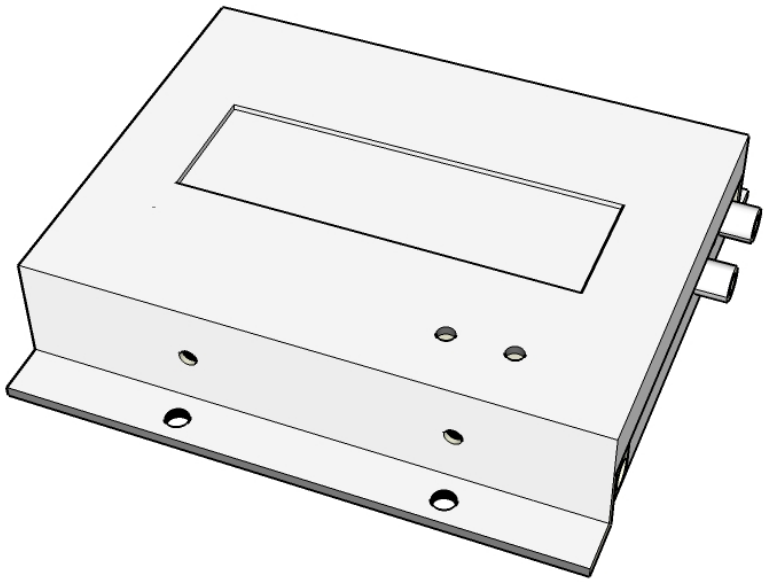
EDM-TX-LCD

SERIES

KIT
ASSEMBLY & OPERATING
INSTRUCTIONS

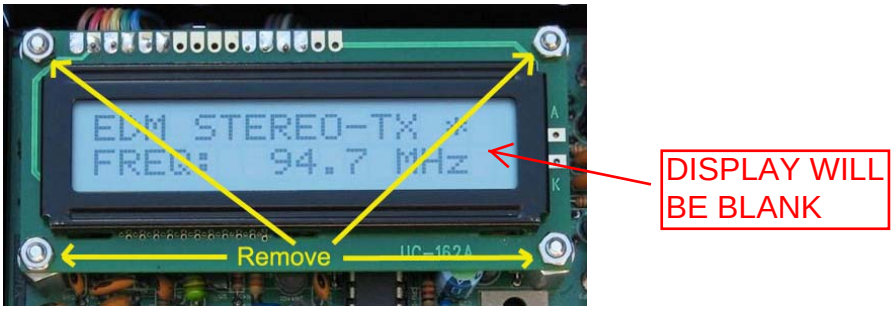


ASSEMBLY INSTRUCTIONS FOR YOUR KIT

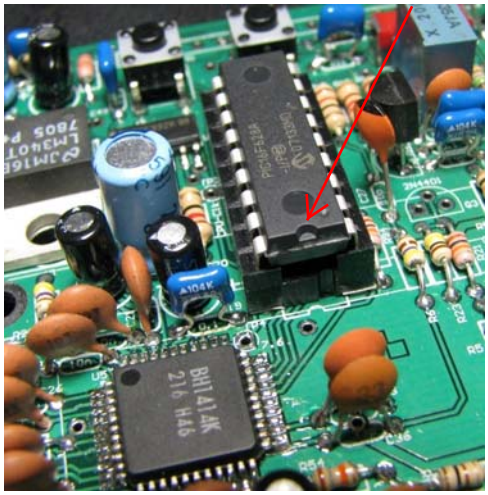
Please note that all the components were tested before shipping for proper performance and quality.

- Inspect your shipment for any damage. Notify us if anything looks abnormal.
- Contents: PCB
  Microprocessor
  Power Jack
  Universal 12V regulated power adaptor
  Operating Instructions
  Wire Test Antenna
  Enclosure (optional) with screws (4 x M3, 4 X countersunk) **2 of countersunk inserted to held pcb during transportation.**

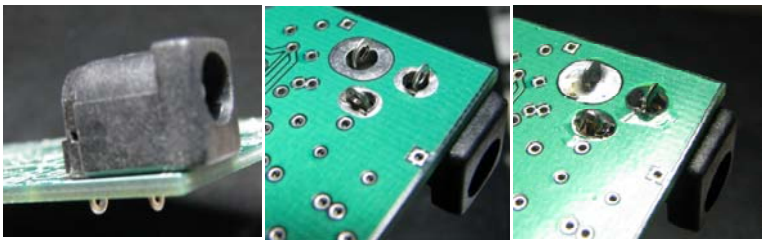
- Choose a safe working area **free of potential static electricity**. Avoid assembly while sitting on a carpet or wearing woolen garments.
- Undo the 4 screws holding the lid and the 2 transportation screws on the bottom of the enclosure to free the pcb for assembly.
- Lift off the top lid.
- Remove the 4 nuts and plastic washers from the corners of the LCD display to enable lifting the display.



