CtrlCtr.exe V1.4 Display Screen Snapshot

```
Command Line->  pa 9 0 0 5 5 20 5 39 0
Message Area->
                00000000001111111111222222222233333333333       CMD ACK                E001 =   1
                01234567890123456789012345678901234567890       ADD   006 005          E002 =   2
                18                                        18     MOVE  001              E003 =   5
                17                                        17     PATH  001              E011 =   1
                16                                        16     LOOP  004 004          E022 =   1
                15                                        15     STOP                   E032 =   1
                14                                        14
                13                                        13     ADDR   STEP     HERE  X  Y
                12                                        12      3 000283NE 000283 36 11
                11                               3        11      4 000329E  000329 21 10
                10                      4        56        10      5 000270E  000270 34 10
                09                                        09      6 000315W  000315 35 10
                08                                        08      7        ^         ^
                07                                        07      8        /         /
                06                                        06      9     Last      Last
                05                                        05      A     Step      Here I Am
                04                                        04      B     Direction Position
                03                                        03      C
                02                                        02      D
                01                                        01      E
                00                                        00      F
                00000000001111111111222222222233333333333
                01234567890123456789012345678901234567890       0T    0R DF=00000 SND=OFF V1.4
                            P1 P2 P3 SA DA PL TY
                OUTGOING PKT: (ADD ) 03 ef af 01 02 11 01 03 03 03 49       |          |
                INCOMING PKT: (ACK ) 03 ef af 02 01 09 0a 01 42   Delay Factor  Sound State
```

Command Line->
Message Area->

Error
<-Packet
Counts

Step / Here
<-Packet
Counts

y-axis labels->

x-axis labels->

Last Outgoing Pkt->
Last Incoming Pkt->

^
|
Transmit & Receive
Rates (Bytes / sec.)

^
|
CtrlCtr.exe
Version #

CtrlCtr.exe Command List

COMMAND	DESCRIPTION	COMMAND PACKET TYPE
AD $addr$ x y	Add a new robot whose address is $addr$ at position (x, y).	Add robot
MV $addr$ x y	Move robot $addr$ to position (x, y).	Move robot
PA $addr$ x_1 y_1 x_2 y_2 x_3 y_3 …	Make robot $addr$ follow the path from its current position to up to 10 stops at positions (x_1, y_1), (x_2, y_2), (x_3, y_3), …	Follow Path
LP $addr$ x_1 y_1 x_2 y_2 x_3 y_3 …	Make robot $addr$ repeatedly follow the path from its current position to up to 10 stops at positions (x_1, y_1), (x_2, y_2), (x_3, y_3), … (x_1, y_1), (x_2, y_2), (x_3, y_3), …(x_1, y_1), (x_2, y_2), (x_3, y_3), … The robot will continually trace out a looping path through the specified stop positions. Note that the loop does not include the starting position of the robot at the time the command is issued (unless the first stop *is* the initial position.	Loop
ST addr	Make robot $addr$ stop looping.	Stop Looping
OF $filename$	Open and execute command file $filename$.cmd (Up to 20 levels of nesting).	None
FE 1 n	Force a preamble byte 1 error once per n command packets transmitted to the STM32F107.	None
FE 2 n	Force a preamble byte 2 error once per n command packets transmitted to the STM32F107.	None
FE 3 n	Force a preamble byte 3 error once per n command packets transmitted to the STM32F107.	None
FE 4 n	Force a checksum error once per n command packets transmitted to the STM32F107.	None
FE 5 n	Force a packet length error once per n command packets transmitted to the STM32F107.	None
FE 6 n	Force a message type error once per n command packets transmitted to the STM32F107.	None
FE	Stop forcing errors.	None
QU	Quit from CtrlCtr.exe.	None
DF n	Set the delay factor to "n." Increasing the delay factor slows the rate that Robot.exe transmits bytes on the RS232 link.	None
RE	Send a Reset packet to the microcontroller, forcing a reboot.	Reset
--	Comment prefix	None
WA	Await a key press before continuing script execution.	None
SO	Toggle sound on and off.	None

LOG FILE: CtrlCtr.exe records a log file called "Robots.log" giving a history of commands entered, command packets transmitted, and reply packets received. This file is erased and recreated each time CtrlCtr.exe starts up. A sample log file is shown below:

```
COMMAND: ad 3 3 3

OUTGOING PKT: 03 ef af 01 02 0b 01 03 03 03 49
 Add Robot 3 3 3


INCOMING PKT: 03 ef af 02 01 09 0a 01 42

COMMAND: mv 3 5 5

OUTGOING PKT: 03 ef af 01 02 0b 02 03 05 05 4a
 Move Robot 3 5 5


INCOMING PKT: 03 ef af 02 03 0d 07 01 00 00 00 02 4b
 Step Robot 3 from (3, 3) to (4, 4).

OUTGOING PKT: 03 ef af 03 00 0a 09 04 04 43


INCOMING PKT: 03 ef af 02 01 09 0a 02 41

INCOMING PKT: 03 ef af 02 03 0d 07 02 00 00 00 02 48
 Step Robot 3 from (4, 4) to (5, 5).

OUTGOING PKT: 03 ef af 03 00 0a 09 05 05 43


COMMAND: qu
```