# Installation

# 1. Installation:

## 1.1. Unpacking:

All the equipment is carefully inspected and tested under the company quality control. Any irregularity must be filed immediately with the carrier responsible for the transportation equipment. Any doubts, contact **LARCAN Inc.** before installing the equipment so that your doubt do not become a problem.

## 1.2. Repacking and Transportation:

If it is necessary the equipment be sent back to the company or any distant place, some precaution must be considered:

- Wrap the equipment with air bubble plastic. Do not let any part of the equipment exposed to protect it against any damage to the equipment painting;
- Wrap the equipment with cardboard and wood pack it to protect against any impact;
- Ensure that anything was left loose inside the package. Put the package stood to avoid any impact.

## 1.3. Installation Requirement:

- **Installation Site:** The equipment should not be installed in places that exceeds 2000 meters of altitude; have a proper air conditioning system (if it is necessary), voltage regulator, ventilation air conducting; ensure that sufficient space around the equipment is available to permit easy access, and to enhance future ease of maintenance. It is recommended a minimum 0.5m of clearance both right and left sides, and 1.0m both front and rear of the equipment; the ceiling should have at least 3.0m of height where the blower exhaust will be installed. The place must be free of dirt, humidity and dust.

- **Installation Surface:** For small equipment, it is recommended being installed on a table or a standard rack 19", which it should have at least 0.3m of clearance from the wall in order to have a proper ventilation.
- **Power board:** It is necessary a power board to organize, separate, and distribute the power supply and mainly for equipment protection. The power board is connected to the power line. Thermomagnetic disjunctor must be used in order to feed isolatedly the equipment, illumination, air conditional, blower exhaust, etc.

- **Voltage Regulator:** A voltage regulator is used for protection against any variation and transient coming from the power line so that it will provide a better performance of your equipment. The regulator should provide at least 30% more power than the equipment consumes. It is recommended using an electronic kind regulator, microprocessed, with a perfect senoidal output, and an isolator transformer for the entrance.

- **Grounding:** All the equipments must be connected to the main station ground system but isolated from the wall, protecting it against electrostatic discharges, lightning strikes, etc. Grounding should be 5 Ohms maximum to have an adequate protection. Ensure that the following items are connected to the main ground system:

  - Tower base;
  - Lightning rod;
  - Neutral wire;
  - Power supply ground;
  - All the equipment grounds such as power board, voltage regulator, etc;
  - Broadcast Antennas, coaxial cable and transmission line.

If you have any doubts about the station ground system quality, a specialized company should be contacted.

- **Lightning Rod:** Its use on the tower is vital and a distance of 2.0m between the last antenna and the lightning rod should be preserved.

- **Ambient Temperature:** the ambient temperature must not exceed 25°. If it is not possible, the use of an air conditioning system should be considered. The air conditioning system should be able to keep the ambient temperature 25° maximum with full power operation of the equipment. The blower exhaust must also be installed in order to reduce the ambient temperature at the same time the power consuming of the air conditioning system reduces.

- **Humidity:** The relative humidity of air must not exceed 80%. If it is not possible, the use of an air conditioning system will be necessary.

- **Antennas and cables:** Pay a careful attention to the quality of coaxial cables and connectors that will be used in the system; the maximum curvature of coaxial cables must be respected; avoid loose connections.

## 1.4. Installation:

First time start-up procedure:

1. Verify the power line supply and the voltage regulator output. For 220V or 380V you have to use a three phase voltage Y or Delta connection, respectively;

2. Connect the transmitter RF output (on the top of the transmitter) to a 50 ohm antenna or dummy load. Pay attention to the maximum curvature of the coaxial cables that are being used;

3. If the equipment has an audio and video modulator, connect the video signal to the video input jack 75 ohms and the audio signal to the audio input jack 600 ohms balanced located at the top of the transmitter;

4. If the equipment is a retransmitter, connect the Booster converter output to the IF input jack;

5. Connect the ac input at the rear of the equipment. It is recommended using a power cable feed 10.0mm;

6. Reduce the IF level from the audio and video modulator by turning its control counter-clockwise. For retransmitters, The IF level control is located at the front panel of the Channel converter. For Dual Driver Equipments, repeat the process for both Driver A and B;

7. For Dual Driver equipment, place the AUTO/MANUAL selector switch to the MANUAL position, and the PREF. A/PREF. B selector switch to the PREF. A position;

8. Disconnect all 650W amplifiers # modules;

9. Turn on the equipment by pressing the main switch at the front panel of the channel converter and at the right superior panel of the equipment. For Dual Driver turn on the main switch of channel converter “B” also;

10. Ensure that all the voltage supplies (at the Amplifier # modules connector) from each 650W amplifier module are ok;

11. By this time, only the “A” Driver will be running;

12. Check all the voltage supplies and the local oscillator of the channel converter against the equipment test list;

13. Check the Blower system. If it is rotating incorrectly check again the incoming phase voltage;

14. Turn off the equipment and reconnect all amplifier # modules. Ensure that the IF level is at its minimum level;

15. Turn on the equipment and check again all the voltage supplies;

16. Ensure that the SIGNAL, SUPPLIER “A” TEMPERATURE, SUPPLIER “B” TEMPERATURE, LOAD TEMPERATURE, FILTER REFLECTED POWER, ANTENNA REFLECTED POWER, PHASE LOSS alarm LED’s are off, otherwise contact our representative;

17. Place the selector switch of the superior panel to the Video Signal position. Increase it slowly by turning the IF level control clockwise. Observe the Reflect power alarm LED at the front panel. If it lights on, turn off the equipment and check the antenna connections one more time;

18. It is recommended to increase the IF level for a reading of 50% on forward power level at first. Follow the 19, 20, and 21 steps and let it running for a while. If everything is ok increase the IF level for a reading of 100% on forward power level and repeat the following steps;

19. By increasing the IF level, the Forward Power LED’s of each amplifier # module will turn from red to green;

20. In the meantime, monitor the REFLECTED POWER, FORWARD POWER, CURRENT, and VOLTAGE SUPPLY levels, constantly;

21. Place the selector switch on the superior panel to the Reflect Power position. Check if it does not exceed 1,5:1. If it exceeds, check the antenna connections again;

22. Observe the Temperature alarm LED's of each 625W amplifier # module. If it lights on, turn off the equipment and check again the ventilation system and the ambient temperature;

23. For dual driver equipment, place the PREF. A/PREF. B selector switch to the PREF. B position;

24. By this time, only the "B" driver will be running. Repeat the 12 to 22 steps;

25. Place the AUTO/MANUAL selector switch to the AUTO position. This procedure is recommendable for the equipment to commute automatically between "A" and "B drivers if one of them fails;

26. If everything is ok, check the video image at your TV monitor.