LARS™

Long-Range Radio Alarm Systems for the Security Industry

System Description

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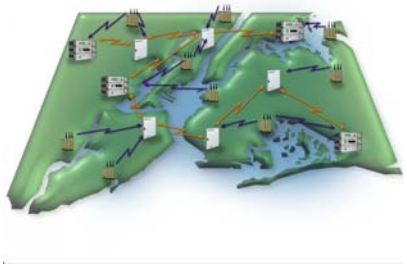
1 LARS™ Systems

1.1 General Description

LARS™ Central Monitoring Systems are high performance communication systems. They provide wide-area radio coverage for receiving alarm messages from protected sites and transmitting them to a Central Monitoring Station (CMS) by radio. Optionally, systems can include a sophisticated measurement tool for real-time system management and discrete signal strength measurement.

LARS™ systems require at least one dedicated radio frequency (RF) channel for data transfer in the following bands: **VHF 136-174 MHz** or **UHF 403-512 MHz** with 12.5 kHz or 25 kHz channel spacing.

LARS™ SYSTEMS

LARS I™	Guarding Towns and Wide Geographic Areas	
LARS NET™	Large Urban Areas	

1.2 Equipment

Systems include three types of equipment:

- Central Monitoring Station Units
- *Store & Forward* Repeater Network
- End-Units

Central Monitoring Station Units

- Receive, decode and process alarm, maintenance and open/close messages directly from end-units or via Repeaters.
- Interrogates Repeaters and two-way transceiver end-units.
- Records and displays signal strength of incoming messages.

Store & Forward Repeater Network

- Extends area of radio coverage of LARS™ systems.
- Receives messages from end-units and other repeaters, briefly stores them, then retransmits them to the Central Monitoring Station. Repeaters measure the transmitted signal strength from each end-unit, and report via the EXR5000™ to the RCI5000™ which include signal strength measurment monitoring unit in the Central Monitoring Station. The Repeater Network is modular; extra Repeaters can always be added to enlarge a system. LARS I™ systems allow *multi-hopping* along a line of Repeaters over very long distances.

End-Units

Alarm transmitters and transceivers are installed as stand-alone units for dry contact to detectors or serial connection to control panels. End-units can be easily configured to meet various levels of user requirements.

Standard Equipment

Provided as standard:

- Central Monitoring Station and Repeater Units: Internal rechargeable 12 VDC batteries for backup in case of AC fail condition.
- Two-year factory warranty on all KP products.
- Training in equipment installation, operation, and troubleshooting required by Central Monitoring Station operators and local technical staff

2 System Description

Following is a description of LARS™ Systems components:

- Central Monitoring Station
- Repeater/s
- End-Units

2.1 Central Monitoring Station (CMS)

Components:

- The Radio Communication Interface (RCI5000™) and the EXR5000™ transceiver are the two main components of the CMS.
- CMS Software, SAMSON™, displays incoming alarm messages.
- Backup RCI5000™ and EXR5000™ units are recommended for system redundancy.
- All software is suitable for operation on Windows operating systems.
- A digital telephone line Receiver can be easily incorporated as part of the CMS.

2.2 Central Monitoring Station Components Description

RCI5000™ - Radio Communication Interface

The RCI5000™ provides a reliable and robust means of centralized control and monitoring for medium to large scale projects. It receives, decodes and transfers messages to complementary software (SAMSON™) offering fully automatic functionality from a single location.
The internal construction of a synthesized radio and high speed processor offers the best long-range wireless solution for a control centre.

DTRCI5000™ – Desktop Radio Communication Interface

A compact, easy-to-install, radio transceiver interface with multifunctional capabilities that complement KP's radio control monitoring systems and networking equipment.
No better way to undertake control and monitoring jobs using cost effective, practical equipment that exceeds the market standards.
The DTRCI5000™ features and benefits offer reliability and quality in a complete package.

EXR5000™ (BSR100 - UHF) – External Radio

The EXR5000™ high performance base station radio transceiver is the heart of a modern radio monitoring and control system. It offers durable and unbeatable functionality.
Keeping in line with KP's modular system designs, the EXR5000™ is an essential unit to central stations enabling greater and better radio reception. The larger the system, the greater the need for strength making the EXR5000™ a perfect companion.
The EXR5000™'s benefits and advantages make this unit stand strong under any condition.

