SICK
Sensor Intelligence.

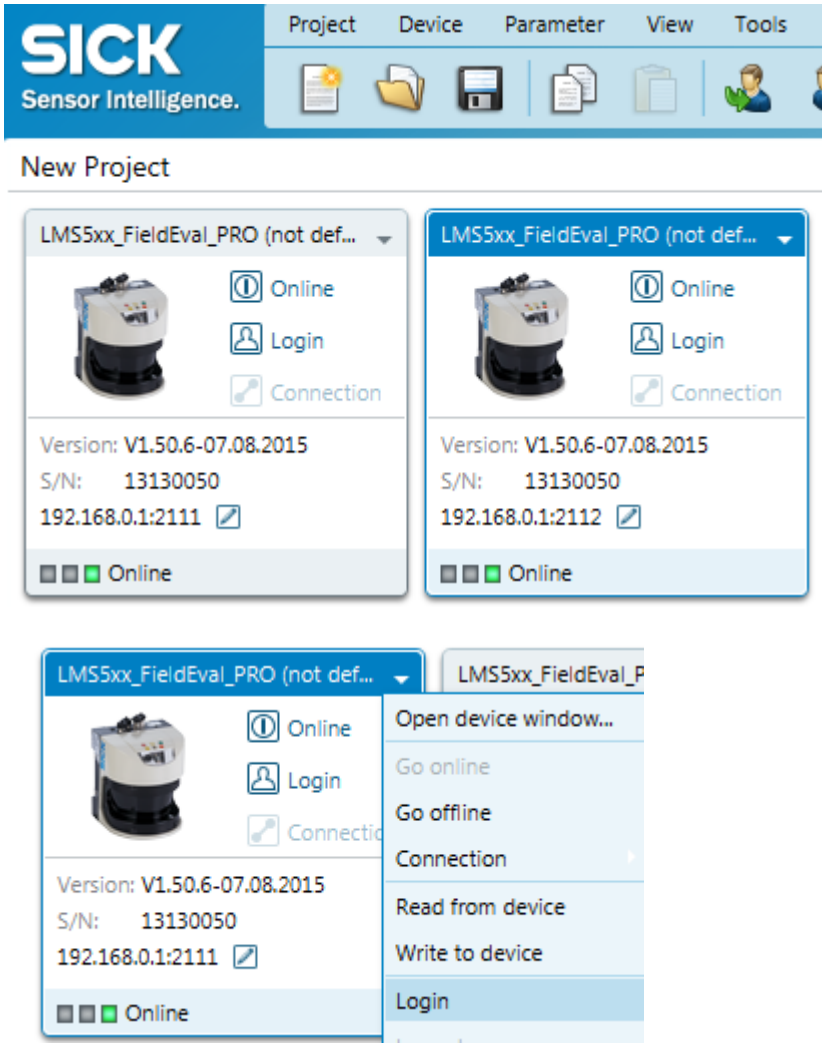
SOPAS

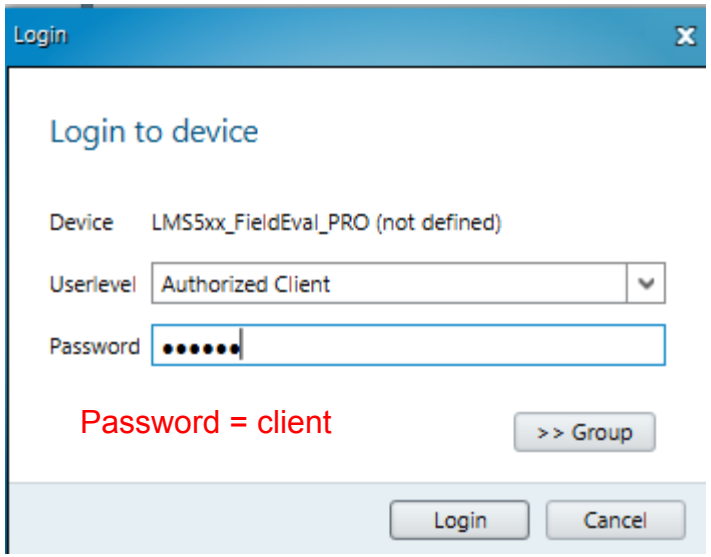
Communications Language - CoLa

August 2017

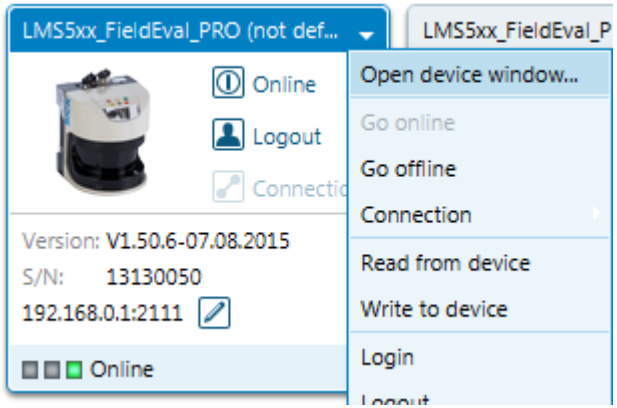
LMS / TiM : Configuration of SOPAS

There are two Ethernet ports :2111 & 2212

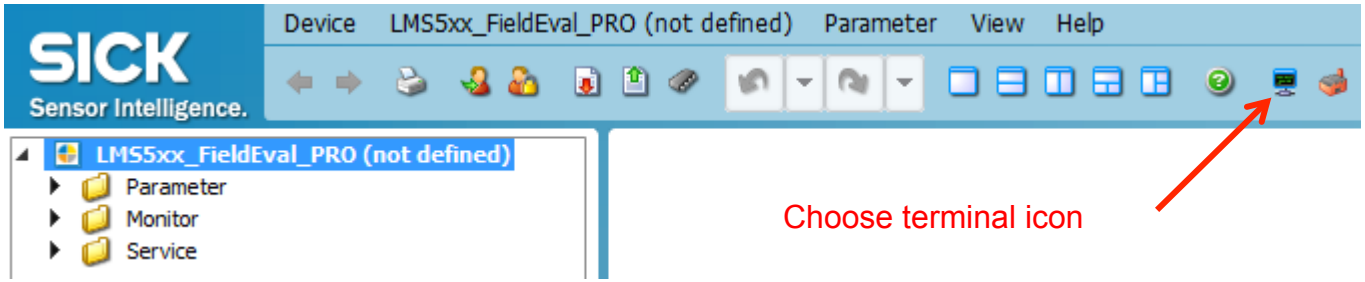


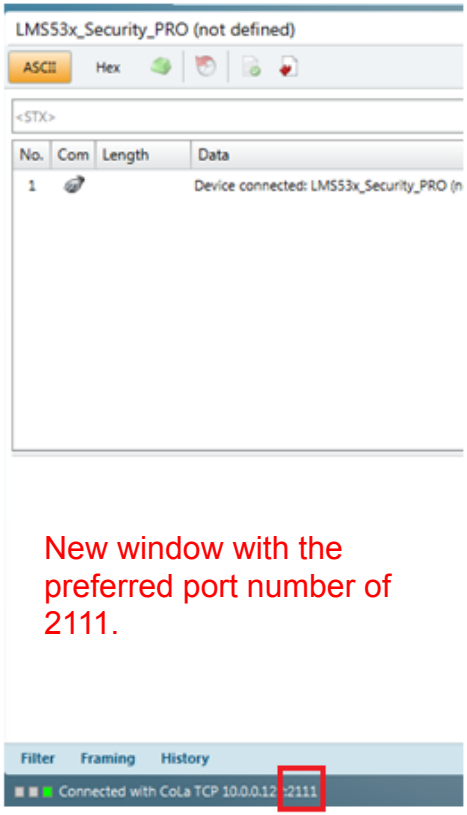


Open device window of port :2111

