

# Getting ready for a Low Power transmitter install

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## 1. Things to think about first

To get good range, you want to locate the transmitter above man made objects in the area. In other words the transmitter should be the highest thing in the area, generally. It doesn't matter if there is one tower nearby that is higher, the idea is you don't want the transmitter surrounded by higher buildings, or rooftops. Higher then this could produce better results, but not dramatically. Ground is very important, you want to find a ground that has the lowest resistance to earth (ground) possible. Often transmitter location is a compromise between a good ground location, convenient spot that will not be vandalized, and a spot that will allow the transmitter to function.

### 1.1 Where should things go?

Then you want to think about where your studio will go. This can be as simple as a closet, or an entire room. You want to keep in mind that a wire will need to be connected in-between the transmitter on the rooftop and your studio, so try to locate the studio and transmitter location close together. It may be possible to use a wireless connection. Is there a ground already on the roof? Sometimes you can use the ground of a lighting protection system, existing radio antennas, or a HVAC ground. If you need to add your own ground it can be a lot of work, but adding your own ground can get the best results.

## 2. You can do some of the prework

Doing some of the prework can make things go much easier, and reduce the time the installer needs to spend with you. These things are not difficult. Talk to the installer before their arrival and get their advice on whether you should attempt this prework

### 2.1 Transmitter mounting

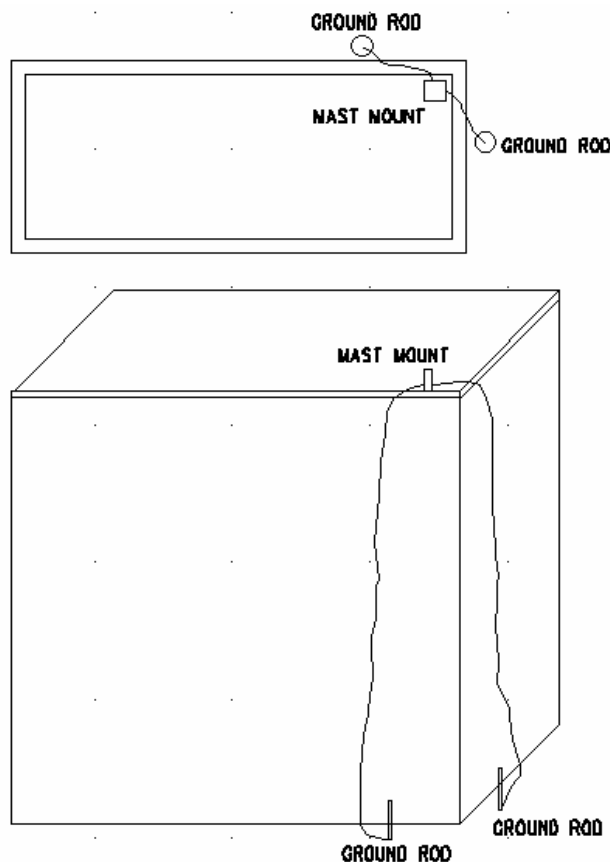
If you can determine definitely where the transmitter is going it can save time if the mount is up when the installer arrives, simply follow instructions that come with the mount bracket.

### 2.2 Routing the control cable

If the transmitter location and studio location are definitely located then the control cable can be run. Sometimes this is the most time consuming part of the install. Do not run the cable near large power wires. Use 2 twisted pair shielded UV outdoor wire. Leave plenty of extra at both ends.

### 2.3 Ground

Ground the mount to be compliant with NEC and local codes, the transmitter will be grounded to the mount.



It is important to ground the mast with two or more ground rods as shown if at all possible, this gets the resistance to earth very low.

8 foot ground rods or longer can be bought at hardware stores. They are used to ground electrical meters. Be sure to tightly clamp all your connections, or solder them with electrical solder and torch. Secure wire to building so it will not move. Before pounding rods, contact utility companies to locate any underground utilities that may be a problem. Ground rods can be installed quickly with a jackhammer.

### 3 Your Studio

Your studio is really up to you. Think about what you need/want to accomplish and build your equipment around this need according to your budget. Here are some places to shop:

<http://www.musiciansfriend.com/>

<http://www.bswusa.com/main.asp>

<http://www.mcmelectronics.com/>

#### 3.1 Equipment

A basic setup could include:

CD player

mixer

compressor limiter

AM type audio processor

Microphone

Headphones

Examples:

Play your tunes on the Sony CDP-CE375 Compact Disc Player for a superb sound experience. This 5-disc changer features CD-RW playback so you can enjoy your homemade mixes. Additional features include a headphone jack, volume control, 20-track music calendar, and 32-step programming. The Sony CDP-CE375 CD Changer features jog dial control with Direct-Access track selection.

##### **Sony CDP-CE375 5-Disc CD Changer Features:**

- CDRW playback
- Headphone jack
- Volume control
- 20-track music calendar
- 32-step programming
- Jog dial control with Direct-Access track selection



The Behringer EURORACK UB1202 is a 12-input, 2-bus mic/line mixer that boasts 4 state-of-the-art Invisible Mic Preamps (IMPs) You even get an effective, extremely musical 3-band EQ plus switchable low-cut filter on all mono channels. There is also one post-fader aux send per channel for external effects devices; main mix outputs; plus separate control room, headphone, and stereo tape outputs.



The Behringer MDX2600 Composer Pro-XL Compressor is surprisingly easy to use. It has all the basic tools for optimal sound onstage and in the studio plus integrated dynamic enhancer, de-esser, tube simulation, and low-contour filter. Revolutionary IKA circuitry combines the advantages of hard- and soft-knee compression in a single dynamic function to deliver natural, transparent results. Also equipped with fully automatic and manually adjustable attack and release times, IGC peak-limiting circuit, selectable dual-mono or stereo, 12-segment display, switchable sidechain input with sidechain monitor function, and servo-balanced XLR and 1/4" I/O. Single rackspace.

**Behringer MDX2600 Composer Pro-XL Compressor Features:**

- Integrated dynamic enhancer
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- Tube simulation
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- Switchable sidechain input with sidechain monitor function
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- Single rackspace



Innovonics 222 audio processor

<http://www.am1000rangemaster.com/amprocessing.html> for a article on AM audio processors

The MXL 990 Condenser Microphone with Shock Mount has a silky, sweet high end while retaining tight, solid low and midrange reproduction. The 3/4" gold-sputtered diaphragm creates a professional sound suited for digital and analog recording. Attractive vintage body style with champagne finish. 30Hz-20kHz frequency response. 130dB maximum SPL. Includes custom shock mount, mic stand adapter, and case. Requires phantom power.



Sony MDR-V150 Studio Monitor Series Head-phones



#### 4 The installation day

Try to have any tool the installer won't be able to bring available if you can. Keep in mind the installer may not be able to bring heavy tools. Here is a list of things it may be helpful to have on hand.

Small flat and large flat screwdriver, wire cutter and stripper, mallet to pound ground rod in, hammer, tools to install mast mount, large Phillips screwdriver, medium adjustable wrench, knife, torch for soldering, electrical type solder. Drill may be needed depending on the situation as you install and mount the wires. Keep the weather in mind, often an installation can only be completed if weather permits. Try to get an early start.

##### 4.1 what you need to do ***Before*** the installer arrives

Keep an eye on the weather forecast. If needed have any underground utilities marked. Be sure any prework agreed upon is complete. Have any tools, ladders needed available. Be sure installer has access needed. The installer may need a helper or two.

<http://www.am1000rangemaster.com/index.html>  
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