- Next remove the microprocessor chip from the foil.
- Firmly insert the micro while noting the correct orientation of the notch on the package.



- Refit the LCD display. Do not forget the plastic washers.



- Using a low **wattage soldering iron** (under 100W) and **acid-free electronic-grade solder** (obtainable from your local electronic parts store), continue to **solder** the power jack into the PCB. Make sure it is filmy seated and flush against PCB (see photo's). Apply solder **iron tip** so to make **contact** with **BOTH** the **terminal and PCB** for about 3 **seconds** before applying your **solder** wire to **this** area, **WHILE** holding the solder **tip in** the same **position**. Apply **just enough solder** to flow freely into this joint making a **good, solid** and shining **connection**. Quickly remove iron tip and solder wire and **allow** solder joint **to cool down** for about 5 seconds **WITHOUT moving** the **part** during the cool down process. Moving the part during this cool down period may result in a intermittent or "dry-joint". Repeat for all terminals.
- Make sure you apply enough solder & heat to fill in the holes completely as shown. First apply soldering iron tip for 3 seconds to heat up the solder pad and component pin. Then apply the solder at a point between the iron tip and pin. Keep feeding solder until the hole is filled evenly with solder.
- Basic assembly is now completed and you can continue to **OPERATING INSTRUCTIONS**

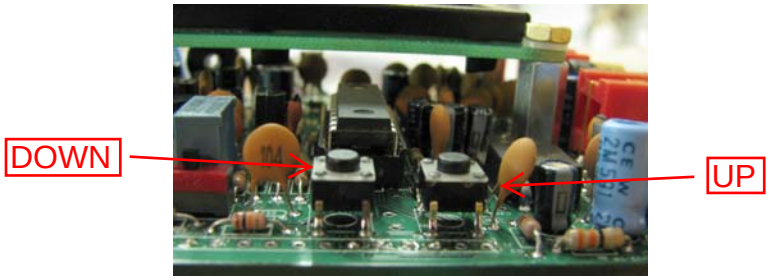
OPERATING INSTRUCTIONS

(Please **read completely** before operating the unit)

Remember all the responsibility is with you to operate your completed unit with courtesy to others and within the local laws and regulations of the country you are in.

Your EDM TX-LCD kit version's RF output is factory set in the 10mW position for safety reasons. We recommend this setting for most countries. Operating in the 100mW position is NOT recommended for North America and Canada under "Part 15" regulations where legal range is limited to between 200-400'

- **First monitor the frequency you intend to transmit on with a good quality receiver to find a clear channel, and if possible open channels on either side. Make sure this channel is clear for at least ½ mile radius from the point where your transmitter will be located. Car radios make good monitoring receivers because of their better sensitivity.**
- **Apply** the **audio source** material. This should be line-level audio from a CD player, DVD etc.
- **Apply** the **regulated 12VDC** from the switching adaptor. **(It is OK to power up without antenna for short periods while setting your transmit frequency for the first time)**
- The unit should power up in the **default mode of 88.4MHz** after displaying *"Resetting"* as indicated on the LCD
- **Tune** a suitable **radio** capable of receiving Stereo transmissions **to** the same **frequency**, or **another frequency** of your choice **previously selected**, by using the **UP** or **DOWN** preset **buttons.**



- **Now apply** a suitable **antenna** load 50Ohm, or the wire test antenna supplied to your unit.
- The source **material** should now be **received in** full **stereo**. The **stereo indicator** should also be **lit** on the receiver. **If** you hear **distortion,** turn the two **input** level **adjustments clockwise** (by equal amounts) **until no** more **distortion** can be detected. About 50% setting is suitable for standard line-levels of 200mV rms