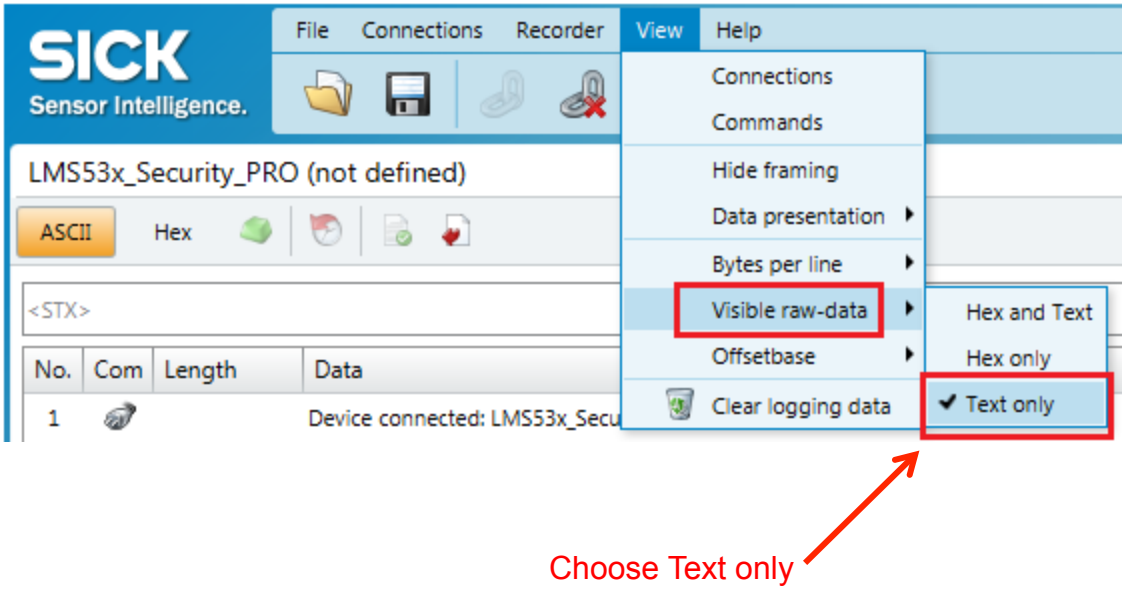


LMS / TiM : Configuration of SOPAS Terminal





New window with the preferred port number of 2111.



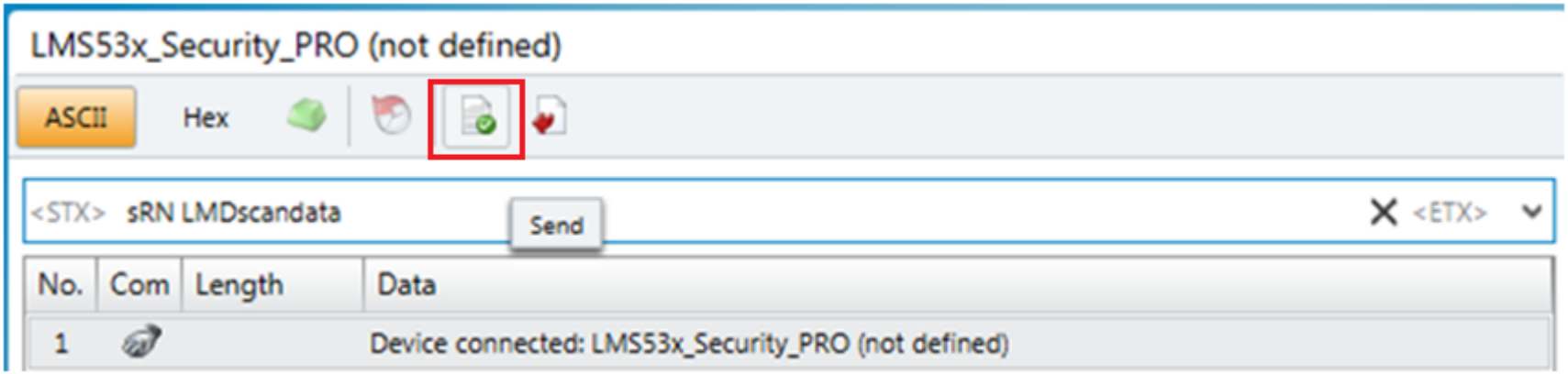
LMS / TiM : Polling one Telegram Command

Refer to the Telegram Listing for “Polling one Telegram.”

Polling one Telegram Example: sRN LMDscandata
Output of measured values of one scan.

