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PRELIMINARY INFORMATION

R.E.Smith I/O Commander USER GUIDE

Serial Port Communication Utility

**(Software Version Rescomdr-20080204.exe)**

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INTRODUCTION

The R.E.Smith I/O Commander is a multifunction communication Microsoft Windows™ compatible utility that enables the user to control and configure R.E.Smith Communications and I/O products. Many functions of the utility will work with most serial port devices manufactured by other sources.
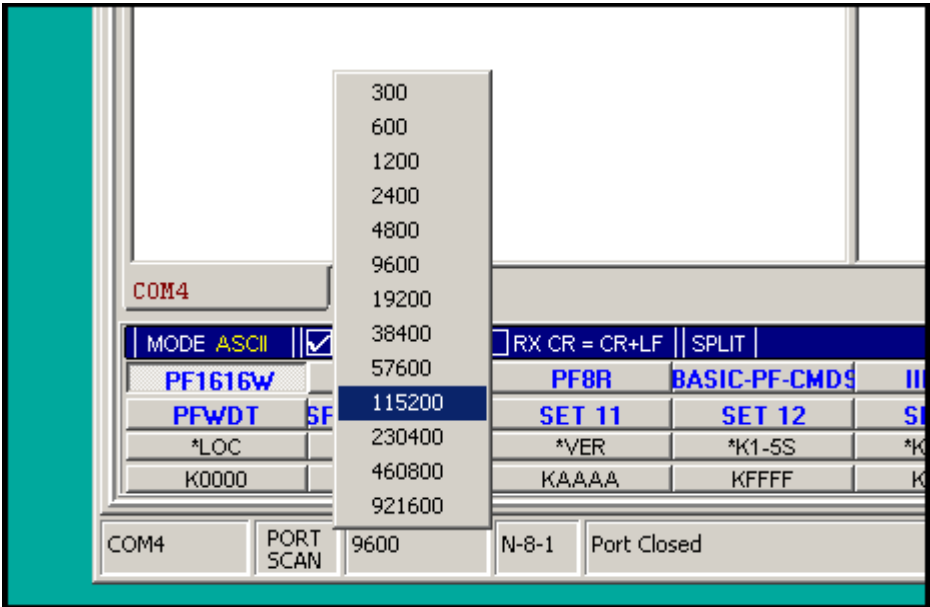
Figure 1. I/O Commander
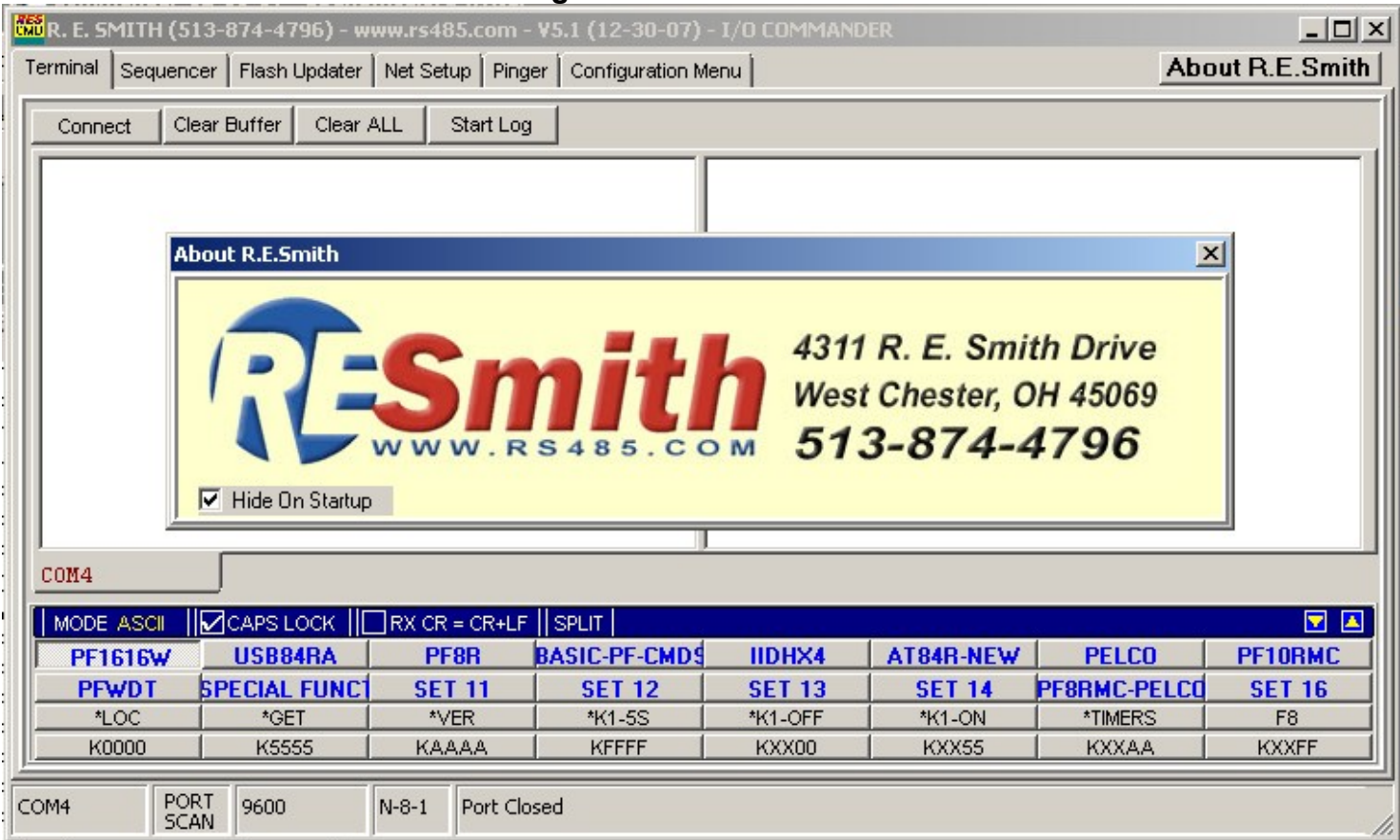
Setup

