Information on how to receive XT Messages from SmartSensor Advance

The capability to push XT messages is not currently built into the released version of the SmartSensor Manager Advance software. However, I have created and intermediary build called "SSM Advance v2.0.1.Engineering.exe" with the embedded software for this functionality.

Since this is not a released build is has not yet been packaged into our installer program. For it to work correctly you will need to copy all 6 of the files shown below into the same directory. I would then recommend creating a shortcut to the program, and launch the program using the short cut. (If you use the release software, then you will need to poll for the XT response, by sending an XT request. The benefit of this intermediary software is that it will push the XT responses at a regular interval and cut down on overhead/latency.)

Name	Size	Type	Date Modified
SSM Advance v2.0.1.Engineering.exe	672 KB	Application	5/16/2008 4:13 PM
SSM200Communication.dll	564 KB	Application Extension	5/16/2008 4:13 PM
SS200Jobs.dll	1,368 KB	Application Extension	5/16/2008 4:13 PM
WxCommunication.dll	60 KB	Application Extension	5/16/2008 4:13 PM
SS200Protocol.dll	256 KB	Application Extension	5/16/2008 4:13 PM
SSMCEBaseClasses.dll	628 KB	Application Extension	5/16/2008 4:13 PM

When you connect to the sensor it will recommend upgrading, which when you do will put the "05.16.08" embedded software on the sensor. If you successfully upgrade the software you will see the following screen.
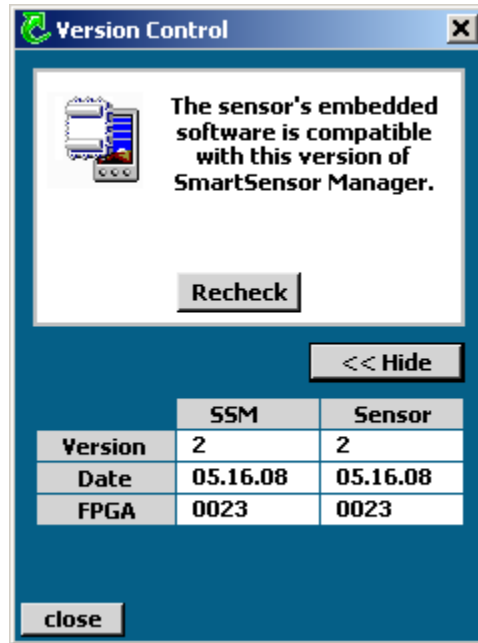
To setup push, set the minimum output duration and the output frequency to what ever push rate you desire. For example, if you want to have the sensor push and XT message 10 times a second then enter 0.10 seconds for both of these values.
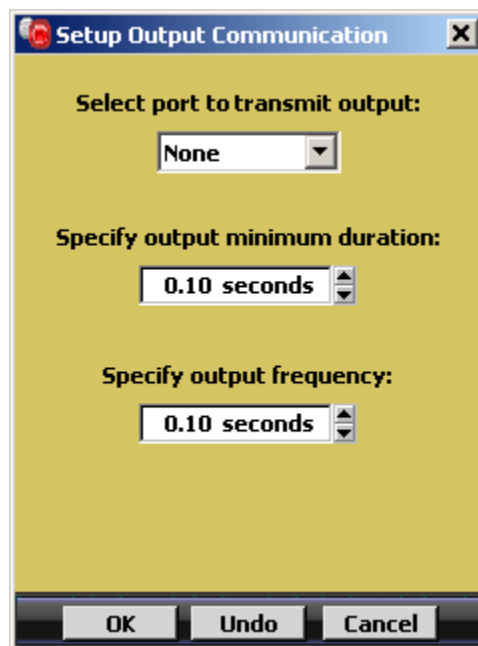
Then close the SSMA connection, and go to the tools menu. Use the serial terminal in the tools menu (or you can use any serial terminal program that you prefer) to send the following series of commands as shown in the following screen shot:

- "X5\r"
- "SI0XT… see table below for complete message (depends upon serial port)
- "X2\r"

```
->X5
<-X5Success~

->SIOXTSYN01D6~
<-SISuccess~

->X2
<-X2Success~

<-XTKXXXTXX
```
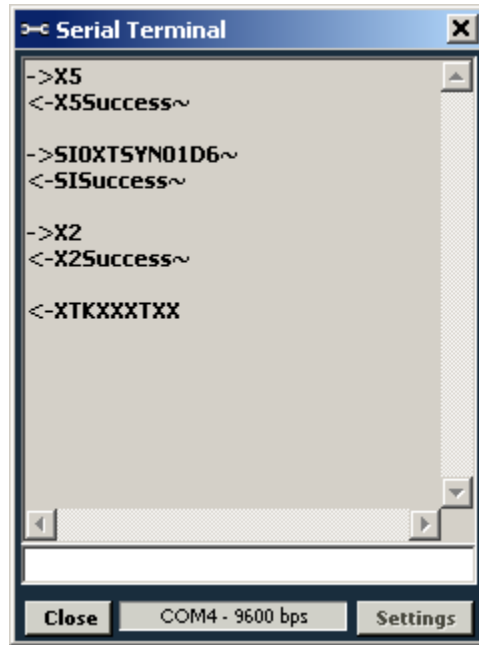
Push XT RS485 (ASCII Symbol)	S	I	0	X	T	S	Y	N	0	1	D	6	~	/r	/r
(ASCII Code - HEX)	53	49	30	58	54	53	59	4E	30	31	44	36	7E	0D	0D
Push XT RS232 (ASCII Symbol)	S	I	0	X	T	F	Y	N	0	1	C	9	~	/r	/r
(ASCII Code - HEX)	53	49	30	58	54	46	59	4E	30	31	43	39	7E	0D	0D

If you are successful and you are connected over the sensor's RS-485 port then you will see a sequence as shown in the serial terminal screen shot above. (If you would like to listen to the data on the sensor's RS-232 port then send the second "SIOXT…" message shown in the above table.) You should see some "XT" messages displayed after you see the "X2Success" response. However, some of the data is binary and will not display if the serial terminal program you are using displays only ASCII.

To parse the XT data messages, you can use the "advance_data_protocol_v1.3.pdf" protocol document including tin the package of materials. The information starts on page 5 of this document under the heading "Getting Track File Data".

I have provided some sample code for receiving and displaying the XT data messages with a timestamp from the computer. The sample code file is called "XT_MsgListener.m". This is a MATLAB script, and I believe MATLAB will run on either Windows or Linux.