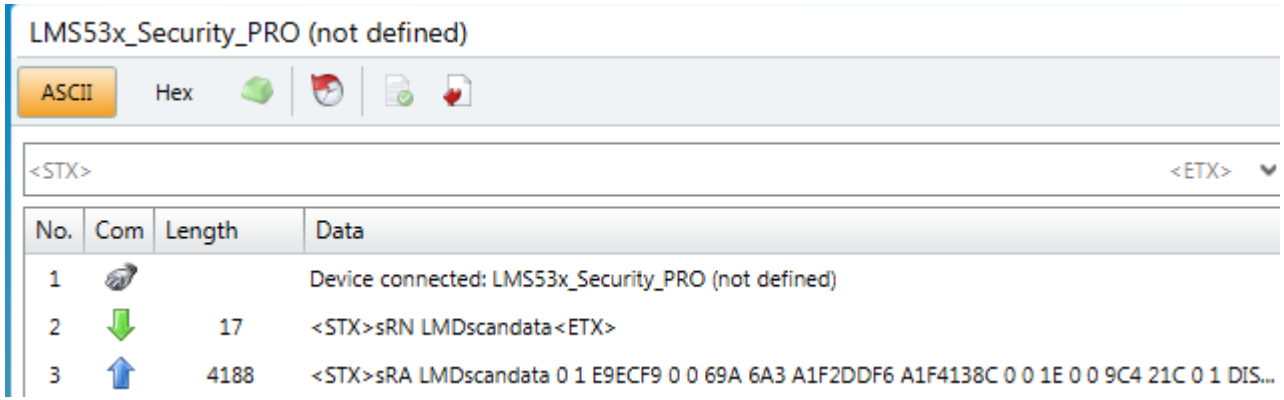
ASCII	<STX>sRN{SPC}LMDscandata<ETX>

Enter the “Polling one Telegram” into the Send telegram box below and choose “Send.”.

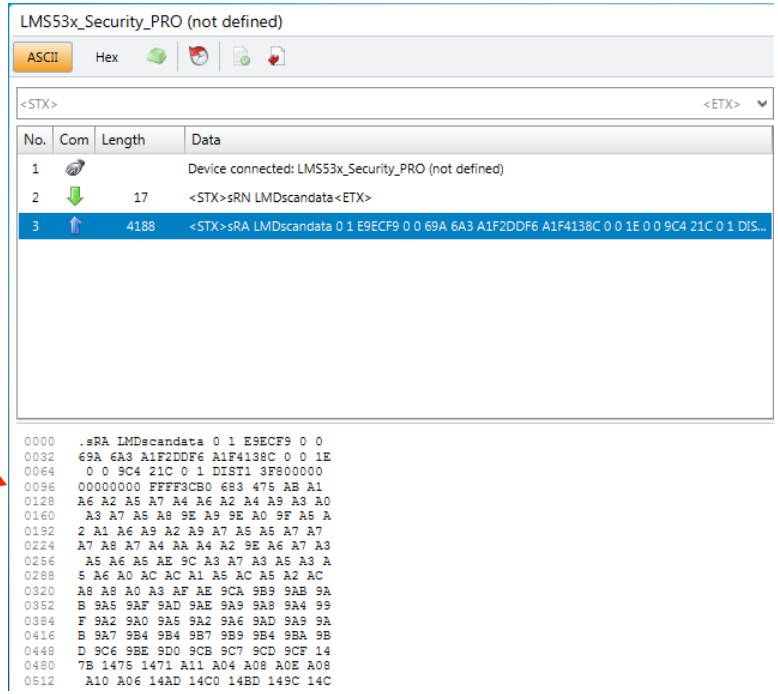


LMS / TiM : Polling one Telegram Command

Results of Polling one Telegram .



Click the result above .



Shows the data below .

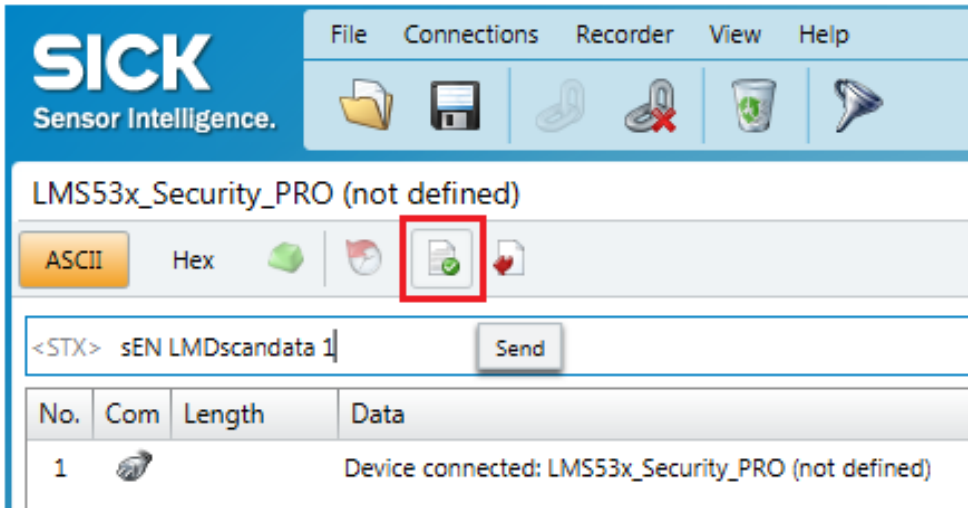
LMS / TiM : Send data permanent command

Refer to the Telegram Listing for “Send data permanent.”

