WMR918 PCLINK protocol (Version 0.2 with 600mb barometer supported)

1. Serial data is sent in 9600 bps from Main unit to PC through RS232
2. For the PC to receive the data from WMR918, the ***'Request to send'*** pin of the PC must be setted to request data, otherwise no data will be sent.
3. When WMR918 is going to send the data, it will send a header 'FFFF' first, then follow by the code of the type of data
4. At the end of data, WMR918 will send the checksum of the data
5. WMR918 will send data to the PC when new data is received.
6. WMR918 will send the 'Minute' data to the PC every minute to ensure connection is OK.
7. WMR918 will send the clock data every 1 hour or when new RF clock time is being received
8. WMR918 will not send the data continously to the PC, it will send the data byte by byte. (ie. If there is other task for WM918 to complete
 - such as to receive sensor data, WMR918 will go to receive the data first, then resume the sending of PC data).

Data		Data Type								
		Wind	Rain	TH	Mushroom	T	BTH	Minute	Clock	**EXTBTH**
Header 1	Bit 0	1	1	1	1	1	1	1	1	**1**
	Bit 1	1	1	1	1	1	1	1	1	**1**
	Bit 2	1	1	1	1	1	1	1	1	**1**
	Bit 3	1	1	1	1	1	1	1	1	**1**
	Bit 4	1	1	1	1	1	1	1	1	**1**
	Bit 5	1	1	1	1	1	1	1	1	**1**
	Bit 6	1	1	1	1	1	1	1	1	**1**
	Bit 7	1	1	1	1	1	1	1	1	**1**
Header 2	Bit 0	1	1	1	1	1	1	1	1	**1**
	Bit 1	1	1	1	1	1	1	1	1	**1**
	Bit 2	1	1	1	1	1	1	1	1	**1**
	Bit 3	1	1	1	1	1	1	1	1	**1**
	Bit 4	1	1	1	1	1	1	1	1	**1**
	Bit 5	1	1	1	1	1	1	1	1	**1**
	Bit 6	1	1	1	1	1	1	1	1	**1**
	Bit 7	1	1	1	1	1	1	1	1	**1**
3rd Byte (DEVICE) TYPE	Bit 0	00000000 wind	00000001 rain	00000010 thermo hygro	00000011 mushroom	00000100 thermo only	00000101 thermo hygro baro	00001110 Minute	00001111 Clock	**00000110 thermo hygro baro**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4									
	Bit 5									
	Bit 6									
	Bit 7									
4th Byte	Bit 0	--	--	Channel number	--	Channel number	--	Date 1 digit minute	Date 1 digit minute	**--**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	Gust over	Rate over	Dew under	Dew under	--	Dew under	Date	***Date***	**Dew under**
	Bit 5	Avgerage over	Total over	--	--		--	10 digit	***10 digit***	**--**
	Bit 6	Low batt.	Low batt.	Low batt.	Low batt.	Low batt.	Low batt.	minute	***minute***	**Low batt.**
	Bit 7	--	Yesterday over	--	--	--	--	Batt. Low	***Batt. Low***	**--**
5th Byte	Bit 0	Wind direction 1° digit	Current Rain Rate 1 digit in mm/hr	Temp 0.1°C digit	Temp 0.1°C digit	Temp 0.1°C digit	Temp 0.1°C digit	Check-sum	Date 1 digit hour	**Temp 0.1°C digit**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	Wind direction 10° digit	Current Rain Rate 10 digit in mm/hr	Temp 1°C digit	Temp 1°C digit	Temp 1°C digit	Temp 1°C digit		Date 10 digit hour	**Temp 1°C digit**
	Bit 5									
	Bit 6									
	Bit 7									
6th Byte	Bit 0	Wind direction 100° digit	Current Rain Rate 100 digit in mm/hr	Temp 10°C digit	Temp 10°C digit	Temp 10°C digit	Temp 10°C digit		Date 1 digit Day	**Temp 10°C digit**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	Gust Wind Speed 0.1m/sec	Total Rainfall 0.1 digit in mm	Temp 100°C Over/Under Sign	Temp 100°C Over/Under Sign	Temp 100°C Over/Under Sign	Temp 100°C Over/Under Sign		Date 10 digit Day	**Temp 100°C Over/Under Sign**
	Bit 5									
	Bit 6									
	Bit 7									
7th Byte	Bit 0	Gust Wind Speed 1 m/sec	Total Rainfall 1 digit in mm	Hum 1% digit	Hum 1% digit	Check-sum	Hum 1% digit		Date 1 digit Month	**Hum 1% digit**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	Gust Wind Speed 10 m/sec	Total Rainfall 10 digit in mm	Hum 10% digit	Hum 10% digit		Hum 10% digit		Date 10 digit Month	**Hum 10% digit**
	Bit 5									
	Bit 6									
	Bit 7									
8th Byte	Bit 0	Average Wind Speed 0.1 m/sec	Total Rainfall 100 digit in mm	Dew Temp 1°C digit	Dew Temp 1°C digit		Dew Temp 1°C digit		Date 1 digit Year	**Dew Temp 1°C digit**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	Average Wind Speed 1 m/sec	Total Rainfall 1000 digit in mm	Dew Temp 10°C digit	Dew Temp 10°C digit		Dew Temp 10°C digit		Date 10 digit Year	**Dew Temp 10°C digit**
	Bit 5									
	Bit 6									
	Bit 7									
9th Byte	Bit 0	Average Wind Speed 10 m/sec	Yesterday Rainfall 1 digit in mm	Check-sum	Check-sum		ADC BARO Reading		Check-sum	**ADC0 BARO Reading**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		Yesterday Rainfall 10 digit in mm							
	Bit 5	Chill no data								
	Bit 6	Chill over								
	Bit 7	Sign								
10th Byte	Bit 0	Wind Chill 1°C digit	Yesterday Rainfall 100 digit in mm				Weather Status			**ADCbit9**
	Bit 1									**---**
	Bit 2									
	Bit 3									
	Bit 4	Wind Chill 10°C digit	Yesterday Rainfall 1000 digit in mm				**---**			**Weather Status**
	Bit 5									
	Bit 6									
	Bit 7									
11th Byte	Bit 0	Check-sum	Total Start Date 1 digit minute				**Sea level offset 0.1 digit mb**			**---**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		Total Start Date 10 digit minute				**Sea level offset 1 digit mb**			**Sea level offset 0.1 digit mb**
	Bit 5									
	Bit 6									
	Bit 7									
12th Byte	Bit 0		Total Start Date 1 digit hour				**Sea level offset 10 digit mb**			**Sea level offset 1 digit mb**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		Total Start Date 10 digit hour				**Sea level offset 100 digit mb**			**Sea level offset 10 digit mb**
	Bit 5									
	Bit 6									
	Bit 7									
13th Byte	Bit 0		Total Start Date 1 digit Day				Check-sum			**Sea level offset 100 digit mb**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		Total Start Date 10 digit Day							**Sea level offset 1000 digit mb**
	Bit 5									
	Bit 6									
	Bit 7									
14th Byte	Bit 0		Total Start Date 1 digit Month							**Check-sum**
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		Total Start Date 10 digit Month							
	Bit 5									
	Bit 6									
	Bit 7									
15th Byte	Bit 0		Total Start Date 1 digit Year							
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		Total Start Date 10 digit Year							
	Bit 5									
	Bit 6									
	Bit 7									
16th Byte	Bit 0		Check-sum							
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4									
	Bit 5									
	Bit 6									
	Bit 7									

