Advantech AE Technical Share Document

Date	2015/07/08	SR#	1-2097725911
Category	■FAQ □SOP	Related OS	N/A
Abstract	ADAM-5K_6K_62XX, The data format of streaming function		
Keyword	ADAM-5000/TCP, ADAM-60XX, ADAM-62XX, Data streaming, Example Program		
Related Product	ADAM-5000/TCP , ADAM-60XX and ADAM-62XX		

■ **Problem Description**:

This documentation explains the function of data streaming in ADAM-5000/TCP, ADAM-60XX and ADAM-62XX series.
The data format will also be addressed to let the user learn how to develop their apps.

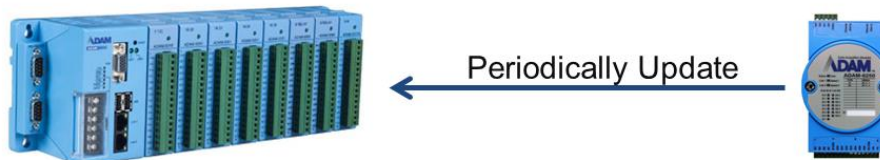■ **Brief Solution - Step by Step**:

Unlike the Modbus/TCP protocol communication requires an active polling for the response, the data stream function allows the remote I/O like ADAM-5000/TCP, ADAM-60XX and ADAM-62XX automatically update the I/O status of the host with particular IP periodically.
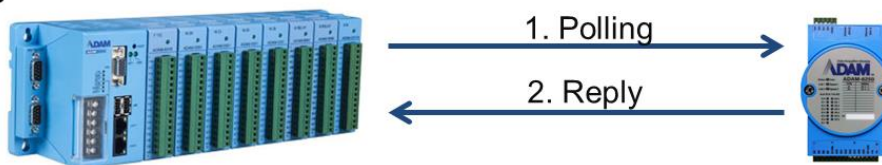
User can set the IP of the host and the sending interval in the "Stream" tab of the utility. Please note that you can't enable both data streaming and GCL function at the same time. When you enable GCL function, Data Stream function will automatically be disabled until you disable GLC function.

The user can refer to the sample code of our library to understand how to get the I/O status from data streaming packet.
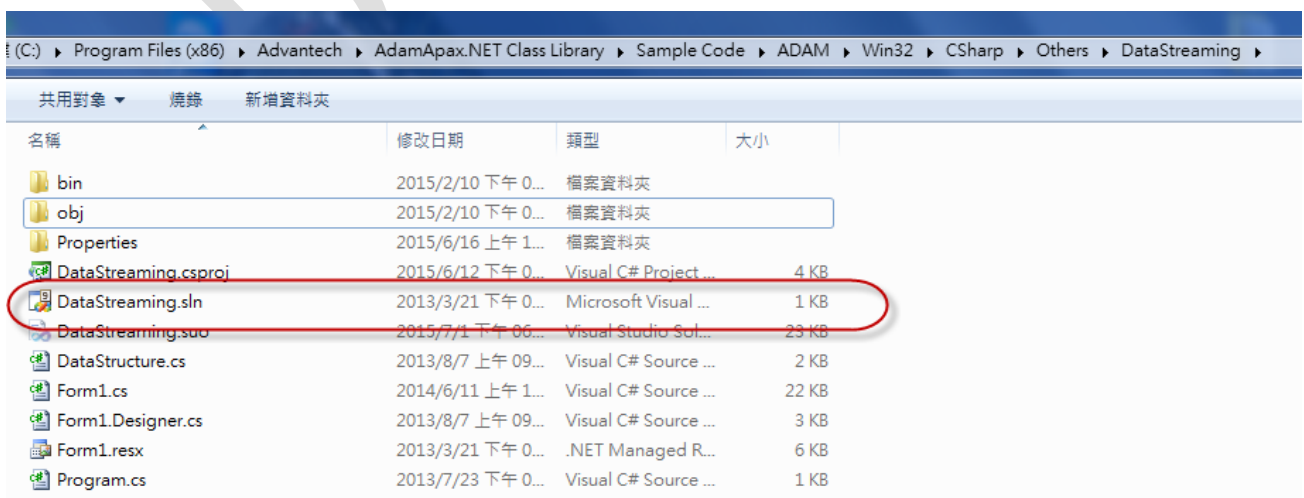
If the customer want more detail information regarding the data structure of the streming data, please refer to the following table.