SMR5000™ – Repeater

Repeaters are essential for expanding the area covered by LARS™ Long-Range Radio Alarm Systems. Repeaters provide the systems with communication infrastructure. Adding repeaters to an existing system is modular and unlimited. In addition to the *Store and Forward* feature and smart network communication management, Repeaters act as independent units, automatically reporting their status.

Status messages sent by the Repeater:

- Test
- Low-Battery
- AC Fail

There are three options for end-units:

1. Alarm Transmitter for Local Installation
   Ready-to-mount housing is suitable to most alarm panel manufacturers
   Optional ¼-wave antenna and metal flange
2. Housed Radio Alarm End-Unit
   Housed in wall-mount metal enclosure equipped with the following:
   Rechargeable 12 VDC battery charger
   Mountings for batteries
   Tamper switch and ¼-wave antenna
   12 VDC rechargeable batteries, optional
   Optional DC solar power unit
3. Housed Radio Alarm End-Unit with Alarm Panel
   Ready-to-mount housing combines a KP radio alarm unit with an alarm panel from one of a number of manufacturers
   Connection is either serial (via the DI100 interface) or by dry contact
   Optional keypad for alarm panel

Power Output

VHF units—5 or 9 watt
UHF units—2 watt

Programmable parameters:

Unit address
Periodic test
Input polarity
Frequency
Number of signal repetitions
Automatic *low battery* message
Power output (on 9 Watt models)

IATS100™ – Synthesized Two-Way VHF Radio Alarm Transceiver

- Operates on VHF frequencies (see ATS100™ for low and high bands and features)
- Two-way unit receives acknowledgment of each message from the RCI5000™

Can be interrogated by the RCI5000™ to verify status

IATSU100™

Synthesized Two-Way UHF Transceiver

As IATS100™ for UHF frequencies 403-510 MHz

ATS100 F™ – 2 or 5 watts Synthesized Transmitter for fire alarm detection and signaling systems with transmission ranges of up to 30 km.

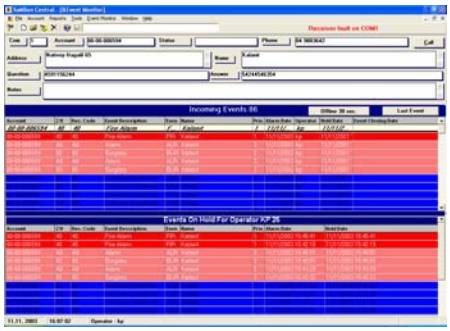
An integral control module with 8 discrete inputs allows up to 8 smoke or fire detectors to be connected directly or through any existing fire panel.

Parameters can be programmed "on site", via the RS232 of the ATS100F™, using a laptop or KP's FTU100™ handy programmer.

The ATS100F™ transmits unique alarm, trouble and restores codes for each zone, programmable periodic test and low battery messages. An internal 12VDC power supply keeps the unit alive during AC fail.

ATS100F™ conforms to ETSI/CEPT standards and is UL pending.

SAMSON™ – Security Monitoring Software



SaMSon™ Security Monitoring Software is a high performance monitoring and alarm application designed for quick response to alarms and events, increasing your efficiency and adding value to your system.

SaMSon™ helps central station operators and security providers manage their incoming events and customer information, ensuring that the complete monitoring process is trouble-free.

By using latest technology combined with a practical design, SaMSon™ provides superior control of the situation.

ACCESSORIES

ANTENNA	Omnidirectional Antenna	• 3-6 dB gain (P/N according to frequency and gain needed)
LAR001	Lightning Arrestor	
ANF001	Band Pass Filter	
CAKX001	RG213Cable from Antenna to LAR001 (30m length)	
CAKX002	RG213 Cables (2m length)	Connect between: • LAR001 and ANF001 • ANF001 to EXR5000™ (or RCI5000™ with radio)
DI100T™	Dialer Interface Card	• Enables transfer of up to 256 panel codes/zone information by radio and telephone line • Connects directly on tel. dialer output of the panel

2.2.1 End-Unit Programming

End-Units include the following programming components:

