

Project Information

Onset Computer Corporation

MX1104, MX1105 & CX460 Similarity Declaration

Product Name	HOBO® MX Analog/Temp/RH/Light (MX1104) & MX 4-Channel Analog (MX1105) Data Logger & InTemp CX460 4-Channel Analog Logger
Model Number(s)	MX1104, MX1105, CX460
Document Owner	Jim Corrigan
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The HOBO® MX Analog/Temp/RH/Light (MX1104), MX 4-Channel Analog (MX1105) and the InTemp® CX460 4-Channel Analog Logger data loggers are designed for measuring and recording temperature, relative humidity, light level, and external analog signals. These data loggers are designed and intended for indoor use only. Power is provided by two internal 1.5V AAA alkaline battery cells. An LCD display is provided on the front of the logger for providing sensor status information to the customer. This Bluetooth® Smart-enabled logger family is designed for wireless communication with a host device. The product is configured utilizing wireless communications via a smart device application; this is the only means of communicating with the device.

Below are photos of each product.



Figure 1: MX1104



Figure 2: MX1105



Figure 3: CX460

Similarities and Differences Between the Products:

The MX1105 and CX460 are identical products other than the front adhesive label. The MX1105 is marketed using Onset's HOB0® brand and the CX460 is marketed using Onset's InTemp® brand. Onset "CX" type loggers have traditionally been marketed to pharmaceutical customers, so having a "CX" version of the MX1105 is advantageous to Onset.

The MX1104 does have some minor difference compared to the MX1105 and CX460. The MX1105 and CX460 only utilize external analog inputs that connect to the product via four 2.5mm stereo jacks. The MX1105 / CX460 stereo jack inputs are shown in the photo below.



Figure 4: MX1105 / CX460 Analog Input Ports

The MX1104 is also a four-channel analog input logger, but three of the channels are already connected to internal sensors. The MX1104 product utilizes three internal sensors for temp/RH/light sensors and one 2.5mm 4-pin stereo jack for an external channel. If you refer to Figure 1 above, you will see on the left side of the MX1104 front case there are two circular features. The upper circular feature is a vent for the relative humidity sensor. The circular feature below the %RH vent is an opening for the light sensor. Also note in Figure 1, on the bottom of the case, there is a stainless-steel tube which is used to house a temperature sensor. Figure 5 below shows the MX1104 single analog input and the stainless-steel tube used to house the temperature sensor (compare to Figure 4).



Figure 5: MX1104 Analog Input Port and Thermistor Tube

The MX1104 and the MX1105 share the same main PCB (00-23010-B). The BLE radio circuit on the MX1104 is identical to the MX1105 and CX460. The MX1104 contains a small daughter PCB used to implement the internal sensors (temperature, relative humidity and light level). On the daughter PCB, component U1 is the humidity sensor, component U2 is the light sensor and the two white wires connected to a temperature sensor mounted in the stainless-steel tube. The MX1105 doesn't utilize the daughter PCB. Figure 6 shows the daughter PCB used in the MX1104.

