

Technology Cooperation Office of the Presidency



International Department

By introducing the Bulletins of “Iran Technological Potential” provided by Technology Cooperation Office of the Presidency (TCO), we intend to encourage international cooperation aiming at sharing technological resources with others. We would put forward more publications of such bulletins in different arenas of science and technology in near future.

As a matter of fact, science and technology has a global nature rather than local or even national, so geographic boundaries has been crossed and as a result, exchanging ideas and maintaining joint research activities has become crucial to many scientists and researchers all over the world. In addition, developments of electronic communication tools as well as IT advances facilitate this process as never before.

The main objective of these bulletins is to improve the international community’s knowledge about recent advances of Iran capacities and capabilities in Science and Technology and to facilitate technological collaborations with other countries.

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**NRI** (Niroo Research Institute) of Iran started its activities in 1982. It has played a leading role in developing new technologies for Electric Power Industry ever since.

**NRI** is the major research organization affiliated to the Ministry of Energy of Iran.

**NRI** is performing the dual task of meeting the present and future demands of electric power industry, while making a better use of available resources, preserving the environmental and maintenance costs as low as possible.

**NRI** has invested considerably in providing adequate conditions to achieve its objectives. The main building and laboratories of this institute are located in the north-west of Tehran, in a block of land with about 140,000sqm area. Research activities are carried out in 6 various research centers, consisting of 18 technical research departments, using the facilities of 9 advanced laboratories.



**Sazgan Ertebat Eng.** is an RF/Microwave and Telecommunication design& manufacturing Company that delivers added Value RF/Microwave products and services.

Electronic development is done in house, implementation/manufacturing activities are done using highly experienced personnel and Subcontractors both local and abroad.

Sazgan Ertebat was founded on 1993.the company's personnel consists of highly experienced Rf/Microwave designers and dedicated subcontractors for mechanical design and some of manufacturing processes.

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### **Introduction:**

#### ***Wireless Radio Modem SEM:***

Wireless Radio Modem produced by Sazgan Ertebat Eng.Co benefits latest technologies in accordance with the latest world standards.

Wireless Radio Modem has various applications in lots of fields like oil, gas, power, electricity and etc.

Recently this product has been designed and produced for electricity remote terminals units.

Radio modems are composed of high quality new components with long life and high efficiency.

This product has really competitive production costs and in many aspects it works better

and faster than its foreign similar products.

**Sazgan Ertebat radio modem technical specifications are as follow:**

Freq. range	403-419MHz (Software Adjustable)
Channel separation	25 KHz
Mode of Operation	Half duplex
RF output power	1-5 watts (Software Adjustable)
Output Power stability	±0.5 dB
Carrier Modulation	FM
Receiver Sensitivity	-117 dBm fot SINAD=12dB
Transmission speed	4800-9600bps (Software Adjustable)
Data format	Asynchronous, serial and packet data transfer
Base band modulation	GMSK
Maximum Per	1*10 <sup>-2</sup> @-107 dBm input
Data interface	RS-232
Operation voltage	10.8~16 vDc
RF output Impedence	50 ohm
RF output Connector	BNC or TNC
Operating temperature	-15`c to +55`c
Front panel indicators	Power, RX, TX
Supported by	ETS 300-086 standard, ETS300-113
Coding	FEC, CRC-16, bit scrambling, packet interleaving



Remote Terminal Unit  
Model Number: SE56





RADIO MODEM  
SEM-400  
Technical Specification



شرکت مهندسی  
سازگان  
ارتباط

۸۸۷۶۶۶۰ - ۸۸۷۶۶۷۰

[www.sazganertebat.com](http://www.sazganertebat.com)

**Technical Specification of SEM-400 as;**

**Transceiver:**

Freq. range	403-419MHz
Channel Spacing	12.5/25 KHz

Number of channel	320
Frequency Stability	<+1 KHz
Method of Modulation	GMSK

**Receiver:**

Sensitivity	-108dbm
Co-Channel Rejection	-9.5
Adjacent Channel Selectivity	57
Intermodulation Attenuation	59db
Spurious Radiations	<-57dbm

**Transmitter:**

Carrier Power	0.5~6w
Carrier Power Stability	<+1.5db
Adjacent Channel Power	-70dbc
Spurious Radiations	<+36dbm

**Modem:**

Interface	RS232
Interface Connector	AT Connector
Baudrate	4800/9600
Data Format	Asynchronous data
Communication Mode	Half Duplex

**General:**

Operational Voltage	12Vdc+10%
Antenna Connector	N female
Size	20*13*5cm
Weight	1250gr
Temperature Range	-15~55°C

***Opportunities for cooperation:***

Sazgan Ertebat Eng Co. activities involved several production and research sections:

1. Research and designing of microwave in producing high frequency modules.
2. Producing wide band and searching antenna
3. Designing and production of different types of radio receivers
4. Manufacturing Radio Modems
5. Manufacturing Remote Terminal Unit (RTU)
6. Consulting about equipping dispatching terminals

Sazgan Ertebat Co benefits active commercial unit in importing various equipment and electronic-telecommunication components and automation.

Sazgan Ertebat Eng Co looks forward to establish cooperation with any interested company in the fields of joint research, marketing and production of this product.