



Application Note

Answer MAN

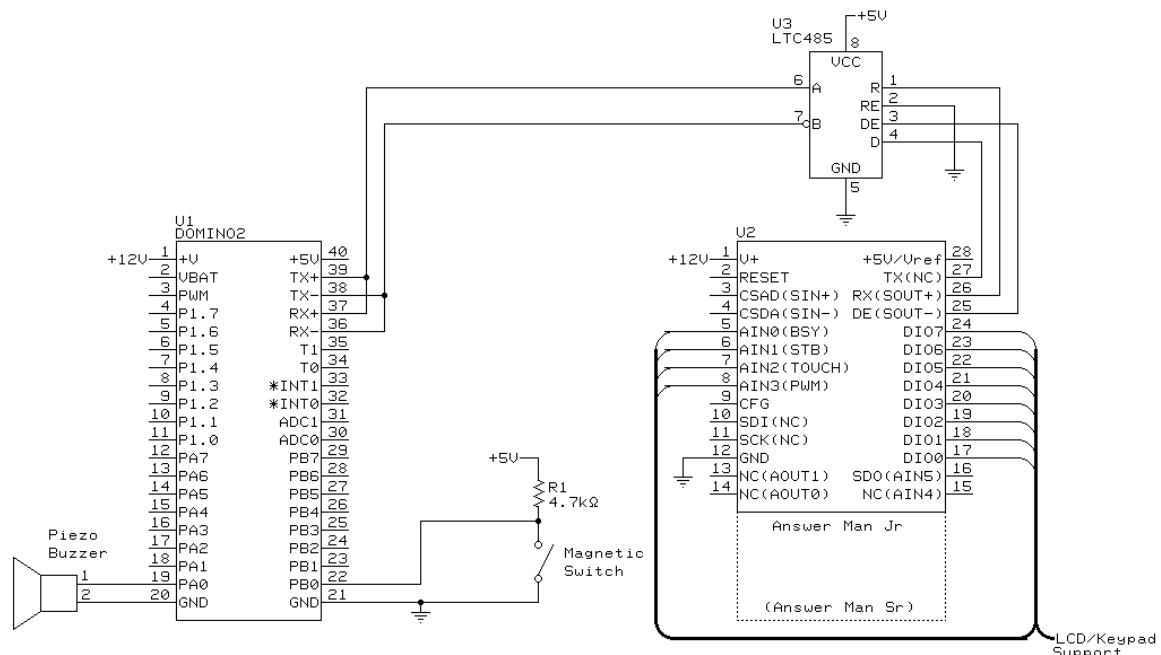
Controlling Answer MAN with the Domino 2

2/20/00

Introduction: This application note demonstrates how to control the Answer Man using the Domino micro-controller.

Background: Answer MAN communicates via serial ASCII protocol at speeds as high as 57.6 kbps. Answer MAN's simple Query or Set command language reduces costly programming. Making a remote keypad/LCD terminal as simple as connecting the LCD and keypad to an Answer MAN.

How it works: By connecting the Answer MAN to the Domino via RS-485 they can communicate by sending ASCII commands and replies to each other. Below is Basic-52 code for a Domino connected to an Answer MAN with LCD/keypad interface. The Answer MAN's configuration should be set to 2000H and have a name of MAN0. Please refer to the Answer MAN data sheet for connecting the LCD and keypad to the Answer MAN.



