Ham It Up Plus

HF Upconverter w/ TCXO, ULF Support & Noise Source

A high-quality RF (ULF/VLF/LF/MF/HF) converter for software defined radio devices like our NESDR series and the HackRF--extends your radio range down to 300Hz. Ham It Up Plus will also work as a panadapter for most radios and can be used for both receiving and transmitting.

Frequency capability of 300Hz-65MHz in upconvert mode and 300Hz-6GHz in passthrough mode.

The Ham It Up Plus is an HF upconverter **that will allow you to extend the range of your favorite radio down to at least 300Hz**! It is compatible with any radio capable of 125MHz-190MHz (for full 300Hz-65MHz operation in upconvert mode).

Ham It Up Plus has all the same fantastic features as the Ham It Up, plus the following major changes.

Major differences vs. Ham It Up v1.3

- A **125MHz TCXO**, custom built for exclusively for NooElec by our Japanese partner, is included and pre-installed, providing **more accurate and stable tuning** in any environment
- Ultra-low distortion ceramic capacitors, custom built exclusively for NooElec by our Taiwanese partner, allowed us to extend the range of the Ham It Up Plus **all the way down to 300Hz**
- The separate **noise source circuit is fully assembled**, which can be used for a number of RF projects, including calibration and tuning of filters, amplifiers and attenuators
- **Form factor was kept identical** to the Ham It Up, which means the same enclosure can be used (note a new end panel may be required to accommodate the additional SMA connector of the noise source circuit)

Major Features:

- Input, output and LO **filters configured for substantial sensitivity and selectivity improvements**
- Ultra low-noise linear power regulator (LP5907), with **voltage noise under 10 µVRMS!**
- **Optional battery-powered operation** for DXing on the go! (easy-to-assemble AAA battery holder sold separately, or roll-your-own solution with the easily-accessible battery power input vias)
- New **side-mount LED indicators**, easily visible with or without an enclosure (Green = upconvert mode enabled; Yellow = USB powered; Red = low voltage)
- u.FL socket (also known as IPX and UMCC) available for **optional clock injection from an external clock source**, should a higher-accuracy clock be desired
- 5 other **u.FL socket mounting footprints** for simplified testing, troubleshooting and demonstration purposes
- **Additional mounting holes** to facilitate custom installations
- **Sturdy right-angle SMA connectors** to improve spacing tolerances and ensure physical compatibility with our machined aluminum enclosures (enclosures sold separately)

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- **Female SMA** for both **input** and **output** for a wide array of connectivity options
- **In-line SMA** connectors. Much easier to connect and manipulate than side-by-side SMA connectors
- **Antenna protection** on RF input--in-circuit in both enable and passthrough mode--to protect your Ham It Up & SDR from stray ESD
- All critical components sourced exclusively from **North American parts distributors**
- Only **ultra-low-noise components** used in the signal path
- **Ultra-high-Q, low ESR** inductors and capacitors used for all filters
- **Powered by** a sturdy & common **USB-B USB socket** for a multitude of power input options
- **PTC fuse** on USB power input to protect your Ham It Up upconverter from short circuits
- Upconverter **enable/passthrough toggle switch**--less fiddling with small, delicate cables and connectors
- **125MHz oscillator** for improved sensitivity (away from high-traffic RF zones, like broadcast FM)
- LO disabled in passthrough mode
- A maximum input level of +1dBm with LO at +7dBm
- High-quality **PCB** with ENIG finish
- Small, light-weight PCB (just 3.8" x 1.9")
- Designed to fit standard off-the-shelf Hammond enclosures
- **7 mounting holes** for standard PC screws
- Designed and manufacturered in conjunction with **Opendous Inc.**, an excellent **open-hardware design** company
- **Full project documentation**--schematics, PCB design files and assembly information--is freely available.

Operation:

- Connect your antenna to the RF input
- Connect your SDR to the IF output
- Ensure your toggle switch is in the enable position
- Plug your USB power source into the USB-B USB jack
- Fire up your favorite SDR software. Tune to 125MHz + (+/- the tuning offset from the tuning procedure) + your desired frequency and enjoy!

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