- This unit uses a PLL with **fairly long locking times** to achieve **good** low **frequency** audio **response**. This will be more **noticeable when** tuning **rolls over** at the ends of the band. Unit will **remember** (8 seconds after no button press, last frequency setting is stored in memory) the last frequency **setting** before power-down and **will reset** to that value **on** a **power-up**. Display will show a "*" to indicate that the current frequency is stored in memory.
- Unit will **reduce** (mute) the **RF** signal by about 25-30dB **while tuning** with the PLL in the un-lock state. During this time the **display** will **show "Tuning<-"** when **tuning is from high to low** or **"Tuning->" when tuning** is **from low to high.** The **display and RF** level will return to **normal** once the **desired frequency** is **reached. Best range** will be achieved making sure the wire **antenna** is positioned **vertical** and **away from** any **metal** surfaces. Increased range with the RF switch in the 100mW position, only where permitted.
- Any **other** transmit **frequency** 87.7-107.9 may be selected by **pushing** the **UP or DOWN** button.
- If you operate the **unit near a TV** set, you **may hear** sound like a **high pitch whistle** on your signal and is **due to** the **15 kHz** used to generate the high voltages **for the picture tube.** This **15 kHz** will **beat with** the **19 kHz** stereo **pilot** tone **and produce** a **difference signal. This** is the **4~5 KHz** high pitch whistle often **heard.** Use longer audio leads to **operate** the unit some distance **away from TV.**
- **Do not allow static electricity to discharge into the antenna**. Keep away from TV and PC CRT screens that will have high static voltage levels.
- **Lastly, be responsible in operating your unit. If you receive any complaints, terminate your transmissions immediately and investigate. You may need to change to another frequency. Remember all the responsibility is with you to operate your unit with courtesy to others and within your local laws and regulations. Licensed radio stations always have priority getting their signal to their listeners.**

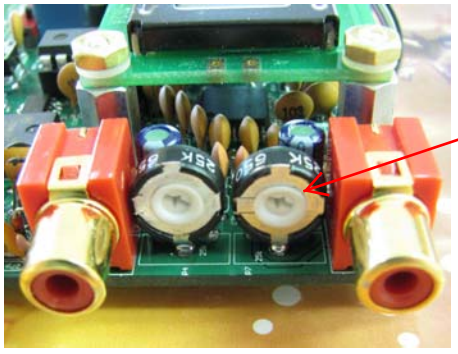
If you have a problem and need to return your shipment for service etc. DO NOT ship it back to the dispatch location where your order shipped from. Email us first and we will provide a return address if your problem can't be solved via email!

Tampering or removing parts or any signs of removal will void your warranty.

ADJUSTMENTS

Please note that in the 100mW position you may experience "hum" on your signal from RF energy getting into your audio cables or audio equipment feeding the unit. If the hum is not there in the 10mW mode, but only when switched to 100mW, you are experiencing RF feedback problems. Use good quality, well screened cables and/or reposition the test antenna to eliminate this. Using an external antenna where allowed will eliminate this from happening in most cases.

- **Audio L & R**



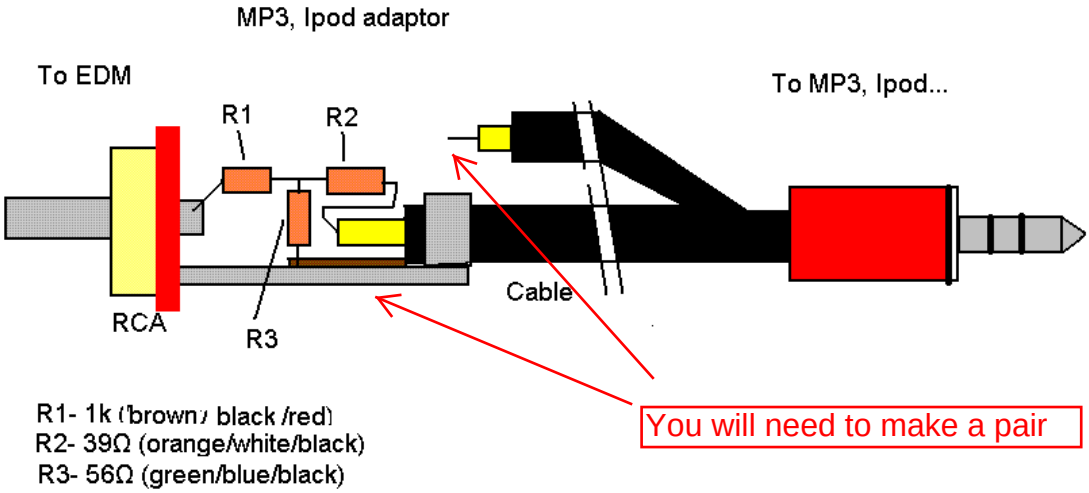
(Use 75% setting for 75kHz deviation with 150mV rms audio line-level input) Too high setting will cause distortion on your signal.

