

User Guide to LandmarkAudio FM-350

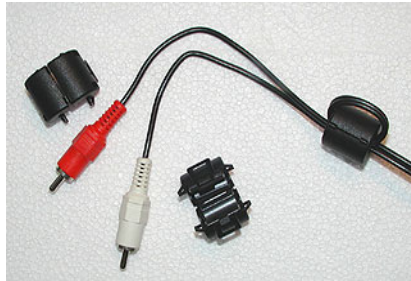


**Provisional Installation information
Landmark Audio Technology FM350
518-426-0171**

NOTE: For legal part 15 operation DONOT MAKE alterations to the transmitter or the antenna. Opening th case WILL void the warranty.

Setting up your transmitter for best results. Situation A - MAXIMUM coverage

- 1-** Place the transmitter box as HIGH as possible. If you live in a two story house, placing it on the second floor, in as central a location as possible will yield best results.
- 2-** When placing the attached wire whip antenna, arrange the wire so it is as vertical as possible, using tape or a push pin to hold it in as straight and vertical as you can.
- 3-** Remember that the body of a building, particularly concrete and masonry blocks block FM signals which are line-of-sight, so an unobstructed "view" from the antenna is key to good coverage.



Applying RF shield blocks. You will find several clamshell style RF blocks, supplied to prevent RF from travelling on the skin of the audio input lines and causing distortion or buzzing sounds. The best way to apply them is as shown with a full loop going through the block before closing. Two are supplied in the event you are using two unbonded cables.

Setup tip: Always locate the power supply module as far from the transmitter as possible, and avoid placing the transmitter case on any object that has a strong AC magnetic field.

Before going on the air - The most important step is choosing your channel. Operating without a license still obligates you to refrain from causing interference. And to do that - you must transmit on a frequency that is not in use locally.

Unless you live in a very remote part of the continental US, you will want to conduct a personal frequency search. Using a good quality DIGITALLY tuned FM receiver, start listening near the TOP of the FM band (107.1 Mhz is a good starting point for our USA models) You want to check each frequency while tuning slowly DOWN the band looking for, ideally, 5 or more unused frequencies, or very weak channels between two strong stations.

(If your FM tuner works in .1 mhz step - please understand that ONLY channels ending in .1 .3.5.7 and .9 are standard assigned frequencies, sure to find on ALL possible FM radio receivers) . If you are really lucky, you can find a bigger gap than the one we suggest. Conversely, if you are in a major metropolitan area, you may have to settle for a gap of just 3 stations. You want to be as much as possible, positioned in the CENTER of stations on either side of your chosen frequency.

Once you find a good channel, you usually never have to change it.

It is important that you make sure you are not going to set your transmitter to a channel that is already in use, since this can cause interference to other listeners within range.

In spite of the Part 15 license free status of the FM 350, you are still bound by numerous aspects of Federal Communications law. The most important is to not knowingly cause interference, and to cease transmission promptly if notified, should you be inadvertently causing a problem with your transmission. And it's also the courteous way to share FM spectrum. You should also be aware that it is a Federal offense to adopt a call sign that was not issued to you by the FCC.

DO NOT OPEN the case or MODIFY THE ATTACHED antenna!
This will void the warranty and may cause your unit to operate out of FCC compliance.

Are some channels better than others? YES most definitely. And the rule is this.

Rule 1. HIGHER frequencies are almost ALWAYS better.

Rule 2. Using MONO transmission increases range, and improves the receiver signal-to-noise ratio as a bonus.

The FM 350's outstanding ability to tune every standard FM channel gives you all the choice you need!

So where should I set up my FM 350? Your antenna can be anywhere up to about 50 feet from the receivers you want to reach, depending on the sensitivity of the radio receiver. A "boombox" needs to be closer - a modern digital receiver can be farther away and still get an excellent clean signal. In general for best coverage, the antenna should be at the center of the coverage area, as high above ground, and away from metal or concrete walls, as is possible.

As a special tip: For best coverage, straighten the antenna wire and align it so that the wire is vertical.

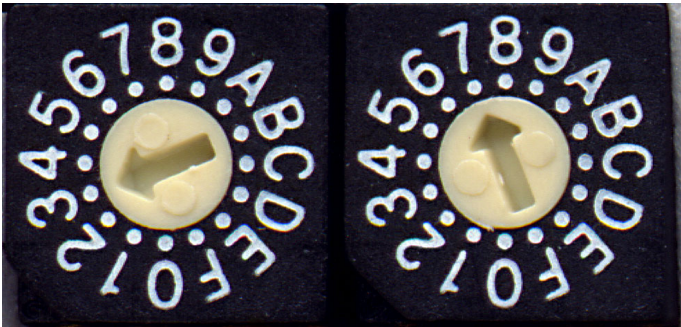
Please do not plug in the transmitter until you have preset the channel you intend to use! First look up the channel code for the the channel you want to use, using the transmitter frequency table below.

