

USING FUNCTIONS FOR THE MODEM CALL-OUT MODE

The modem has programming options to allow it to call out based on some condition. A normal application would be to call out if the stage value raised higher than some safe level, OR may be based on two conditions such as stage higher than a set level or rain greater than some set value.

For example:

Stage Greater Than 10.5
Stage Greater Than 10.5 OR Rain Greater Than 0.04

To program these options into the modem, the user must connect the modem to their PC and use a special menu or commands on the modem to enter these options.

Now the problem is when the modem is plugged back into the data logger in the normal run time setup, the user must go to the site to change these conditional statements. It is desirable to be able to change these conditions remotely.

The following sections show a basic example of how the modem would be setup initially to call out based on the following conditions:

ALARM 1
Stage>10.5 AND rain>0.04

ALARM 2
Stage>15.0

Normal H-219 and XL Setup

From the worksheets in the H-219 manual for keeping track of the data coming into the modem and setting up the call out alarms:

H-219 Voice Modem Worksheet #2		
Site ID Message:	This is the test application site.	
Data Value Box Number	Data Sources To Be Sent To The H-219	Voice Messages To Be Recorded
0	Stage	The stage in feet is...
1	Rain (counts)	The rain in inches is...
2	Battery	The battery voltage is...
3		
4		

H-219 Voice Modem Worksheet #2				
Alarm #1	Source: (Value Box #)	Alarm Type	Set Point	Alarm Message
Section A	Box 0 (stage)	3 (Greater Than)	10.5	Alarm 1 is active, both stage and rain are high.
Section B	Box 1 (rain)	3 (Greater Than)	0.04	
Section C		1 (Don't Care)		
Alarm #2	Source: (value Box #)	Alarm Type	Set Point	Alarm Message
Section A	Box 0 (stage)	3 (Greater Than)	15.0	Alarm 2 is active, the stage is very high.
Section B		1 (Don't Care)		
Section C		1 (Don't Care)		

on the H-219, the global alarm option must be enabled.

On the XL, the voice modem must be enabled and be set so the stage is sent to data box 0, the counts to data box 1, and the battery voltage to data box 2.

Now as the XL scans and sends data to the modem, the H-219 will evaluate the data and if the condition is true, it will make the desired calls. These conditions cannot be changed remotely, as there is no way for the user to access the options in the H-219 while it is connected in the data mode.

New H-219 and XL Setup

From the worksheets in the H-219 manual for keeping track of the data coming into the modem and setting up the call out alarms:

H-219 Voice Modem Worksheet #2		
Site ID Message:	This is the test application site.	
Data Value Box Number	Data Sources To Be Sent To The H-219	Voice Messages To Be Recorded
0	Stage	The stage in feet is...
1	Rain (counts)	The rain in inches is...
2	Battery	The battery volatage is...
3	Fnt01	Alarm 1 status is...
4	Fnt05	Alarm 2 status is...
5		

H-219 Voice Modem Worksheet #2				
Alarm #1	Source: (Value Box #)	Alarm Type	Set Point	Alarm Message
Section A	Box 3 (Fnt01)	3 (Greater Than)	0.5	Alarm 1 is active, both stage and rain are high.
Section B		1 (Don't Care)		
Section C		1 (Don't Care)		
Alarm #2	Source: (value Box #)	Alarm Type	Set Point	Alarm Message
Section A	Box 4 (Fnt05)	3 (Greater Than)	0.5	Alarm 2 is active, the stage is very high.
Section B		1 (Don't Care)		
Section C		1 (Don't Care)		

on the H-219, the global alarm option must be enabled. On the XL, the voice modem must be enabled and be set so the stage is sent to data box 0, the counts to data box 1, the battery voltage to data box 2, fnt01 for data box 3 and fnt05 for data box 4.

The functions on the XL will be as follows:
 fnt01=if((stage>10.5) & (counts>0.04),1,0)

fnt02=if(stage>15.0,1,0)

Now as the XL scans and sends data to the modem, the H-219 will evaluate the data and if the condition is true, it will make the desired calls. In this case, the conditions are evaluated on the XL and only a 0 or a 1 is sent to the modem. A 1 if the condition is true, and a 0 if not. The modem still evaluates the 1 and 0 but is a simple test. Now if the XL is accessed remotely, the functions can easily be changed or modified as needed. This way a trigger point can easily be moved up or down. Also each function is able to be 32 characters long. If additional space is needed it will use the space from the next function(s) so one function can use the space from four of the functions. This is why functions 1 and 5 were used above. If function 1 was changed and required more space it could overflow into function 2, 3, and 4. Function 5 could overflow into functions 6, 7, and 8 if needed.