Feeding a MP3 player into the unit's audio inputs through the player's earphone connection will overdrive the EDM's audio inputs causing distortion. You need an MP3 to RCA line-level attenuator (contact us for details) or construct one using the plans below

You may also purchase off-the-shelf attenuators

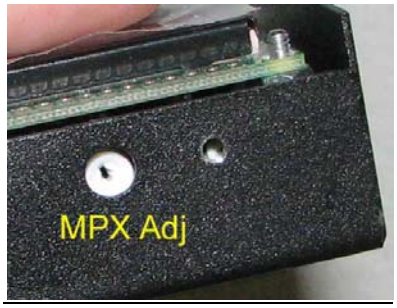
http://www.soundprofessionals.com/cgi-bin/gold/item/SP-ATEN-1
http://www.radioshack.com/product/index.jsp?productId=2102975&cp=&sr=1&origkw=volume+control&kw=volume+control&parentPage=search

Model: 42-2559 Catalog #: 42-2559



Parts will be available from your local electronics parts dealer

- **MPX Adjustment**



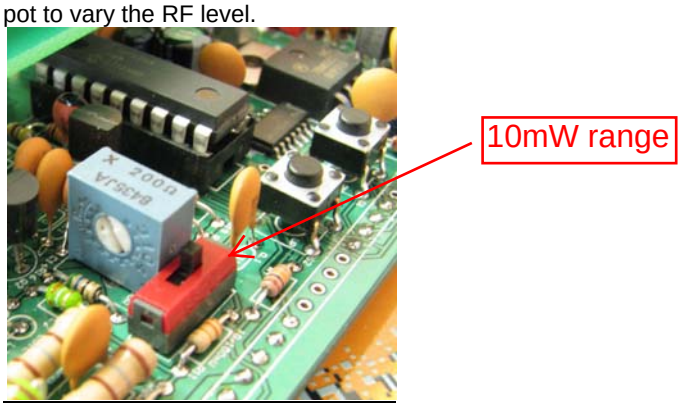
(55% factory set for 75 kHz deviation with above input level)
Under normal conditions MPX level should not need any adjustment.
Turning MPX counter clockwise will increase deviation.
Too low setting will remove stereo signal on your receiver. Too high setting will cause distortion on your signal.

It is normal that your on-air volume will sound a little softer than commercial stations. This is because commercial stations use sound compressors to maintain a high average audio modulation signal without exceeding the maximum deviation limits. Increasing your MPX level to match will result in over modulation on peaks and possible interference to other adjacent frequencies.

DO NOT ADJUST THIS!!

This setting is factory set for minimum distortion, full band VCO tracking and to linearize modulation sensitivity. This can only be reset to optimum by use of the required lab calibration instruments.

- **Power adjustment**
  Power level can be set in the range 1-10mW or 10-100mW using the slide switch to set range and the power pot to vary the RF level.



Setting as shown is set to the 1-10mW range

NOTES TO SET RF LEVEL

USE A SMALL FLAT BLADE SCREWDRIVER FOR ADJUSTMENT
ADJUST VERY GENTLY (DO NOT FORCE PAST END STOP's)
FORCING WILL CAUSE INTERNAL DAMAGE TO THIs CONTROL

Power increase when the adjustment is clockwise
As shown power can be set 1mW to 10mW

With switch in the forward direction power can be set 2mW to 100mW
USE THIS POWER RANGE RESPONSIBLY

NEVER USE MORE POWER THAN NEEDED TO AVOID INTERFERENCE

Contact us at any time EDM_sales@edmdesign.com

You may also want to join our Yahoo group for lots of information and support

http://groups.yahoo.com/group/edmdesign/

PLEASE USE YOUR TRANSMITTER RESPONSIBLY TO STAY OUT OF TROUBLE WITH YOUR LOCAL AUTHORITIES