Setting the communication settings for working with RS232 devices is easy. Clicking the areas on the bottom of the application will bring up pop-up menus for the communication settings for communications port, baud rate, and communications specification.

Figure 2. Communications Parameters

Useful Functions

The functions of the I/O Commander are grouped into a tab organization. The two main functions are the Terminal and the Sequencer these will be discussed in detail below. Many settings are modifiable on the Configuration Menu tab, for example by default the text color for transmitted data is red and data received is shown in green. The user can change these defaults on the "Program Setup" tab of the main Configuration Menu .
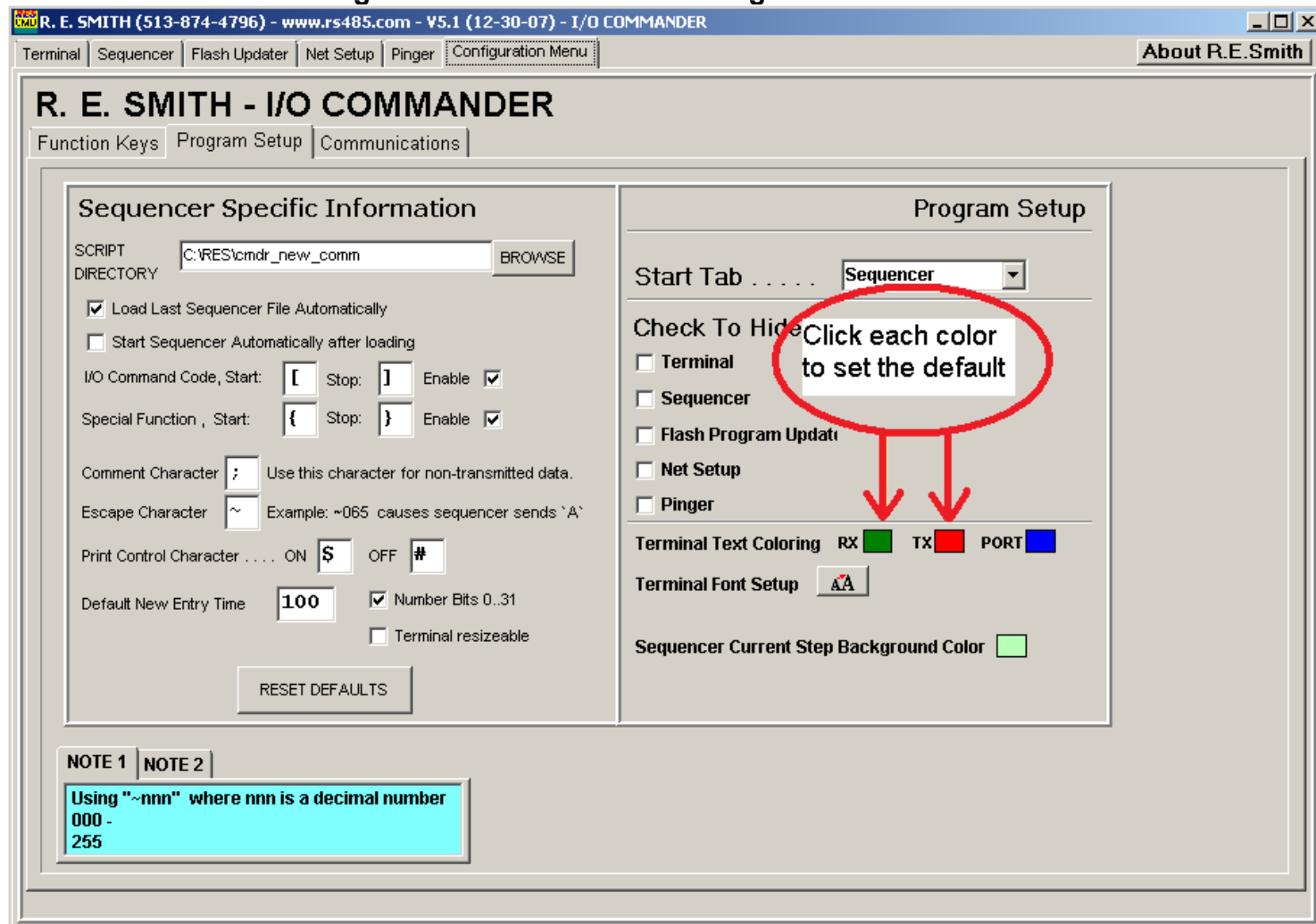
Figure 3. I/O Commander Configuration Menu Tab

