LinTronic Communication Protocol

The communication between the computer and the PRODUCT is a simple ASCII communication protocol operating on a baudrate of **19200, No Parity, 8 databits and 1 StopBit** (Settings: 19200, n, 8, 1).

The communication protocol is very simple, allowing you to add more units working on the bus. You may adapt this protocol and use it for products using the same RS485 data bus. The PRODUCT will only respond if the SOT is received, if the address match, if the command is recognized, if Checksum match and if EOT is received.

SOT																EOT
<	T	T	F	F	C	C	C	D	D	D	D	D	CHK	CHK	CHK	>
	1	2	3	4	5	6	7	8	9	10	10	n-3	n-2	n-1	n	

<	= Start Of Transmission	
TT	= ToAddress	2 digits, range 00-32 (see below note)
FF	= FromAddress	2 digits, range 00-32
CCC	= Command	3 digits, range 000-999
D..D	= Data	Readable characters, letters, digits
CHK	= Checksum	Range 000 – 255 (sum of transmitted characters ascii value modules 256)
>	= End Of Transmission	

NOTE:
Address 98 is used to force a device with an unknown address to reply. Can be used with only ONE device connected.
Address 99 is a Broadcast address – use with extreme care.

Position	Character	Comments
	<	Start Of Transmission, SOT
1 – 2	0 – 9	To Address 00 – 32 (computer is address 00)
3 – 4	0 – 9	From Address 00 – 32 (computer is address 00)
5 – 7	0 – 9	Command 000 – 999
8 - (n-3)	0 – 9	Data, Readable characters, letters, digits
(n-2) – n	0 – 9	CHK CheckSum of ASCII values position 1 to n Modulus 256
	>	End Of Transmission, EOT

Checksum calculation

```
CHK = 0
For a = 1 to n
      CHK = (CHK + ASC(char(a))) MOD 256
Next a
```

The ASCII value of a digit is digit + 48. Example: ASCII value of 5 = 5 + 48 = 53.

Note: If you don't want to calculate the checksum, you may insert "---" instead, but this will reduce communication validation and security check.

Character	ASCII	Character	ASCII
0	48	5	53
1	49	6	54
2	50	7	55
3	51	8	56
4	52	9	57

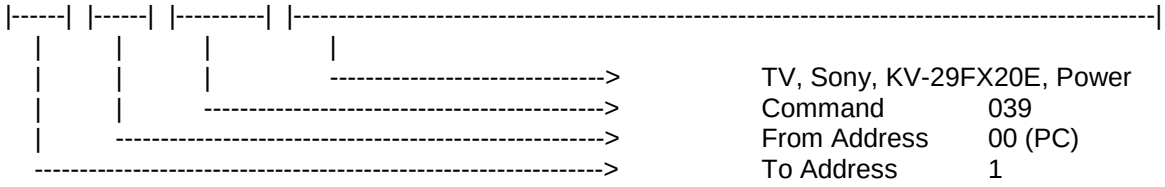
How to send a command from computer:

Example: You want to send an infrared code or you want to control a digital output.

Command 039 is controlling the events of the TableTop products.

To send for example a TV Sony Power code from our web-database, the string to be send from the computer is 71701200102100000000003=TV, SONY, KV-29FX20E, POWER:

0 1 0 0 0 3 9 7 1 7 0 1 2 0 0 1 0 2 1 0 0 0 0 0 0 0 0 0 0 0 3



Now we need to add the checksum, which will be:
0 1 0 0 0 3 9 7 1 7 0 1 2 0 0 1 0 2 1 0 0 0 0 0 0 0 0 0 0 0 3
48+49+48+48+48+51+57+54+49+54+48+49+50+48+48+49+48+50+49+48+48+48+48+48+48+48+48+48+48+48+51
= 1526 modulus 256 = 246

The complete string to be send from the computer to the TableTop will then become:
0100039 71701200102100000000003246

Finally the string is completed by adding “Start Of Transmission” ‘<’ and “End Of Transmission” ‘>’
<0100039 71701200102100000000003246>

If you want to send the string without checksum calculation, the above would look like this:
<0100039 7170120010210000000003--->

--- oOo ---