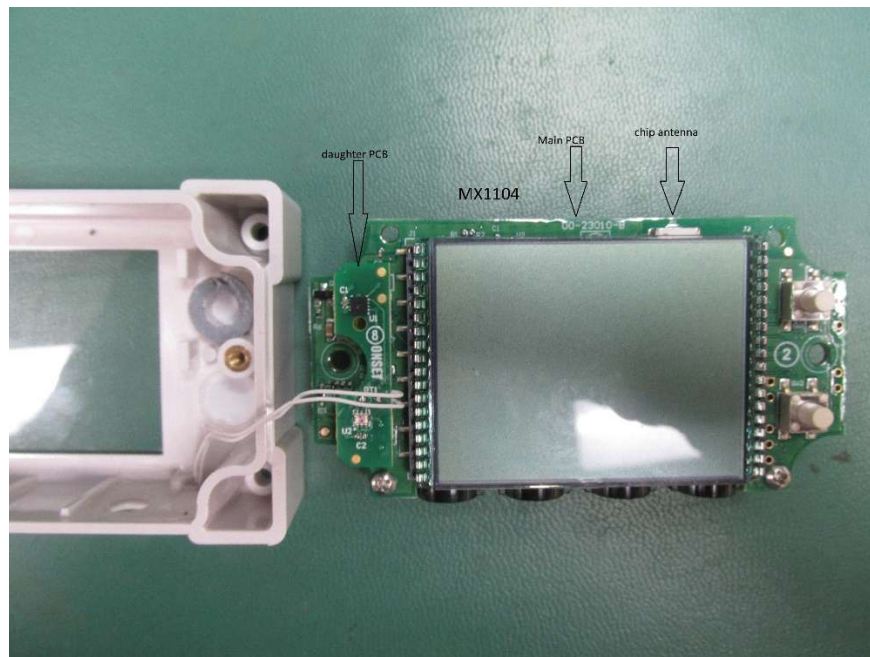


Figure 6: MX1104 Internal Photo showing daughter PCB

Figure 7 below shows the MX1105 / CX460. Note that the daughter PCB is not used.

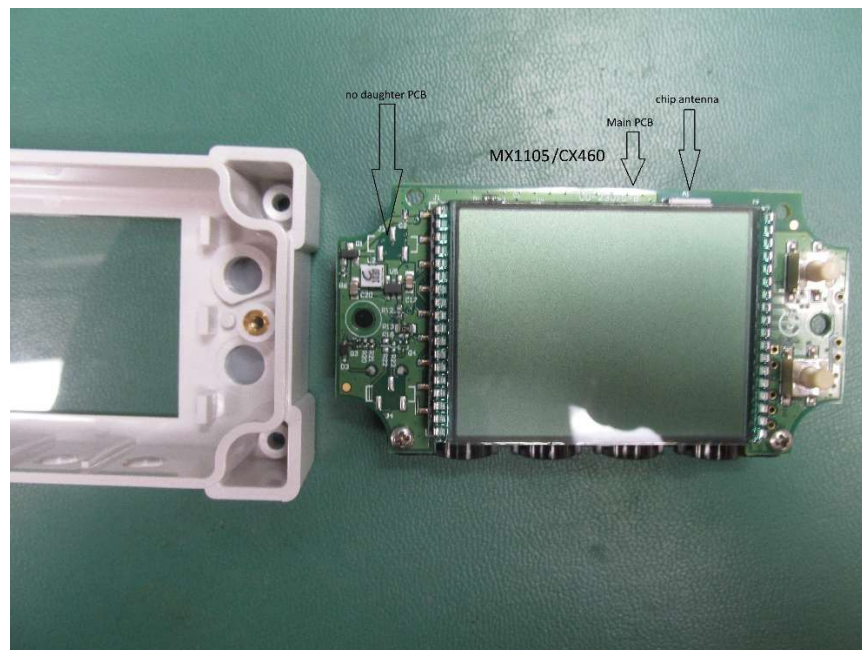


Figure 7: MX1105/CX460 Internal Photo, no daughter PCB

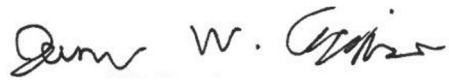
Table of Product Similarities/Differences

Model #	Description	Uses Main PCB 00-23010-B	Uses Daughter Card	Number of External Inputs Used
MX1104	One external analog input channel. Internal temperature, humidity and light level sensors.	Yes	Yes	1
MX1105	Four external analog input sensors	Yes	No	4
CX460	Identical to the MX1105 other than the adhesive product identification label	Yes	No	4

Important Similarities:

- The product enclosure and general appearance of each of the three products is the same, except for minor differences in the MX1104.
- Each product uses the same Main PCB. The BLE radio circuit is 100% identical in each case. There are no differences in the bands or technologies used. The addition of the daughter board in the MX1104 is a non-RF feature.
- Each product operates from the same battery (2 alkaline AAA batteries) and identical regulator circuitry located on the Main PCB.
- The LCD display used on each product is exactly the same.

Sincerely,

A handwritten signature in black ink, appearing to read "James W. Corrigan". The signature is fluid and cursive, with the first name "James" being more prominent.

James W. Corrigan
Hardware Engineer
Onset Computer Corporation
470 MacArthur Blvd.
Bourne, MA 02532 USA
508-743-3195