Send data permanent **Example:** sEN LMDscandata

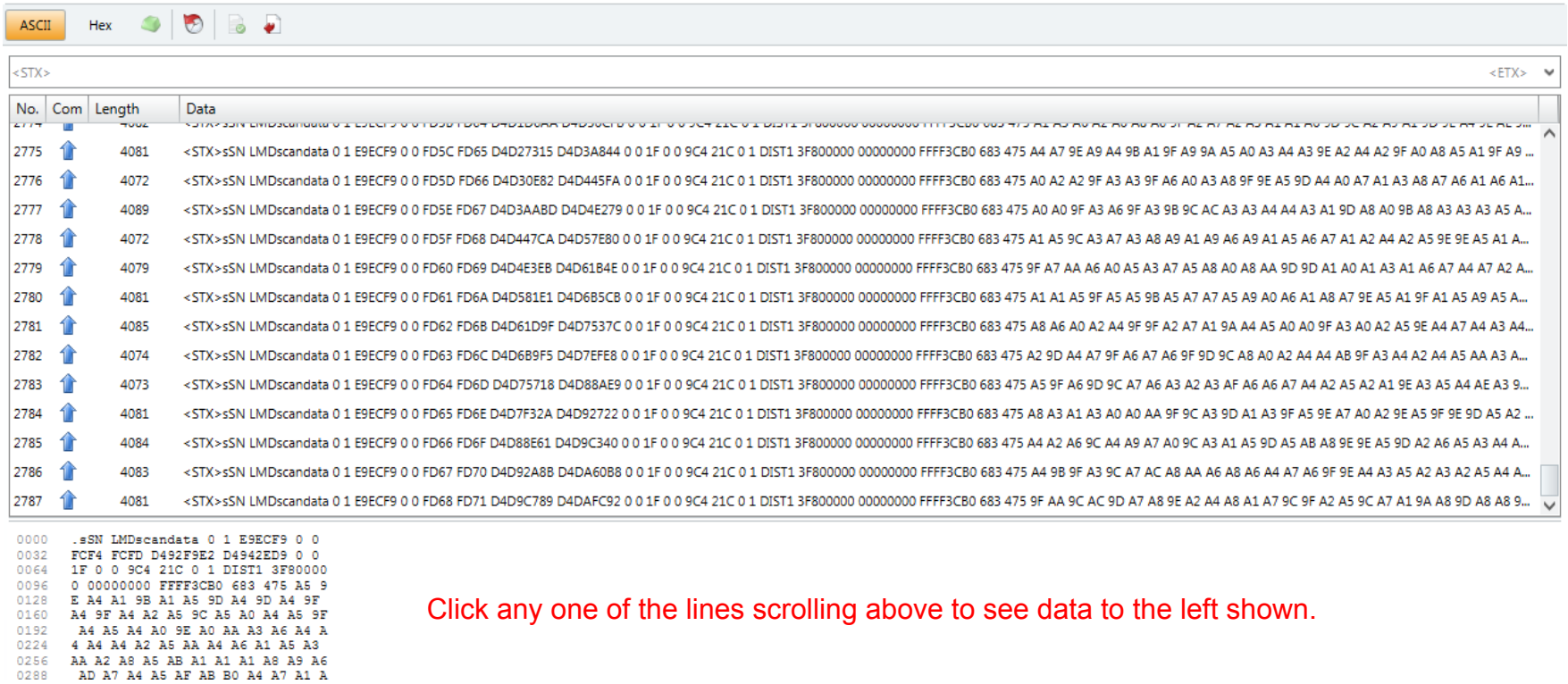
ASCII	<STX>sEN{SPC}LMDscandata{SPC}1<ETX>

Enter the “Send data permanent” into the Send telegram box below and choose “Send.”.



LMS / TiM : Send data permanent command

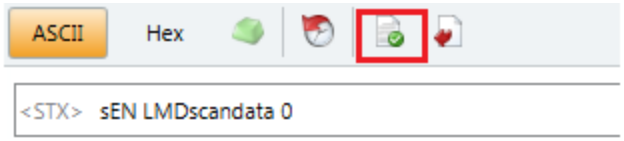
Results of the Send data permanent command. Data is being sent repeatedly at the rate of the scan frequency!



Click any one of the lines scrolling above to see data to the left shown.

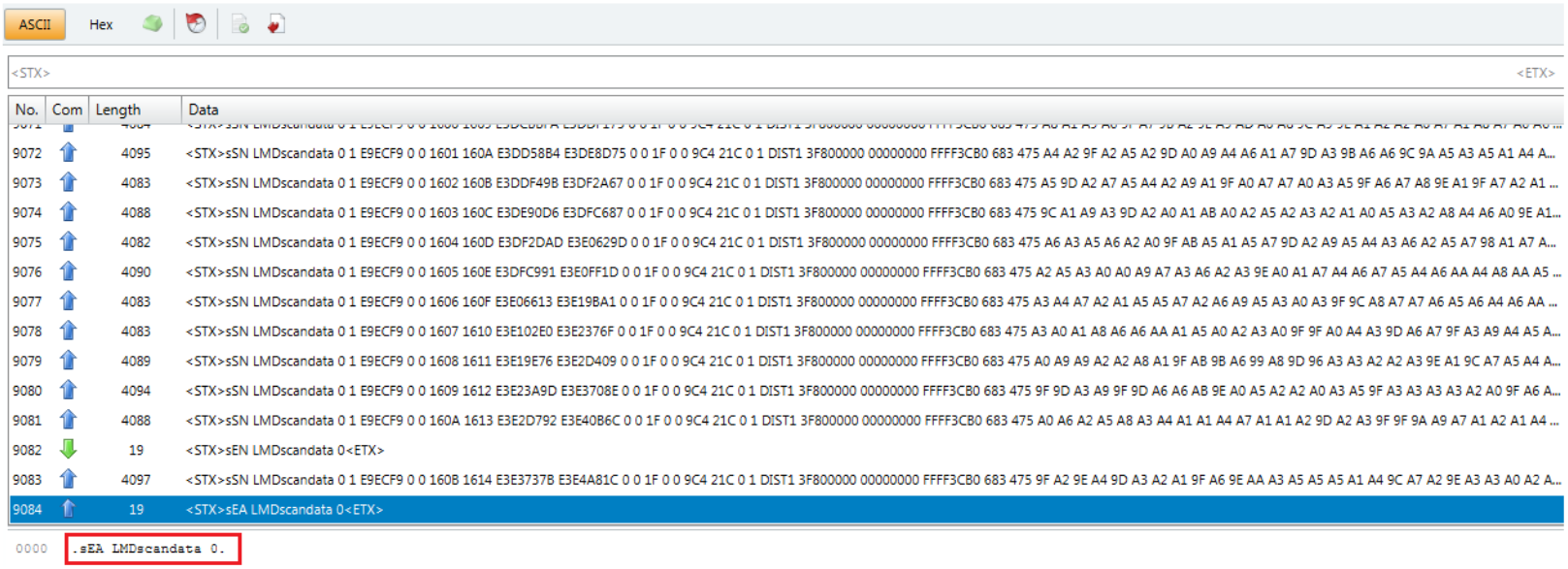
LMS / TiM : Send data permanent command

Enter the “Send data permanent” stop command into the Send telegram box below and choose “Send.”.