For ADAM-6K and ADAM-62XX series:

- DIO data format,

Type	Bytes	Order	Value
Header	4	0-3	'MADM'
Function	1	4	0x01
Data length	1	5	160
DI status	2	6-7	DI_STATUS(Bit 0-7), (Bit 8-15)
DO flag	1	8	DO_FLAG
Reserved	13	9-21	0x00
Counter number of DI[0]	4	22-25	(Bit 8-15), (Bit 0-7), (Bit 24-31), (Bit 16-23)
Counter number of DI[1]	4	26-29	(Bit 8-15), (Bit 0-7), (Bit 24-31), (Bit 16-23)
:	:	:	:
Counter number of DI[N]	4		(Bit 8-15), (Bit 0-7), (Bit 24-31), (Bit 16-23)
Reserved			0x00

- AIO data format,

Type	Bytes	Order	Value
Header	4	0-3	'MADM'
Function	1	4	0x02
Data length	1	5	160
DI status	2	6-7	0x00, 0x00
DO flag	1	8	DO_FLAG
Reserved	13	9-21	0x00, ...
AI[0] Value	2	22-23	(Bit 8-15), (Bit 0-7)
AI[1] ~ [7] Value & AI[8]←average	16	24-39	(Bit 8-15), (Bit 0-7) ...
AI[0] Max. Value	2	40-41	(Bit 8-15), (Bit 0-7)
AI[1] ~ [7] Max. Value & AI[8]←average	16	42-57	(Bit 8-15), (Bit 0-7) ...
AI[0] Min. Value	2	58-59	(Bit 8-15), (Bit 0-7)
AI[1] ~ [7] Min. Value & AI[8]←average	16	60-75	(Bit 8-15), (Bit 0-7) ...
Reserved	74	76–149	0x00, ...
AI High Alarm Status	2	150-151	(Bit 8-15), (Bit 0-7)
Reserved	6	152–157	0x00, ...
AI Low Alarm Status	2	158-159	(Bit 8-15), (Bit 0-7)

For ADAM-5000/TCP:

Type	Byte	Order	Value
Header	4	0~3	'MADA'
Function	1	4	0x01
Modbus Data Length(0x & 4x)	1	5	144(0x90) : (Modbus_0x ~ Modbus_4x data)
Modbus_0x data	16	6~21	Slot0(6,7) , Slot1(8,9) , Slot2(10,11), Slot3(12,13) Slot4(14,15) , Slot5(16,17) , Slot6(18,19) , Slot7(20,21)

Modbus_4X data	128	22~149	Slot0 : Ch0(22,23), Ch1(24,25), Ch2(26,27), Ch3(28,29)
			  Ch4(30,31), Ch5(32,33), Ch6(34,35), Ch7(36,37)
			Slot1 : Ch0(38,39), Ch1(40,41), Ch2(42,43), Ch3(44,45)
			  Ch4(46,47), Ch5(48,49), Ch6(50,51), Ch7(52,53)
			Slot2 : Ch0(54,55), Ch1(56,57), Ch2(58,59), Ch3(60,61)
			  Ch4(62,63), Ch5(64,65), Ch6(66,67), Ch7(68,69)
			Slot3 : Ch0(70,71), Ch1(72,73), Ch2(74,75), Ch3(76,77)
			  Ch4(78,79), Ch5(80,81), Ch6(82,83), Ch7(84,85)
			Slot4 : Ch0(86,87), Ch1(88,89), Ch2(90,91), Ch3(92,93)
			  Ch4(94,95), Ch5(96,97), Ch6(98,99), Ch7(100,101)
			Slot5 : Ch0(102,103), Ch1(104,105), Ch2(106,107), Ch3(108,109)
			  Ch4(110,111), Ch5(112,113), Ch6(114,115), Ch7(116,117)
			Slot6 : Ch0(118,119), Ch1(120,121), Ch2(122,123), Ch3(124,125)
			  Ch4(126,127), Ch5(128,129), Ch6(130,131), Ch7(132,133)
			Slot7 : Ch0(134,135), Ch1(136,137), Ch2(138,139), Ch3(140,141)
			  Ch4(142,143), Ch5(144,145), Ch6(146,147), Ch7(148,149)

Alarm status	16	150~165	Hi Alarm: Slot0(150) , Slot1(151), Slot2(152), Slot3(153), Slot4(154), Slot5(155), Slot6(156), Slot7(157) Lo Alarm: Slot0(158) , Slot1(159), Slot2(160), Slot3(161), Slot4(162), Slot5(163), Slot6(164), Slot7(165)