

AM/MEDIUM WAVE ANTENNA TUNING UNITS

*Engineered to Bring Your Radio
Facility into the Digital Era!*



From **LOW POWER**
(1-50kw)

To **MEDIUM POWER**
(100-300kw)

To **SUPER POWER**
(500-1,000kw)

**KINTRONIC LABS OFFERS WORLD CLASS RF MATCHING
NETWORKS DESIGNED TO YIELD WIDEBAND PERFORMANCE
COMPATIBLE WITH IBOC* OR DRM** TRANSMITTERS.**

* In-Band On-Channel Digital Audio Broadcast (US Standard)

** Digital Radio Mondiale Digital Audio Broadcast (International Standard)

NOTE: Not all antenna configurations can be made IBOC/DRM compatible.

KINTRONIC  **LABS**



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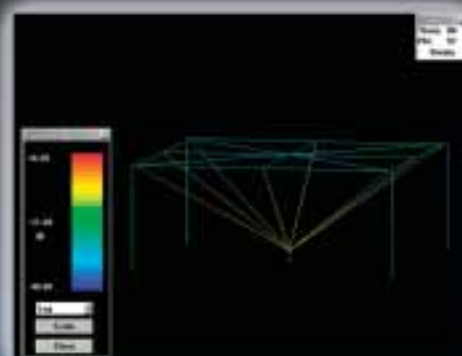
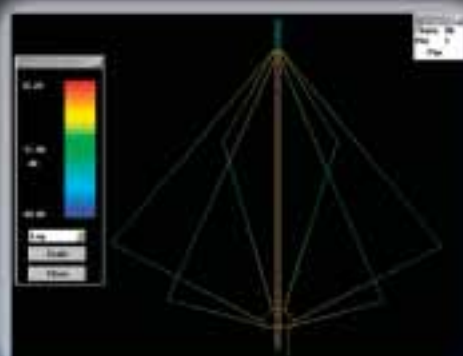
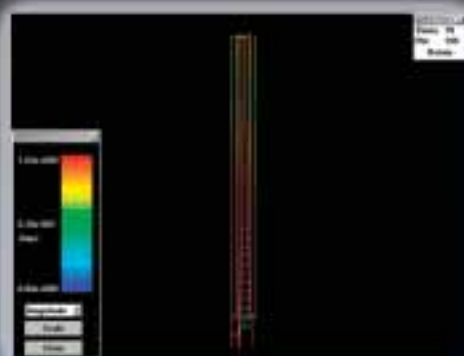
1. CHARACTERIZATION OF THE RADIATING MAST

A. Scenerio No. 1

- a. Mast and Ground system previously existing.
- b. Measured impedance sweep data is available or can be obtained.

B. Scenerio No. 2

- a. Customer supplies complete dimensioned details of radiating mast with accompanying drawings if possible.
- b. Kintronic Engineering staff develop a geometric model of the radiating structure from which the nominal drive impedance data may be derived.



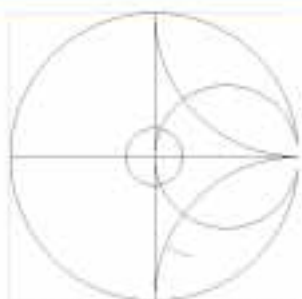
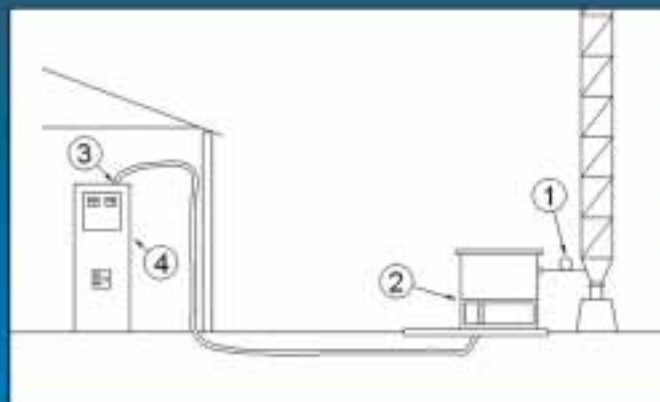
Kintronic Labs has the capability of modeling any type of radiating structure.

2. NETWORK DESIGN

A. Design Goal

To transform the mast drive impedance sweep into the optimum impedance locus at the transmitter RF final as specified by the manufacturer.

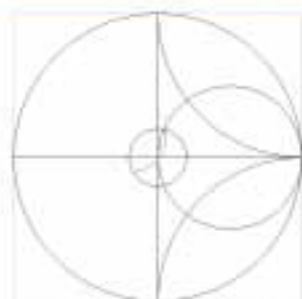
Digital transmission requires a maximally flat symmetric sweep for peak performance.