“Send”

Note: Start to send data is sEN LMDscandata 1. To Stop to send data is sEN LMDscandata 0.



This is the scanner response to the stop command. The screen stops scrolling.

LMS / TiM : Saving scanner settings

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Workflows

Parameterize the scan

1. Log in: sMN SetAccessMode sMN SetAccessMode 03 F4724744
2. Enter the command

Optional

Store Parameters: sMN mEEwriteall

3. Log out: sMN Run

LMS / TiM : Limit the scan angle

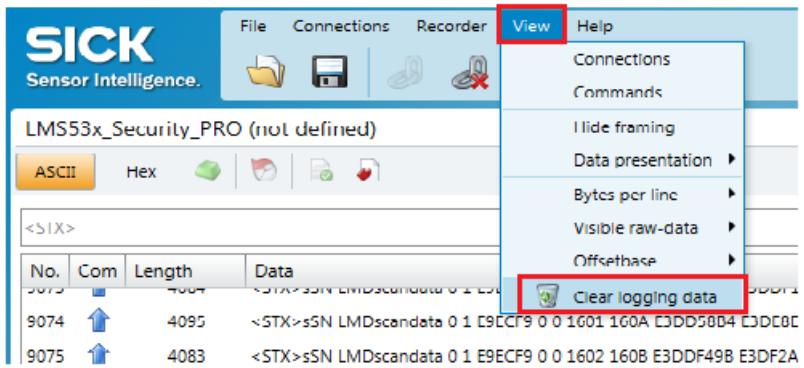
Note: Excerpt from the Telegram Listing.

Telegram structure: sWN LMPoutputRange

Telegram	Description	Variable	Length	Values ASCII	Values Binary
Command Type	Sopas by name	String	3	sWN	73 57 4E
Command	Change output angle range	String	14	LMPoutputRange	4C 4D 50 6F 75 74 70 75 74 52 61 6E 67 65
Status Code	Length	Int_16	2	1	00 01
Angle Resolution *	[1/10000°]	Uint_32	4	LMS1xx: 0,25°: 9C4h (2500d) 0,5°: 1388h (5000d) LMS5xx: 0,1667°: 683h (1667d) 0,25°: 9C4h (2500d) 0,333°: D05h (3333d) 0,5°: : 1388h (5000d) 0,667°: 1A0Bh (6670d) 1°: 2710h (10000d)	0,25°: 00 00 09 C4 0,5°: 00 00 13 88
StartAngle	[1/10000°]	Int_32	4	LMS1xx: FFF92230h..225510h (–450000d..+2250000d) LMS5xx: FFFF3CB0h..1C3A90h (–50000d..+1850000d)	FF F9 22 30 ... 00 22 55 10
Stop Angle	[1/10000°]	Int_32	4	LMS1xx: FFF92230h..225510h (–450000d..+2250000d) LMS5xx: FFFF3CB0h..1C3A90h (–50000d..+1850000d))	FF F9 22 30 ... 00 22 55 10

Note: Red block cannot be Changed by this command. For example the scanner is operating at 0.5 degree angular resolution.

LMS / TiM : Limit the scan angle

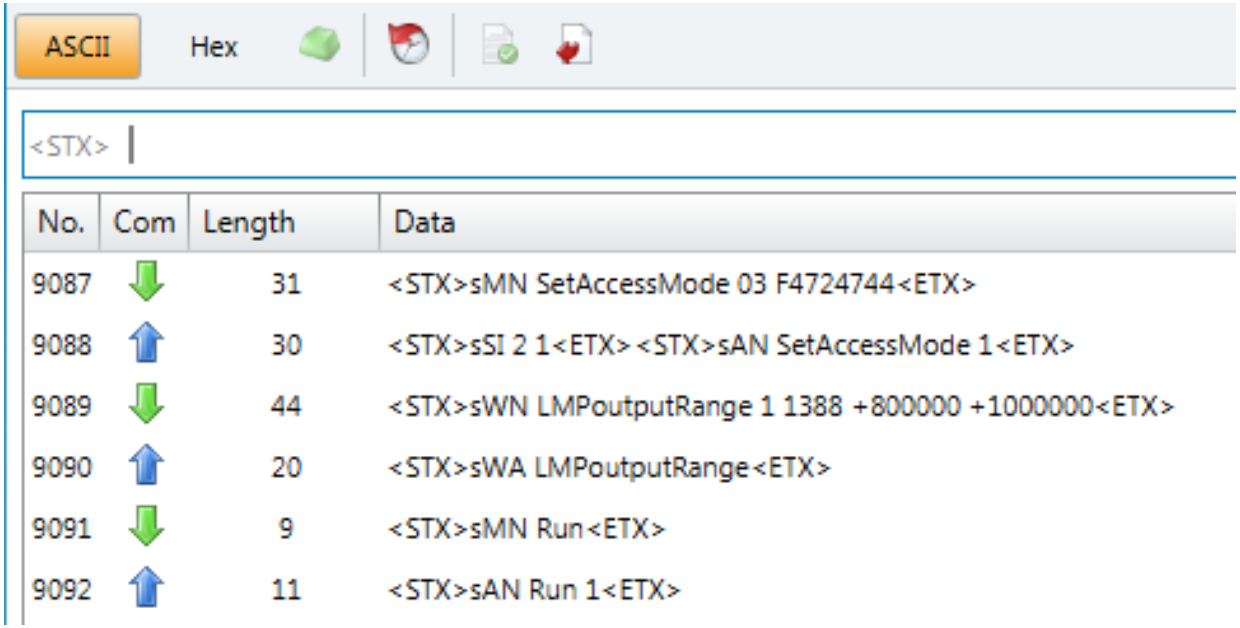


Example: Set the scan data reporting angle from 80 to 100 degrees.

sMN SetAccessMode 03 F4724744

sWN LMPoutputRange 1 1388 +800000 +1000000

sMN Run



LMS / TiM : Limit the scan angle

Example: Request a “Polling one Telegram” to determine if the scanner message has been reduced to only reporting from 80 to 100 degrees.

