

121GW Processor to BLE112 UART Packet Information

The settings required to decode the UART stream are:

<u>UART Serial Details</u>	
Baud Rate	19200
Qty Bits	8
Parity	None
Qty Stop Bits	1
Order	LSB First

Note: The BLE112 appears to start the communication with the processor using a faster Baud Rate which I have not yet decoded, the processor responds at the speed before reducing to the settings above.

Each data packet from the processor to the BLE112 is 19 Bytes long and is formatted as in Table 1 below.

After the initial turn on data to the STM32 processor the BLE112 never reply's to any of the packets that it receives.

Table 1:

121GW UART Packet Definition				
Byte No	Bits	Description		Notes
1	7 - 0	Start Command		Value Always = 0xF2
2		Date	Year	Supposed to be the Year but never changes no matter what year is set on the meter
3	7 - 4		Month	Supposed to be the Month but never changes no matter what year is set on the meter
	3 - 0	Meter ID	Digit 4	If Meter ID = "12345" then this will equal 0x1
4	7 - 4		Digit 3	If Meter ID = "12345" then this will equal 0x2
	3 - 0		Digit 2	If Meter ID = "12345" then this will equal 0x3
5	7 - 4		Digit 1	If Meter ID = "12345" then this will equal 0x4
	3 - 0		Digit 0	If Meter ID = "12345" then this will equal 0x5
	7 - 5	Unused		
6	4 - 0	Main Measurement Mode		0x00 = Low Z 0x01 = DC Voltage 0x02 = AC Voltage / DC+AC Voltage 0x03 = DC Milli Volts 0x04 = AC Milli Volts 0x05 = Temperature 0x06 = Frequency 0x07 = Period 0x08 = Duty Cycle 0x09 = Resistance 0x0A = Continuity 0x0B = Diode 0x0C = Capacitance 0x0D = AC Micro Watt 0x0E = Unused 0x0F = AC Milli Watt 0x10 = AC Micro Amps 0x11 = DC Micro Amps 0x12 = Unused 0x13 = Unused 0x14 = AC Milli Amp 0x15 = DC Milli Amp 0x16 = DC Micro Watt 0x17 = Unused 0x18 = DC Milli Watt 0x19 - 0x1F = Unused
7	7	Main Measurement Range	OFL	0 = Not Overrange / 1 = Over Range
	6		+/-	0 = Positive Value / 1 = Negative Value
	5		°C	0 = Not Celsius Temperature / 1 = Temperature in °C
	4		°F	0 = Not Farenheight Temperature / 1 = Temperature in °F
	3 - 0		Range	See Table 2
8				Main Value H
9				Main Value L
10				Sub

11				Sub
12				Sub
13				Sub
14				Bar
15				Bar
16				Icon
17				icon
18				Icon
19				Checksum

Note: Items in Grey have either not yet been decoded or are not used.

Note: Items in Yellow are possible firmware bugs.

Table 2:

Main LCD - Range Value Per Mode						
	0x0	0x1	0x2	0x3	0x4	0x5
0x00 = Low Z	600V					
0x01 = DC Voltage	5V	50V	500V	600V		
0x02 = AC Voltage / DC+AC Voltage	5V	50V	500V	600V		
0x03 = DC Milli Volts	50mV	500mV				
0x04 = AC Milli Volts	50mV	500mV				
0x05 = Temperature	Temp					
0x06 = Frequency	99.999Hz	999.99Hz	9.9999KHz	99.999KHz	999.99KHz	
0x07 = Period	9.9999mS	99.999mS	999.99mS			
0x08 = Duty Cycle	%					
0x09 = Resistance	50Ω	500Ω	5KΩ	50KΩ	500KΩ	50MΩ
0x0A = Continuity	Cont					
0x0B = Diode	3V	15V				
0x0C = Capacitance	10nF	100nF	1μF	10μF	100μF	9999μF
0x0D = AC Micro Watt	250.00μVA	2500.0μVA	2500.0μVA	25000μVA		
0x0E = Unused						
0x0F = AC Milli Watt	2500.0mVA	25000mVA	50VA	500VA		
0x10 = AC Micro Amps	50μA	500μA				
0x11 = DC Micro Amps	50μA	500μA				
0x12 = Unused						
0x13 = Unused						
0x14 = AC Milli Amp	500mA	5A	10A			
0x15 = DC Milli Amp	500mA	5A	10A			
0x16 = DC Micro Watt	250.00μVA	2500.0μVA	2500.0μVA	25000μVA		
0x17 = Unused						
0x18 = DC Milli Watt	2500.0mVA	25000mVA	50VA	500VA		
0x19 - 0x1F = Unused						

Note: Possible range values 0x6 to 0xF are never used.

Note: Items in Yellow are possible firmware bugs (in this case a duplicate range).