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	0000000 wind	00000001 rain	00000010 thermo hygro	00000011 mushroom	00000100 thermo only	00000101 thermo hygrobaro	00001110 Minute	00001111 Clock	00000110 thermo hygrobaro
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4									
	Bit 5									
	Bit 6									
	Bit 7									
	Bit 0			Channel number		Channel number		Date1 digit minute	Date1 digit minute	
	Bit 1									

4th Byte	Bit 1	--	--		--		--			--
	Bit 2									
	Bit 3									
	Bit 4	Gust over	Rate over	Dew under	Dew under	--	Dew under	Date10 digit minute	Date10 digit minute	Dew under
	Bit 5	Avgerage over	Total over	--	--		--			--
	Bit 6	Low batt.	Low batt.	Low batt.	Low batt.	Low batt.	Low batt.			Low batt.
	Bit 7	--	Yesterday over	--	--	--	--	Batt. Low	Batt. Low	--
5thByte	Bit 0	Winddirection1° digit	CurrentRain Rate1 digit in mm/hr	Temp0.1°Cdigit	Temp0.1°Cdigit	Temp0.1°Cdigit	Temp0.1°Cdigit	Check-sum	Date1 digithour	Temp0.1°Cdigit
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	Winddirection10° digit	CurrentRain Rate10 digit in mm/hr	Temp1°Cdigit	Temp1°Cdigit	Temp1°Cdigit	Temp1°Cdigit		Date10 digithour	Temp1°Cdigit
	Bit 5									
	Bit 6									
	Bit 7									
6thByte	Bit 0	Winddirection100° digit	CurrentRain Rate100 digitin mm/hr	Temp10°Cdigit	Temp10°Cdigit	Temp10°Cdigit	Temp10°Cdigit		Date1 digitDay	Temp10°Cdigit
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	GustWindSpeed0.1m/sec	TotalRainfall0.1 digitin mm	Temp100°C	Temp100°C	Temp100°C	Temp100°C		Date10 digitDay	Temp100°C
	Bit 5									
	Bit 6			Over/Under	Over/Under	Over/Under	Over/Under			Over/Under
	Bit 7			Sign	Sign	Sign	Sign			Sign
7thByte	Bit 0	GustWindSpeed1 m/sec	TotalRainfall1 digitin mm	Hum1% digit	Hum1% digit	Check-sum	Hum1% digit		Date1 digitMonth	Hum1% digit
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	GustWindSpeed10 m/sec	TotalRainfall10 digitin mm	Hum10% digit	Hum10% digit		Hum10% digit		Date10 digitMonth	Hum10% digit
	Bit 5									
	Bit 6									
	Bit 7									
8thByte	Bit 0	AverageWindSpeed0.1 m/sec	TotalRainfall100 digitin mm	DewTemp1°Cdigit	DewTemp1°Cdigit		DewTemp1°Cdigit		Date1 digitYear	DewTemp1°Cdigit
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4	AverageWindSpeed1 m/sec	TotalRainfall1000 digitin mm	DewTemp10°Cdigit	DewTemp10°Cdigit		DewTemp10°Cdigit		Date10 digitYear	DewTemp10°Cdigit
	Bit 5									
	Bit 6									
	Bit 7									
	Bit 0									

9thByte	Bit 1	AverageWindSpeed10 m/sec	YesterdayRainfall1 digitin mm	Check-sum	Check-sum		ADCBARO Reading		Check-sum	ADC0BARO Reading
	Bit 2									
	Bit 3									
	Bit 4	--	YesterdayRainfall10 digitin mm							
	Bit 5	Chill no data								
	Bit 6	Chill over								
	Bit 7	Sign								
10thByte	Bit 0	WindChill1°Cdigit	YesterdayRainfall100 digitin mm				WeatherStatus			ADCbit9
	Bit 1									--
	Bit 2									
	Bit 3									
	Bit 4	WindChill10°Cdigit	YesterdayRainfall1000 digitin mm				--			WeatherStatus
	Bit 5									
	Bit 6									
	Bit 7									
11thByte	Bit 0	Check-sum	TotalStart Date1 digitminute				Sea level offset0.1 digitmb			--
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		TotalStart Date10 digitminute				Sea level offset1 digitmb			Sea level offset0.1 digitmb
	Bit 5									
	Bit 6									
	Bit 7									
12thByte	Bit 0		TotalStart Date1 digithour				Sea level offset10 digitmb			Sea level offset1 digitmb
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		TotalStart Date10 digithour				Sea level offset100 digitmb			Sea level offset10 digitmb
	Bit 5									
	Bit 6									
	Bit 7									
13thByte	Bit 0		TotalStart Date1 digitDay				Check-sum			Sea level offset100 digitmb
	Bit 1									
	Bit 2									
	Bit 3									
	Bit 4		TotalStart Date10 digitDay							Sea level offset1000 digitmb
	Bit 5									
	Bit 6									
	Bit 7									

14thByte	Bit 0 Bit 1 Bit 2 Bit 3 Bit 4 Bit 5 Bit 6 Bit 7		TotalStart Date1 digitMonth TotalStart Date10 digitMonth		Check-sum
15thByte	Bit 0 Bit 1 Bit 2 Bit 3 Bit 4 Bit 5 Bit 6 Bit 7		TotalStart Date1 digitYear TotalStart Date10 digitYear		
16thByte	Bit 0 Bit 1 Bit 2 Bit 3 Bit 4 Bit 5 Bit 6 Bit 7		Check-sum		

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 barometic 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)