

## Proposed Information Station Bid Specifications v2

Shall operate according to Federal Communications Commission (FCC) rules, Part 90.242, with the following requirements:

- Capable of achieving maximum FCC signal level of 2.0 mV/m at 0.93 mile.
- 530 to 1700 kHz synthesized AM frequency, programmable.
- Has ability to broadcast in newly-allowed 5000 Hz bandwidth audio

Overall system capabilities shall include . . .

- Internal capability for hundreds of broadcast messages (on existing PC). Includes recording and editing software. Minimum 20-minute broadcast cycle time.
- Ability to allow broadcast programs to be updated via standard Ethernet networks or via USB port backup.
- Includes software for broadcast message recording, processing, archival and (possible future) uploading message playlists via LAN/WAN to radio station.
- Effective range of at least three to five miles, minimum
- Equipment package to include all electronics, mounts, cable, wiring and connectors, including complete antenna system including factory-assembled antenna groundplane.
- Equipment enclosure shall be single-door rack cabinet for access ease and service. Can be wall mounted.

The system shall operate on these utilities:

- 110VAC, single phase/50/60 Hz, less than one amp AC operating current, (20A breaker, non-GFI circuit).

The equipment array shall include . . .

Transmitter:

- Transmitter must support full 5000 Hz bandwidth audio. Optional processor to increase stations' audio quality, intelligibility and range.
- 0-10 watt , Class D, high efficiency output; internal components rated to three times operating wattage, utilizing 2 output devices.
- Integral LED wattmeter and VU meter.
- Synthesized frequency selection, compander-style audio processing.
- Single-board design with all RF, power and audio circuitry.
- Reference input for carrier synchronization.
- FCC type accepted for travelers information service in the United States; type acceptance year no earlier than 1999.
- Approved for US Military use on frequencies 510-530 kHz, 1610-1700 kHz.

#### Antenna and groundplane system:

- Must include written documentation of safe RF exposure distance per ANSI/IEEE C95.1-1992 standard by a professional engineer (PE).
- Yard and isolated antenna installation-style options with factory-assembled vertical-profile antenna option (no groundplane or chemical ground rods), includes aluminum pole and copper grounding element for installation in 6" diameter hole, 6 foot depth. Integral lightning arrestor, internal pole wiring with no wire or conduit on pole exterior.
- Whip-style antenna 15-25' long; maximum 2.0" OD, tapering to 0.5"; anodized aluminum construction; stainless-steel tuning tip. Black color to discourage icing. Architectural anodization process #801 to prevent color fading.
- All hardware and mounts.

#### Lightning arrestor system, enclosure and ground bus:

- Provided in a weatherproof NEMA4 cabinet, arrestor bonded to an aluminum panel that supports the lightning grounding and groundplane connection clamps.
- Capacity of 18,000 amps surge.
- Clamping speed of less than 4 nS.
- 2 UHF connectors.
- Aluminum flange ground connection.

#### Digital Message Player:

- Memory format: "Flash" - no battery backup required.
- Audio outputs: 8 or 600 ohms.
- File format: MP3. (64-128 kbps recommended).
- Auto reboot on power outage.
- Optional audio management software, PC microphone and headset (software not required for message transfer function).
- Compatibility: Windows or Mac-based computer.
- Power: 12VDC/800 ma.
- Local operation via USB:
- Memory storage: external - limited by flash drive capacity
- Message loading: removable USB flash drives; 6 provided; drag-and-drop MP3 messages from PC USB port.
- Up to 1,023 messages, auto rotation.
- Message sizes: variable.
- Message order: continuous sequential message play based on file loading order.
- Remote operation via network:
- Ethernet (RJ-45 Port).
- Audio upload via LAN/WAN.

- Memory storage: internal – single 20MB (21 minute) message.
- Built-in GUI that allows audio file upload, assignment of static IP settings.

Weatherproof Enclosure ( to be wall-mounted in protective radio shed provided by buyer )

- Weatherproof, gasketed, NEMA-4 steel construction.
- Wall mountable (includes wood pole mount).
- Back panel with wiring harness
- Includes AC-terminal block and power-surge arrestor.
- Pad-lockable design, 36"H x 24"W x 8"D size.

Surge Arrestors:

- High speed, high capacity power, telephone-line and RF surge arrestors.

Test equipment:

- Independent wattmeter and dummy load for antenna tuning and system diagnosis; Portable, battery operated Signal Measurement Radio (SMR) Receiver for measurement and documentation of on-air signal levels to verify compliance with FCC rules. Features LCD display with two-digit signal intensity reading, audio quality monitor, digital tuning.

All necessary wiring, cabling, connectors, mounts and hardware.

The vendor must provide . . .

- Site choice and planning services (remote)
- FCC signal-study services.
- Electronic Installation services. Buyer shall contract for preparation of the transmitter site (excavation, conduit, cable/pole installation, attachment of cabinet to interior shed wall, provision of electrical services to shed/cabinet, etc) separately and may, at its option, integrate the separate site preparation contract with the successful bidder's contract.
- Onsite training.
- Illustrated instruction manual with installation, operation and maintenance sections, diagrams and drawings.
- Remote technical support and interference notification service for the life of the station.

Vendor is not required to provide . . .

- Custom drawings or engineering studies, soil/ground tests and local permits for installation.

The vendor must include with bid:

- Documentation that the company has provided similar systems successfully under the same company name for minimum of ten years and must provide the names and contact information of at least one client whose system has been installed for a similar application within the past year.