9093	↓	17	<STX>sRN LMDscandata<ETX>
9094	↑	550	<STX>sRA LMDscandata 0 1 E9ECF

```
0000   .sRA LMDscandata 0 1 E9ECF9 0 0
0032   836F 8AA6 2B0A6CBD 2B0BA0EB 0 0
0064   1F 0 0 9C4 21C 0 1 DIST1 3F80000
0096   0 00000000 C3500 683 79 D77 D80
0128   D7B D91 0 0 0 0 0 0 A51 A47 0 0
0160   0 0 0 0 0 0 0 0 3C4 3C1 0 0 0 0
0192   0 0 0 0 0 0 0 A7D A8D A66 A78 0
0224   A86 A7D A76 A74 A7C A82 A8B A96
0256   A94 A82 A94 0 0 A88 A8B AA7 AA2
0288   A9A AA5 AA5 AAE A9A AAE AB1 AA6
0320   AA6 AAD ABE AAD AA6 ABC ABD AB4
0352   AB6 AA9 AB3 AC7 ABC AB7 AB3 AAB
0384   AB3 AC3 AC4 AC3 AB8 AB5 AD1 ABF
0416   AB7 AD7 AC0 AC1 AC7 AC4 AD1 AC8
0448   ACA AB5 AC1 AD3 AB9 AB1 AAB AAB
0480   AAE AB2 AB3 AB4 AB2 AB0 A93 AB3
0512   AA6 A90 A9F A98 A8F 0 0 0 0 0 0
0544   0 0 0.
```

LMS / TiM : Limit the scan angle

Per reference below, the “Start angle” is the third block after the ASCII “**DIST1**.” It is per above - the HEX value of C3500. The D Word HEX entry when using the Windows calculator, converts to decimal is 800000. This is **80 degrees**!

DIST1 *3F800000 00000000 DBBA0 683 1F* 0 0 0 0 890B 8927 8945 8922 892F 8936 8975
0 0 0 0 0 8A4A 8A54 8A7D 0 0 8456 848E 84AF 8506 8560 85E9 8697 86DE 7E16 7DF5

DIST1	=	now coming the radial distance values of the first pulse
3F800000	=	Scale Factor (3F800000 = factor 1; 40000000 = factor 2)
00000000	=	Scale Factor Offset
DBBA0	=	Start angle (DBBA0h = 900.000d = 90°)
683	=	Angular resolution (683h = 1.667d = 0,1667°)
1F	=	Amount of Data (1Fh = 31d = 31 measurement values are following)
0 0 0 0 890B 892.....		= measurement values in HEX (example: 890Bh = 35.083 = 35083mm = 35,083m)

LMS / TiM : Limit the scan angle

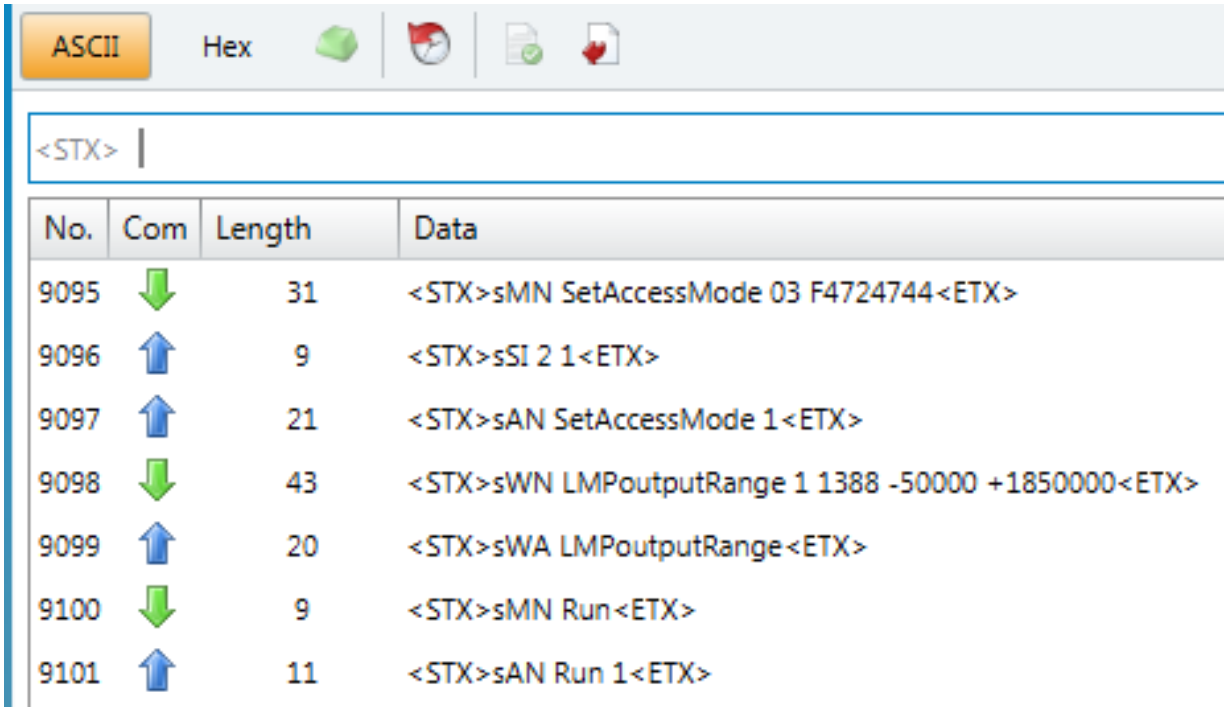
Example: Set the scan data reporting angle back to -5 to 185 degrees.