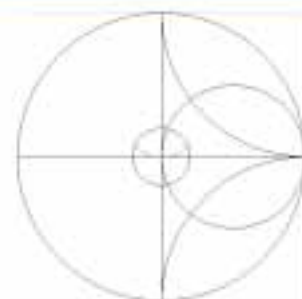
1. MAST DRIVE IMPEDANCE



2. MATCHING NETWORK INPUT



3. TRANSMITTER OUTPUT

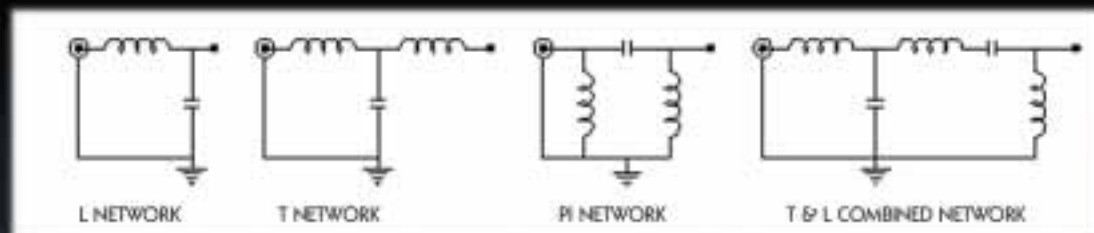


4. RF FINAL

ENGINEERING & FABRICATION

B. Network Design Using Synthesis Software Developed by Kintronic Labs

OPTIONAL NETWORK TOPOLOGIES



With over 50 years of antenna system design experience and a customer base that spans the globe, Kintronic Labs offers innovative state-of-the-art solutions that will yield reliable service for many years to come.

3. NETWORK IMPLEMENTATION

OPTIONAL MATCHING NETWORK CONFIGURATIONS



Installed in KTL Prefabricated Building



Aluminum Weatherproof Housing On Optional Support Stand



Indoor Open Panel and Shelf



Floor-Mounted Indoor Cabinet

Standard Equipment Shelf

4. MATCHING NETWORK FEATURES

The standard features of Kintronic Labs' Tuning Networks have become the industry standard. Optional features and flexible manufacturing methods allow each unit to meet the custom requirements of a particular installation.

Standard and optional features are listed on the reverse. Contact Kintronic's engineering staff for your custom requirements.



AM/MEDIUM WAVE ANTENNA TUNING UNITS

DESCRIPTION

In general these units are located near the base of the tower. Each unit is custom designed to provide coupling between the transmission line and the antenna. Typically a full "T" network is utilized. Components are conservatively rated at specified power level (1 KW to 1 MW+) to provide long life under 125% modulation conditions and a range of impedance tuning to meet any normal deviation in field installation conditions. The best grade of commercial components are used in the construction.

STANDARD FEATURES

- All Aluminum weatherproof housing or open panel and shelf construction.
- Cornell-Dubilier Mica or Comet & Jennings vacuum capacitors are used as required.
- Fixed and Variable High Q Inductors utilizing silver plated windings are standard for transmitter power levels of 1-150kW. For transmitter power levels of 200kW or higher, a clear conductive coating is applied to the inductor windings.
- All interconnections between components are made with either silver plated copper strap or tubing, or with copper tubing treated to minimize tarnishing.
- J-Plug Jack with grounding posts and space for bridging equipment at input and output of the unit.
- Removable and stowable support shelves to facilitate impedance bridge and receiver/generator equipment usage.
- All grounded components and transmission line clamps are connected on a common ground bus of copper strap which extends through the floor of the cabinet to a special connector to accommodate the strap from the antenna ground system.
- Input connection EIA flange adaptors or transmission line clamps which eliminates the requirement for foam filled cable end terminations.
- Insulating feed through bowl with variable horn gap. Solid or optional hollow stud for antenna feed.
- Only non-ferrous hardware is used for long life.
- Key lock provided on front hinged or liftoff doors. Screen vents in bottom and under eaves of housing to provide air circulation.
- Mounting flanges with 1/2" mounting holes are provided on the rear of the box for typical mounting on two vertical 4"x4" wooden posts or steel pipes set in concrete.
- Static drain choke for base insulated towers.
- Dual 115 VAC GFI convenience outlets and switch controlled light.

| Power Level | 1 KW | 5 KW | 10 KW | 12 KW | 50 KW |
|------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|
| Dimensions (w x d x h) | 36" x 24" x 32" | 40" x 27" x 35" | 60" x 30" x 35" | 72" x 30" x 40" | Depends on Design |
| Estimated Gross Weight | 120 lbs | 155 lbs | 210 lbs | 260 lbs | 800-1500 lbs |

Dimensions and Estimated Weights For Standard Units Specific Size and Weight dependent upon unit details

ACCESSORIES

- Weschler thermocouple RF current meters with meter plug and parallel J-Plug and shorting bar. Make before break meter switch arrangements are also available. Meter window included.
- Delta Electronics toroidal base current meters, with remote output pre-wired to terminal block for easy connection in the field. Meter window included.
- Remote antenna current sensing unit for independent remote sampling when using thermocouple meters. Intended for use with remote DC milliammeter or to directly feed remote control system.
- Integrated support stands for mounting on existing concrete pad.
- Lighting chokes, isolation inductors, or isocouplers.
- Custom cabinets in place of standard sized housings for special requirements.



Optional Painted Aluminum Support Stand

WHEN ORDERING, PLEASE SPECIFY:

- ✓ Frequency, Transmitter Power Level, Input Impedance, and Maximum Modulation
- ✓ Measured Antenna Impedances At Carrier and Sidebands or A Detailed Description of the Tower Including Height And Face-Width And Skirt Geometry If Applicable.
- ✓ Requirements For Lighting Chokes, Isolation Coils, or Isocouplers Across Base Insulator.
- ✓ Manufacturer, Type and Length of Transmission Line.
- ✓ AC Voltage Supply If Other Than Standard 120VAC, 60Hz US Standard.
- ✓ Any Special Features Required or Limiting Constraints.

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