Program Listing:

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10 REM *** This program demonstrates the Answer Man
20 REM *** controlled by the Domino 2.
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30 MTOP=12288
35 REM *** Answer MANs response will be 14 characters so add 2
36 REM *** for the total bytes expr
40 STRING 16,14
50 REM *** Transmit Disable Assembly Routine
60 XBY(32000)=0C2H
70 XBY(32001)=0B4H
80 XBY(32002)=022H
90 REM *** Transmit Enable Assembly Routine
100 XBY(32003)=0D2H
110 XBY(32004)=0B4H
120 XBY(32005)=022H
130 REM *** Set up the Co-processor
140 R=30H : DT=0H
150 GOSUB 11000
160 CALL 32003
170 REM *** Have the Answer MAN print to the LCD
180 ?"! MAN0 S=**Micromints Alarm**"
190 ?"! MAN0 S=*****Enter your*****"
200 ?"! MAN0 S=**four digit pin #."
210 REM *** Read pin 22 of the Domino 2 for an intruder.
220 R=48H
230 GOSUB 10030
240 REM *** The switch is open, sound the alarm.
250 IF DT=1 THEN GOTO 690
260 REM *** Delay to be able to enter a code.
270 FOR X=0 TO 1000 : NEXT X
280 REM *** Enable the transmitter
290 CALL 32003
300 REM *** Ask Answer MAN to scan the Keypad.
310 ?"! MAN0 Q"
320 REM *** Disable the transmitter.
330 CALL 32000
340 REM *** Storing the Answer MAN response in a string.
350 INPUT $(0)
360 REM *** Taking the 4 digit pin number from the Answer MAN
370 REM *** response and storing them in variables A-D. In this
380 REM *** example the pin # is 1234. Since the Answer MAN
390 REM *** responds with the format $ MAN0 00 1234, we have to
400 REM *** store the response in a string and select what part of
410 REM *** the strings information we need by selecting it out of
420 REM *** memory. The mathematical equation for figuring out where
430 REM *** the string is stored in memory is(MTOP)-(total byte expr)
440 REM *** In this example. 12288-16=12272. We now have to add 10
450 REM *** because the Answer MAN inserts 10 bytes before the pin#
455 REM *** ($_MAN0_00_XXXX).Where X is the pin#. So we need to look
460 REM *** at memory location 12282 to 12285.
465 REM *** The following four lines do this.
470 A=XBY(12282)
480 B=XBY(12283)
490 C=XBY(12284)
500 D=XBY(12285)
510 REM *** The Answer MAN responds with ASCII characters.
520 REM *** Therefore a 1 is represented as 49 in ASCII.
530 IF (A=13.AND.B=0.AND.C=0.AND.D=0) THEN GOTO 220
540 IF (A<>49.OR.B<>50.OR.C<>51.OR.D<>52) THEN GOTO 690
550 REM *** Enable Transmitter

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```

560 CALL 32003
570 REM *** Have the Answer MAN print to the LCD.
580 ?"! MAN0 S=\e[2J" :REM Clear the LCD display.
590 ?"! MAN0 S=You may enter."
600 REM *** Turn off the alarm.
610 R=50H : DT=0H
620 GOSUB 11000
630 REM *** Delay to allow entry into the secure area.
640 FOR X=0 TO 2000 : NEXT X
650 ?"! MAN0 S=\e[2J"
660 REM *** Start the process over.
670 GOTO 60
680 REM *** Enable the transmit
690 CALL 32003
710 ?"! MAN0 S=\e[2J"
720 ?"! MAN0 S=INTRUDER"
730 REM *** Delay to allow INTRUDER to flash on the LCD.
740 FOR X=0 TO 200 : NEXT X
750 ?"! MAN0 S=\e[2J"
760 REM *** Turn the alarm's buzzer on.
770 R=50H : DT=1H
780 GOSUB 11000
790 REM *** Start the process over.
800 GOTO 60
10000 REM *****
10010 REM Coprocessor Read Routine
10020 REM
10030 PUSH 2000H + R
10040 CALL 0F12Ch
10050 POP DT
10060 IF DT>255 THEN ?"Communicates error!!!"
10070 RETURN
10080 REM
10997 REM *****
10998 REM Coprocessor Write Routine
10999 REM
11000 PUSH 2000H+R,DT
11010 CALL 0F128H
11020 POP DT
11030 IF DT>255 THEN PRINT "Communications error !!!"
11040 RETURN
11050 REM
11060 REM *****

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