcmdlbm5lcjUlNng0NQ==
                                                                      MODE AUTHENTICATE
                                                                                                                             COM4
                                                                     235 Authentication succeeded
  HAL Delay (2000);
                                                                     Authenticated
  rcvLen = 0:
                                                                     Sending MAIL FROM
                                                                                                                             115200
  dof
                                                                     MAIL FROM: < fred@edtp.com>
                                                                                                                             Data size
                                                                     250 OK
    rcvLen = getSn RX RSR(0);
                                                                     Sending RCPT TO
  }while(rcvLen == 0);
                                                                     RCPT TO:<3214266446@vtext.com>
                                                                      250 Accepted
                                                                                                                             none
                                                                     Sending DATA
  recv(0, sktRxBuf, rcvLen);
                                                                                                                             Handshake
                                                                      354 Enter message, ending with "." on a line by itself
  HAL UART Transmit(&huart2, sktRxBuf, rcvLen, 0xFFFF);
                                                                                                                             OFF
                                                                      Sending message
                                                                      250 OK id=lgjVHA-0007Oq-DD
                                                                      Sending OUIT
                                                                                                                             Free
  sktIndx = 0:
                                                                     221 smtp.spiderhost.com closing connection
                                                                      Closing Socket 0
    if(sktRxBuf[sktIndx++] == '2' &&
                                                                     MODE MONITOR
        sktRxBuf[sktIndx++] == '2' &&
                                                                                                                                 X Close
                                                                      Modem lines
        sktRxBuf[sktIndx++] == '1' &&
                                                                                            HWg FW update
        sktRxBuf[sktIndx++] == ' ')
                                                                      Send
       printf("Closing Socket 0\r\n");
                                                                                                               ☐ HEX Send
                                                                                                                             group
       close(0);
                                                                                                                             www.HW-group.com
                                                                                                                THEX Send
                                                                                                                             Hercules SETUP etility
    else
                                                                                                               ☐ HEX Send
                                                                                                                                Version 3.2.8
       printf("Did not get expected response from server. Closing Socket 0\r\n");
       close (0);
  lastpstate = MODE QUIT;
  pstate = MODE MONITOR;
  scratch8++;
break:
```

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Day 5 Summary

