

DESCRIPTION

The bidder shall furnish an RS-232-based coaxial RF cable modem, capable of data rates between 1,200 and 19,200 bits per second, working in either synchronous or asynchronous modes. The modem must be compatible with a 75-ohm, bidirectional CATV system containing standard components (i.e. splitters, taps, bidirectional amplifiers, etc.). The system amplifiers used have a rated outbound (from the Traffic Control Center to the field units) frequency range of 5 to 30 MHz, and an inbound range (from the field units to the Traffic Control Center) of 50 to 300 MHz. The entire frequency band is not available and exact modem frequency ranges will be discussed below.

FREQUENCY REQUIREMENTS

Each unit must be programmable to operate over a low frequency range of 5 MHz through 30 MHz, and a high range of 161 MHz through 257 MHz, with channel spacing of 50 kHz or less, programmable in 25 kHz increments. All units must be able to be programmed to transmit or receive in either the low or high band interchangeably (allowing the same modem to act either as a head end unit or a field unit). The frequency ranges quoted are minimums; units that exceed these ranges would be acceptable.

NOISE ENVIRONMENT AND MODEM LEVELS

The modem must be able to operate with a bit error rate of 1×10^{-9} or better with a carrier-to-noise ratio of 26 dB over a 30 kHz bandwidth around the carrier frequency. The modem must be able to operate with inputs over the range of -5 dBmV to -25 dBmV.

ENVIRONMENTAL REQUIREMENTS

The modem will adhere to the environmental requirements of NEMA with the following modification: The temperature range specified in NEMA will be replaced with the following -20 degrees C through $+74$ degrees C (-4 degrees F through 165 degrees F).

OTHER SPECIAL REQUIREMENTS:

RTS/CTS delay time: Programmable RTS/CTS delay time between 1 and 10 milliseconds in 5 millisecond (or less) increments. Include the option of selecting a CW carrier as well.

COMPLIANCE:

Modem will comply with the terms of “**Item 101.999020 Special Requirements Section 6 – County of Monroe Specifications – Electronic Equipment**”. Terms of this specification may modify or supersede the terms of Item 101.999020. Modem must meet the requirements of “FCC Part 15 Paragraph J Class “A” VDE 0871 EN55022, BS6527” and “UL 1950”

MATERIALS**CONNECTORS:**

- External RF Connectors: standard 'F' connectors.
- Power Supply: If an external power supply is used a reliable connector with positive latching that will not be subject to loosening due to vibration shall be used to connect DC power to the modem such as: Lemo Plug FGG.OB.302.CLAD 42 combined with an EPG.OB.302.HLN Socket. If an external power supply is used one spare power supply will be included for each ten units ordered (the cost of any spare parts required to be supplied should be factored into the per/unit cost). The power supply AC power cord, shall be a 3 conductor cord with a three-prong (earth-grounded) plug. Switched-mode operation is preferred.
- EIA 232- data connector: 25-pin female 'D' connector.
- EIA 232- programming connector: 9-pin female 'D' connector.

EQUIPMENT**MODEM PROGRAMMING:**

Modem settings, such as frequency, data framing, and transmit power, etc., shall be programmable utilizing the standard RS-232 connector of a personal computer running a standard terminal emulation program. An example is "HyperTerminal" running under Windows 98.

DIPLEXOR:

Any external diplexors or any splitter/combiner components required to connect the modem to a single cable connection will be supplied, and the cost included in the cost of the modem. (1) One spare diplexor should be provided per every ten modems ordered (the cost of any spare parts required to be supplied should be factored into the per-unit cost).

DIMENSIONS:

To accommodate existing control system cabinetry, the overall dimensions of the modem case shall be 12" deep by 8" wide by 1.75" tall, +0.00", - 0.10", including diplexor, RF, data and power cable connectors.

BASIS OF PAYMENT

Payment for each modem shall be for the measured quantity at the contract price per each. The unit price shall be full compensation for furnishing, labor, transport, tools, equipment (as specified), and incidentals necessary. Lump sum payment of the contract price shall be paid upon satisfactory functional testing by Monroe County, which shall be completed within five (5) working days after delivery to Monroe County's site.

Payment will be made under:

<u>Item No.</u>	<u>Item</u>	<u>Pay Unit</u>
C686.8000	Coaxial Cable Modem	EA