

# Ubiquiti Products for HSMM

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High Speed Multi Media (HSMM) is often referred to as being the Hinternet (Ham Internet), as it is primarily used under FCC Rules & Regulations Part 97. Under Part 97 commercial off-the-shelf equipment can be used at higher power and higher gain than the more common Part 15 802.11a/b/g operations.

The primary purpose for HSMM and Hinternet is to augment emergency communications via long range high speed wireless data networks that can handle voice, data and video communications. HSMM can also be used in the day-to-day aspects of Amateur Radio Communications.

One direction the High Speed Multi-Media Working group had was to develop in collaboration with TAPR, 3.3-3.5-GHz transverters suitable for use with 802.11 gear.

The thought is with the seemingly infinite amount of consumer wireless devices being deployed worldwide, the shared 2.4 GHz and 5.8 GHz noise floors are rising. The 3 GHz ham allocations are from 3.3 to 3.5 GHz yielding over 30 better suited non-overlapping full-width channels unshared with Part 15 unlicensed devices.

Ubiquiti Networks is a new company founded in 2005. Their "frequency freedom technology, seems to lead the way and promise integrated radio technology which uses an advanced RF integration and firmware design to provide a powerful platform capable of operation in any frequency imaginable. Basically Ubiquiti radios are Atheros chipsets with transverters onboard.

There are three different Ubiquiti XR3 frequency ranges that are version dependant (hardware limited ranges): XR3-2.8 (2.70-2.90 GHz), XR3-3.5 (3.40-3.70 GHz), and XR3-3.7. The Ubiquiti XR3 XtremeRange3 is a mini-PCI Adapter 3.5GHz 400mW and lists for \$240. The price is still considerably lower than an Icom ID-1 implementation and yields much higher throughput.

## Ubiquiti XR3



I few months back I blogged about their Nanostation. I have been finding the Atheros chipset ability to utilize 5 MHz channels very handy for side-stepping interference. Well, they have out done themselves. At a starting MSRP of \$49, NanoStation Loco provides a breakthrough in cost, reliability, & performance. It also is supported by a Linux SDK to encourage open source development.

## Ubiquiti NanoStation



NanoStation2/5 "LOCO" - This dual-polarity (auto-switching/diversity) 8db antenna has 100mw output and POE (18V). The 5ghz version comes with 13dbi integrated antenna. The NS2/NS5 "LOCO" does not have external antenna connector like the standard NS2/NS5. It's also a little less powerful, only 20 dBm (100 mW) instead of 26. (400 mW). Keep in mind aftermarket firmware hacks let you do nearly one watt with the normal NS2, so this is likely a low ended report of what is actually capable of.

## Ubiquiti Bullet (and Steve's coffee)



Another option if you need an external antenna is Ubiquiti's 2.4 GHz bullet. It's their simplest, and cheapest (\$40) 802.11 device. It's basically a ethernet->N converter that allows you to connect an external antenna.