Enter and choose “Send.” one at a time, the three listed telegram commands into the Send telegram box below..

sMN SetAccessMode 03 F4724744

sWN LMPoutputRange 1 1388 -50000 +1850000

sMN Run



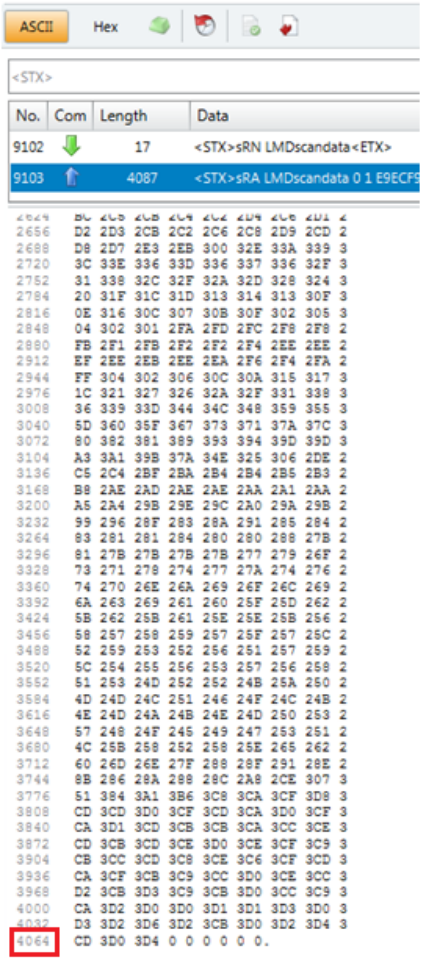
LMS / TiM : Limit the scan angle

Example: Request a “Polling one Telegram” to determine if the scanner message has been expanded to reporting the full scan angles from -5 to 185 degrees.

<STX>

No.	Com	Length	Data
9102	↓	17	<STX>sRN LMDscandata<ETX>
9103	↑	4087	<STX>sRA LMDscandata 0 1 E9ECF9 0 0 C

```
0000   .sRA LMDscandata 0 1 E9ECF9 0 0
0032   C70A D402 57D15DFA 57D293B5 0 0
0064   1F 0 0 9C4 21C 0 1 DIST1 3F80000
0096   0 00000000 FFFF3CB0 683 475 A0 9
0128   F A2 9F 9E A8 A0 A1 A3 AA 9E A7
0160   A8 AA A3 9F AA A4 9E AA A3 AA AB
0192    AC AA A8 A5 A4 A1 A5 A5 AD A3 A
0224   6 A6 A2 A7 9F A3 A5 A6 B0 A3 A3
0256   A8 AB AA A4 AC A8 A3 AA A1 AB A0
0288    A8 A4 A7 AD A9 AB A8 AD AD AD A
0320   A A6 AB A8 A8 B0 AF 9C2 9BD 9A8
0352   9A7 9A8 9AB 9AA 9B3 9A2 9AB 99F
0384   9A8 9A4 9A2 9A6 9A4 9AB 9AB 9B2
0416   9B3 9B3 9AB 9B4 9B5 9B9 9BF 9BC
0448   9C0 9C2 9C4 9C7 9D4 9CB 9D3 9CD
0480   1462 1477 147A A0B A05 A0E A12 A
0512   0A A08 A0E 14A1 14B9 14BA 14C5 1
0544   4C6 14C0 0 14D6 14F7 14D8 0 0 14
```



Note: Line number 4064, due to 190 degrees worth of data.

LMS / TiM : Limit the scan angle

Sensor Intelligence.

Per reference above, the “Start angle” is the third block after the ASCII “**DIST1**.” It is per above - the HEX value of FFFF3CB0. The D Word HEX entry when using the Windows calculator, converts to decimal is -50000. This is **minus 5 degrees**!

DIST1 *3F800000 00000000 DBBA0 683 1F* 0 0 0 0 890B 8927 8945 8922 892F 8936 8975
0 0 0 0 0 8A4A 8A54 8A7D 0 0 8456 848E 84AF 8506 8560 85E9 8697 86DE 7E16 7DF5

DIST1	=	now coming the radial distance values of the first pulse
3F800000	=	Scale Factor (3F800000 = factor 1; 40000000 = factor 2)
00000000	=	Scale Factor Offset
DBBA0	=	Start angle (DBBA0h = 900.000d = 90°)
683	=	Angular resolution (683h = 1.667d = 0,1667°)
1F	=	Amount of Data (1Fh = 31d = 31 measurement values are following)
0 0 0 0 890B 892.....	=	measurement values in HEX (example: 890Bh = 35.083 = 35083mm = 35,083m)

LMS / TiM : Creating Command Files

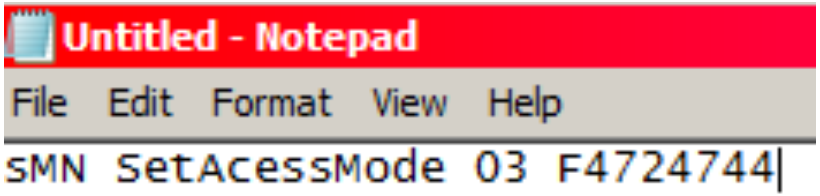
Example: Set the scan data reporting angle back to -5 to 185 degrees.

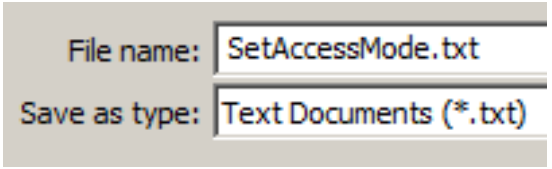
sMN SetAccessMode 03 F4724744

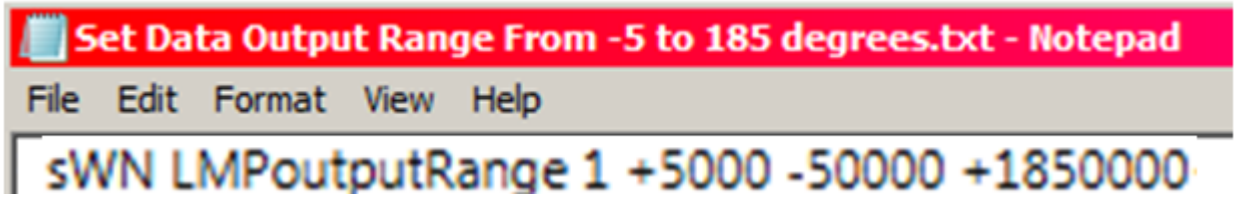
sWN LMPoutputRange 1 1388 -50000 +1850000

