RF Modem

RF Modem (KHP-RM1)

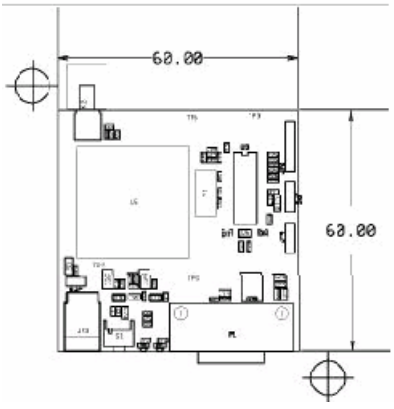
Kaihatsu Techno Centre Pvt. Ltd. is engaged in designing and development of Supervisory Control and Data Acquisition (SCADA) software.

While deploying the software, it was noticed that there is a need for various small hardware interface units. They are mainly needed because of the fact that each instrument needs to communicate. The communication need to be established between the two instruments or between the instrument and data collecting machine (Computer).Many a times it is very difficult to put down the communication cables because of distances, or hazardous environment.

One such product in this basket is RF Modem (Radio Frequency Modem). It can be used for point to point or single point to multi point configuration. The multi point hopping is also possible to increase the distance. Following are the features offered:

- **RS 232 Input**: These modems are for data communication. The input is standard RS 232 D shell 9 pin connector.
- **Radio Frequency:** The Modem works for 300 MHz to 1.2 GHz frequency. This frequency is software selectable. For better performance, the used has to give the band during the order.
- **Microcontroller Based Design:** The design is totally Industrial Standard Microcontroller based. The various input parameters are programmable to trans-receiver registers.
- **Adjustable Gain:** Automatic Gain adjustment for various signal level conditions.
- **High Sensitivity:** The receiver section has 104 µV sensitivity.
- **Variable Transmitting Power:** Software controlled transmitting power up-to 10 mW
- **Long Range Distance:** With the internal PCB antenna, these devices can communicate for 100 meters but with external antenna, (6dB), they can communicate up-to 5 Km distance
- **Data Security:** The data transmitted is encrypted for high data security.
- **Variable Baud Rate:** Depending on the bandwidth clearance from licensing authority, the bandwidth can be adjusted for maximum performance. This is a software adjustment. Modem can work from 75 bps to 19,200 bps
- **Ability for Hopping:** To increase the distance the point to point connection can be increased to multi fold by making hopping.
- **Easy Mounting:** Industrial Standard mechanical mounting on DIN Rail

Actual Modem



Mechanical Mounting

Technical Specifications:

- **Supply Voltage** : 9 V DC. (Other voltages available on request)
- **Supply Current** : 5 mA (Stand by) 15 mA (receiving) 40mA (Transmitting)
- **Max. Baud Rate** : 19,200 bps for all ports, One Stop, One Start, 8 Bit Data and No parity
- **Transmitting** : 50 Ω / 10 mW Frequency Shift Keying Modulation.
- **Receiving** : Sensitivity : -105 dBM (BER 10^{-3})
  Impedance : 26 –J 77 Ω
- **Frequency Range** : 300 MHz to 1,200 MHz (Time of ordering)
- **Hopping Channels** : 4
- **Hopping Rate** : 10 Hops per second
- **Channel Rejection** : Adjacent channel 45 dB (200 kHz separation)
- **Transmission** : Asynchronous with LEDs on both Rx, Tx lines.
- **Environment** : Temperature: -20°C to + 65°C.
  Humidity: 0% to 95%
  IP 61 casing can be provided

In India, the use of Radio Frequency is controlled by Central Government controlling body (WPC). To use these devices, one needs a prior approval from Government. A demonstration and the use can not be arranged without user having a permission to use the frequency and power. Before ordering of these devices in India, please get the approval for the frequency and the bandwidth. Based on this approval, the modems will be tuned. Once tuned modem can not be altered.

For other countries, please obtain the permission from local authorities for approved frequency, bandwidth and power before ordering.

Kaihatsu will not be responsible and will not have any liability for using these devices without proper approval.

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