There are two different codes for every FM channel, depending on whether or not you want stereo or mono operation. Remember - mono carries farther. The numbers in the table each correspond to FM US channels. To set your channel, find the frequency and decide if you want stereo or mono operation. Using the supplied 2.4 MM (or a .1” blade) screwdriver, rotate the code switches to the two digit HEX code for that frequency. Every transmitter leaves the factory set to 99.1 Mhz which is code number 37 in the chart. Here is a close up of the channel switches showing setting #37, as an example. Unused or invalid code settings set the frequencies indicated at the end of the last column .

Landmark FM Codes • F = Frequency S = Stereo M = Mono

F • S • M	F • S • M	F • S • M	F • S • M
88.1 00 80	93.3 1A 9A	98.5 34 B4	103.7 4E CE
88.3 01 81	93.5 1B 9B	98.7 35 B5	103.9 4F CF
88.5 02 82	93.7 1C 9C	98.9 36 B6	104.1 50 D0
88.7 03 83	93.9 1D 9D	99.1 37 B7	104.3 51 D1
88.9 04 84	94.1 1E 9E	99.3 38 B8	104.5 52 D2
89.1 05 85	94.3 1F 9F	99.5 39 B9	104.7 53 D3
89.3 06 86	94.5 20 A0	99.7 3A BA	104.9 54 D4
89.5 07 87	94.7 21 A1	99.9 3B BB	105.1 55 D5
89.7 08 88	94.9 22 A2	100.1 3C BC	105.3 56 D6
89.9 09 89	95.1 23 A3	100.3 3D BD	105.5 57 D7
90.1 0A 8A	95.3 24 A4	100.5 3E BE	105.7 58 D8
90.3 0B 8B	95.5 25 A5	100.7 3F BF	105.9 59 D9
90.5 0C 8C	95.7 26 A6	100.9 40 C0	106.1 5A DA
90.7 0D 8D	95.9 27 A7	101.1 41 C1	106.3 5B DB
90.9 0E 8E	96.1 28 A8	101.3 42 C2	106.5 5C DC
91.1 0F 8F	96.3 29 A9	101.5 43 C3	106.7 5D DD
91.3 10 90	96.5 2A AA	101.7 44 C4	106.9 5E DE
91.5 11 91	96.7 2B AB	101.9 45 C5	107.1 5F DF
91.7 12 92	96.9 2C AC	102.1 46 C6	107.3 60 E0
91.9 13 93	97.1 2D AD	102.3 47 C7	107.5 61 E1
92.1 14 94	97.3 2E AE	102.5 48 C8	107.7 62 E2
92.3 15 95	97.5 2F AF	102.7 49 C9	107.9 63 E3
92.5 16 96	97.7 30 B0	102.9 4A CA	107.9 64 6F E4-EF
92.7 17 97	97.9 31 B1	103.1 4B CB	88.1 70-7F F0-FF
92.9 18 98	98.1 32 B2	103.3 4C CC	
93.1 19 99	98.3 33 B3	103.5 4D CD	

Notice that the codes are Hexadecimal, meaning they use combinations of numbers and the letters A -F.



Setting Modulation:

There are a pair of volume controls for adjusting modulation. For most channel settings and audio sources, the 12 o'clock or 50% setting is the right place to start. This is checked at the factory. However there is a slight variation in volume sensitivity that is based on the frequency you transmit on. When using channels at the low end of the band (appx 88.1 to 94. Mhz) you may want to increase the volume to as high as perhaps the 2 o'clock position for consistent loudness and quality sound. And likewise - on the higher channels , above 103 Mhz or so - you may want to slightly reduce the volume settings, to say 10 or 11 o'clock. Because of the superior clarity and frequency response of the transmitter, you do not need to compete with commercial broadcasters for sheer volume, and since you do not have the audio compression and other loudness enhancing tricks they do, you should avoid trying to sound TOO loud , as this can cause over modulation, distortion and interference. The easy way to tell if your modulation is too high is to watch out for “splashy” or over-emphasized “S” sounds and sounds of distorted audio on volume peaks. A great way to zero in on perfect modulation is to compare loudness with a prominent commercial broadcaster, and then set **your** modulation (transmitter volume) to be a bit quieter.

While your transmitter performs well on all channels, each unit is factory adjusted for peak modulation quality for the range of 95 to 105 Mhz. On advice from the factory, any unit can be field adjusted to further surpass FM broadcast sonic standards for ANY channel that you choose.

You can adjust modulation using the volume controls in individual Windows player applications, and over time, experience with the sources you are broadcasting will be your best guide to learning the best setting for master volume.