



## **M12+ Oncore™ vs. M12M™ Comparison**

The new i-Lotus M12M GPS receiver is currently planned for release in August of 2006, and those of you planning to switch from the M12+ to the M12M naturally need to know the salient differences between the M12+ and the M12M. In broad strokes there are really no major differences as far as most users are concerned. The boards are the same size, the connectors are the same, the connectors are physically in the same places and the pin-outs are unchanged.

The one major mechanical change is that the PWB itself is made from slightly (0.020") thicker material so that the resultant thickness is approximately 0.063". This MIGHT affect some users in their mounting hardware stack-ups if the currently utilized screws used are a little on the short side. The M12M will still fit in both styles of Synergy Systems' M12+ shield cans without modification.

### **1. Power Supply Requirements**

Power requirements are almost the same for the new receiver. One benefit is that the upper power supply voltage limit has been raised to +3.3V to make it easier to interface the M12M with +3.3V systems. Power consumption has also dropped by 35mW (a little more than 10mA). Values are tabulated below:

	<u><b>M12M</b></u>	<u><b>M12+</b></u>
V <sub>cc</sub> Range	+2.8 - +3.3V	+2.85 - +3.15V
Power Consumption	155mW max	185mW max

### **2. RF Requirements**

The acceptable external gain range from the antenna/cable system is much wider with the M12M than it was with the M12+. Whereas the M12+ required external gain limited to a range of +18 – 36dB, the M12M front end can handle input gains from +10 - +50dB, making antenna system design less demanding. Jamming immunity of the M12M is equal to that of the M12+.

### **3. Cold Start TTFF Time**

Typical Cold-Start time for the timing receiver has been reduced from 200 seconds to 150 seconds, while Cold-Start time for the positioning receiver remains at 60 seconds.

#### 4. M12M/M12+ Part Number Conversions

Instead of the part numbers beginning with P1x3 or P2x3 as with the M12 and M12+ receivers, the M12M part numbers will begin with IL-GPS. Part number cross-references are shown below:

<b>Detail</b>	<b>M12+</b>	<b>M12M</b>
Timer, no battery	P273T12T1x	IL-GPS-0010-A
Nav, no battery	P273T12N1x	IL-GPS-0020-A
Timer, with battery	P283T12T1x	IL-GPS-0030-A
Nav, with battery	P283T12N1x	IL-GPS-0040-A

In conclusion, if you have ANY questions or concerns about using the M12M GPS receiver in your application, please don't hesitate to contact us.

Synergy Systems, LLC  
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