Weather Status : 1100-sunny
0110-half cloudy
0010-cloudy
0011-rainny

Channel : 0001- Channel 1
0010- Channel 2
0100- Channel 3

over: 1=over range
0=normal

under: 1=under range
0=normal

over/under 1=over /under
0=normal
* to identify over/under
check also the sign of data

Low batt. 1=low battery

Batt.Low 1=low battery of main unit

Sign: **0=positive**
1-negative

ADC baro reading :
range 0 to FF (hex)

ADC0 & ADCbit9
range : 0 to 1FF (Hex)
where ADC0 is the LSB
ADCbit9 is the MSbit

* Note

1. For Device 5 (BTH), the baromotic pressure reading = ADC baro reading (converted from HEX to BCD) + 795mb
For Device 6 (EXTBTH), the barometric pressure reading = ADC reading (converted from 9 bit HEX to BCD) + 600mb

2. For Device 5 (BTH), the Sea level offset of 1000mb digit is not send out. If the Sea level offset pressure is less than 400.0mb, then it means the Sea level offset is (1000mb + offset). Howver, if the offset is larger or equal to 400.0mb, then (0mb + Offset)
The above will only applied to device 5. There is NO NEED TO ADJUST FOR DEVICE 6 (EXTBTH)

3. Sea level pressure reading = ADC baro reading (converted from HEX to BCD) + Sea level offset
4. Total start date = The date that total rainfall started to count.
5. The total rainfall that send is added by 0.5mm, please minus 0.5mm before display.
6. Check sum = the lower byte of the sum of the data send (include header)