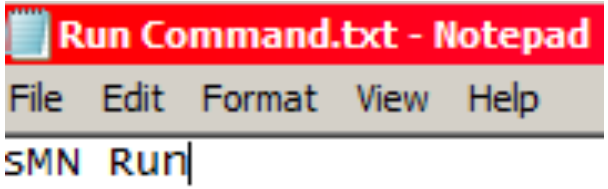
sMN Run

Open Notepad and enter the following three commands. Save it to Desktop \ Workflow



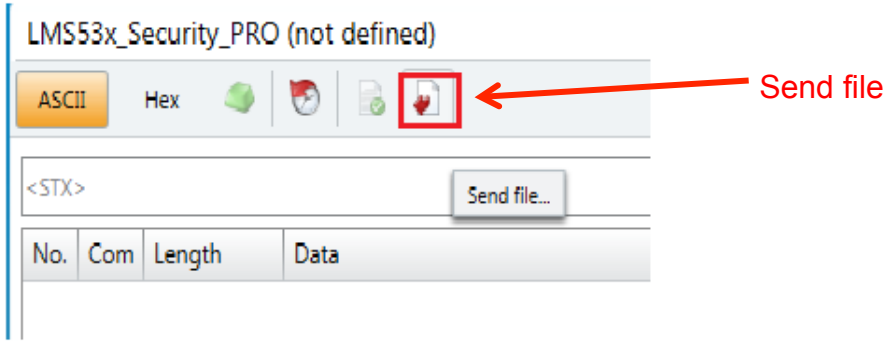






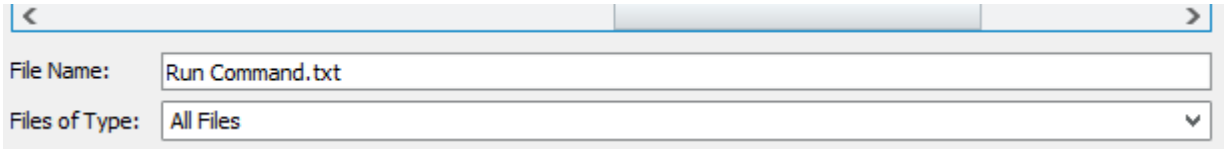
LMS / TiM : SOPAS Terminal using Notepad

Example: Using stored Notepad commands to issue SOPAS Terminal Commands.



Choose Desktop \ Workflow as the notepad commands folder.

Then choose the “Run Command,” to lock-in the Desktop \ Workflow as the go-to files for SOPAS commands..



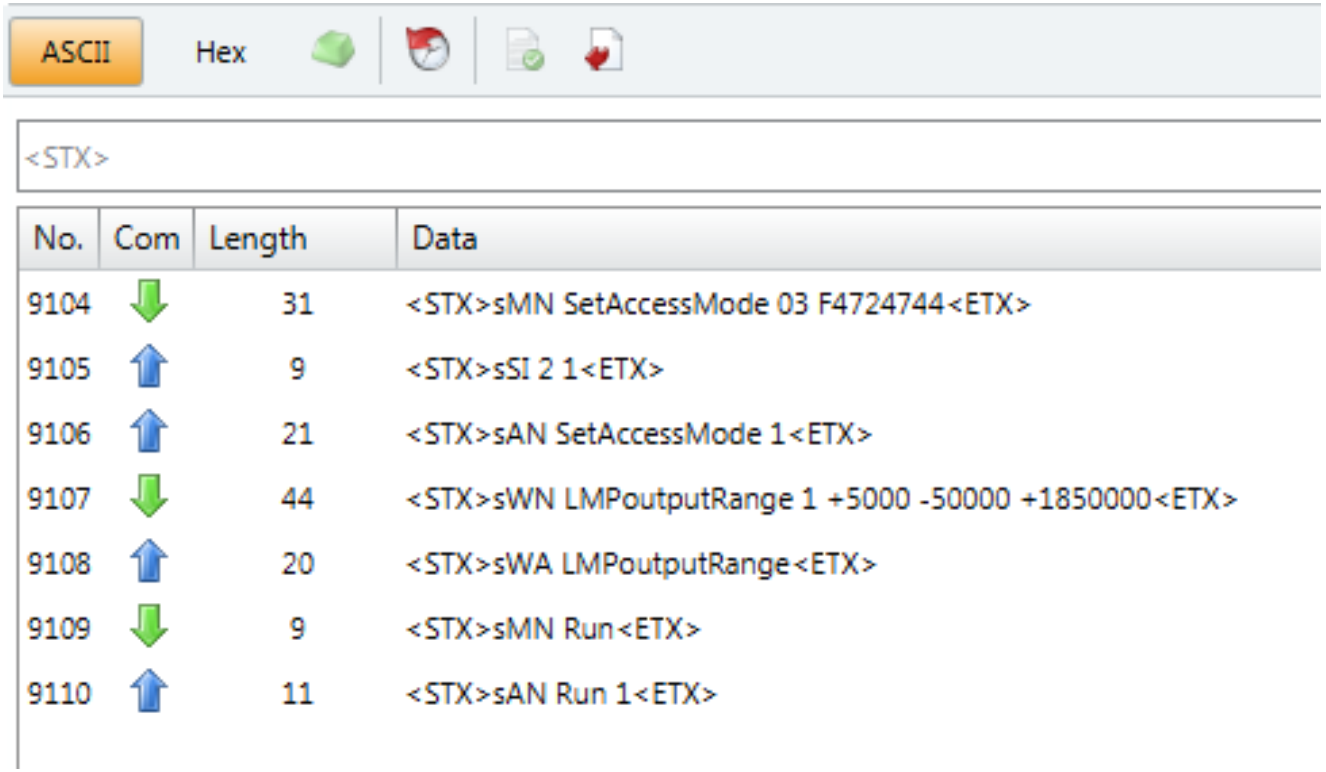
LMS / TiM : SOPAS Terminal using Notepad

Example: Using stored Notepad commands to issue SOPAS Terminal Commands.
After choosing “Send file” for each stored command, results appear per below.

sMN SetAccessMode 03 F4724744

sWN LMPoutputRange 1 +5000 -50000 +1850000

sMN Run



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: Thank you for your attention.