Figure 4. I/O Commander Terminal

Figure 5. I/O Commander Sequencer

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Terminal | Sequencer | Flash Updater | Net Setup | Pinger | Configuration Menu | About R.E.Smith

▶ | Reset | Stop | Insert Before | Insert After | Delete Item | New Item | 📂 | 💾 | 🗋 | AА | Clear

Step	Skip	Delay (mS)	Command	Next	Last Response
1		100	{TS=10} ' TIME SCALE 1 - 100 %	2	
2		100	{BR=9600} ' BAUD RATE	3	
3		100	{CP=COM4} ' COM PORT = COMx	4	
4		102	*KXX(0FH,02H,0AH)[11]	5	
5		103	*KXX(0FH,03H,0AH)[11]	6	
6		104	*KXX(0FH,04H,0AH)[11]	7	
7		100	*KAT(0FH,0CH,0AH)[11]	8	
8		100	*KAT(0FH,03H,0AH)[11]	9	
9		100	*KAT(0FH,01H,0AH)[11]	10	
10		100	*KAT(0FH,00H,0AH)[11]	11	
11		100	*KAX(0FH,0CH,0AH)[11]	12	
12		100	*KAX(0FH,03H,0AH)[11]	13	

☑ Lock Sequence Data (read only)

Time Scale 1.00

| COM4 | PORT SCAN | 9600 | N-8-1 | Port Closed |

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Figure 6. Editing Sequencer Commands

Sequencer Configuration Commands

It is possible to configure some of the communications port settings as well as the time scale setting using a special command on a sequencer line.

Command	Description
{BR=baud}	Set the baudrate on a sequence step
{TS=value}	Set the time scale slider to a value from 1-100, 1=.02X time scale, 50=1X time scale, 100=10X time scale
{CP=comX}	Set the current communications port.

Figure 7. Sequencer Configuration Commands

Additional Sequencer Commands

The following table shows some characters have been reserved to implement some special functions on the data that is received. These functions include conditional branching based on the returned data. Also some characters can be transmitted using an escape sequence starting with a special user definable character. Settings on the Program Setup tab control the defaults.

Any character sequence can be part of a command, however, commands should not include the following characters [,], !, * and ~.	!, * and ~ can be reconfigured on the Configuration Menu/Program Setup tab.
[n]	Receive n characters, wait until n characters are received or timeout before going to next sequencer step.
[C(n, comptype, compval, tseq, fseq)]	Compare received hex value of **n** digits to compare **compval** with comparison type **comptype** and jump to false sequence number **fseq** or true sequence number **tseq**.
[B(n, comptype, compval, tseq, fseq)]	Bit Test received hex value **val** to **compval** jump to false sequence number **(fseq)** or true sequence number **tseq**.
!	Turn display of receive characters off. Note this character is configurable on the Configuration Menu/Program Setup tab.
*	Turn display of receive characters on. Note this character is configurable on the Configuration Menu/Program Setup tab.
~065	Send ascii character 65.

[n] – This operator is used to consume a number (n) characters from the external device. This is used to consume the responses from commands sent to the external unit. This data is taken from the communication port input buffer and is not stored.

*[B(***n**, CompareType, BitNum, BranchTrue, BranceFalse)]* **– This operator is used to consume a number (n) characters from the external device, it then constructs an appropriate integer value from the input and performs the given bit test using the BitNum. If the test is successful then execution continues on line indicated by BranchTrue, otherwise execution continues on line indicated by BranceFalse parameter.**

*[C(*n, CompareType, HexValue, BranchTrue, BranceFalse)]* – **This operator is used to consume a number (n) characters from the external device, it then constructs an appropriate integer value from the input and performs the given comparison using the HexValue. If the test is successful then execution continues on line indicated by BranchTrue, otherwise execution continues on line indicated by BranceFalse parameter.**

Comparison Type	Branch On Bit	Branch on Comparison
EQ - Equal		X
NE - Not Equal		X
GT - Greater		X
GE - Greater or Equal		X
LT - Less Than		X
BS - Branch if Bit Set	X	
BC - Branch if Bit Clear	X	

Example: "R5C[C(2,GE,01,3,5)][2]" This command addresses and reads the contents of register 5C, the IO board responds with data for 5C and 5D. This command compares the first two characters returned as an integer constructed with two hex digits to the value 01 hex. If the value is greater than or equal to 01 then execution continues on line 3 otherwise execution continues on line 5.

Example of hex value comparison: **[C(4,NE,FFFF,8,9)]**
The Comparison is of the hex value represented by the next 4 received characters being not equal to the unsigned value 0xffff. If the value is not equal the sequencer continues on to sequence statement 8 otherwise it goes to sequence statment 9.