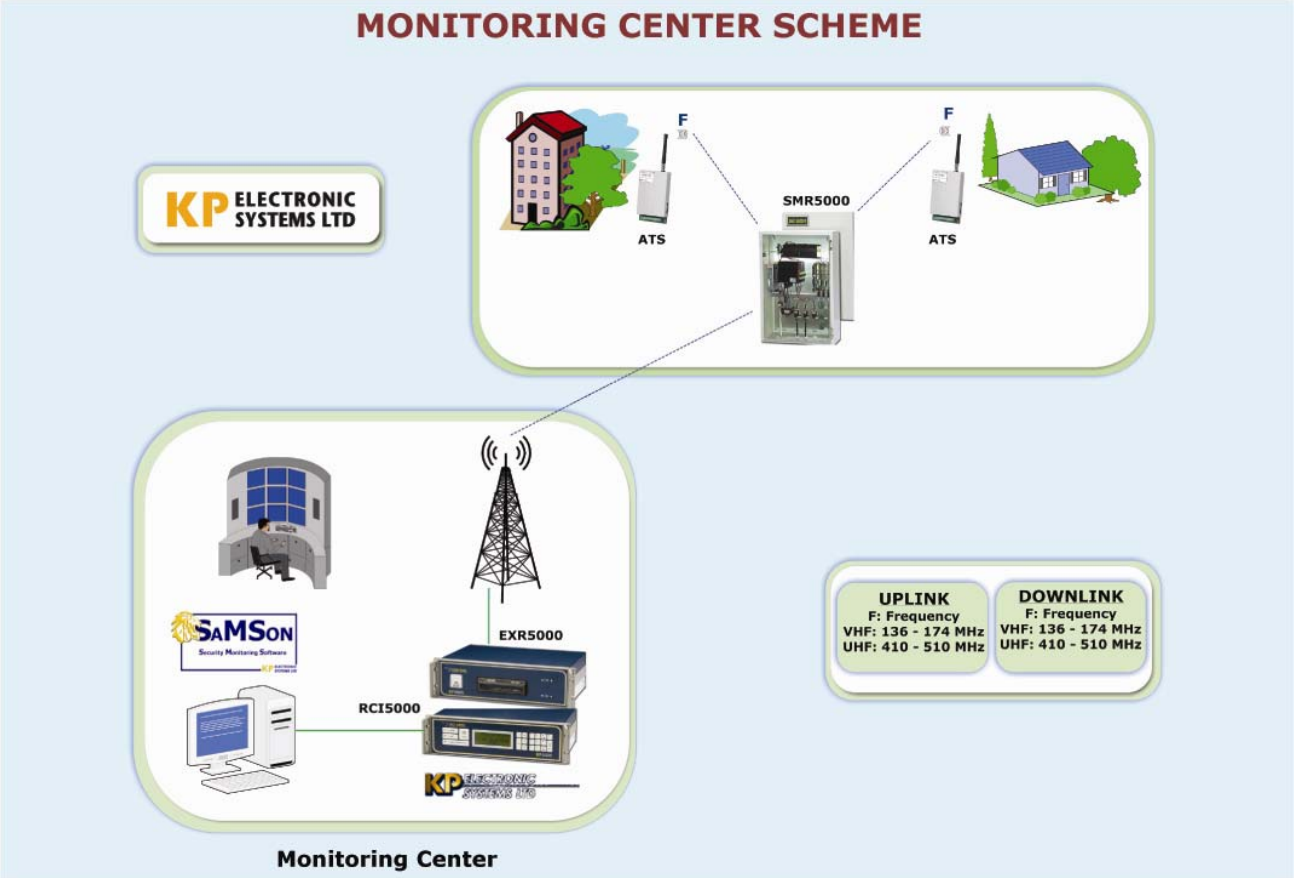
- FTU100™: The Field Programmer Unit is a pocket-sized programmer with keypad and LCD display. By connecting the FTU100 to the serial port of the ATS100™ or IATS100™, key parameter values can be determined or changed on site, including unit address, input polarity and periodic test timing.

- GUP™: Dedicated Utility PC Software programs all ATS100™ parameters, including the radio frequency and mode of message repetition.

- RSINT™ Adapter: Connected between the PC and the ATS100™ or IATS100™ unit to enable programming of the end-unit using the GUP™ Utility Software. The following communication parameter values can be programmed or modified:
  - Number of words in a burst
  - Data repetition
  - Periodic test messages
  - Transmission count scale/delay
  - Radio Frequency
  - Installer code

2.2.2 On-Site End-Unit Signal Strength Measurement

FTU101R™, Field Test Unit, includes a built in receiver unit tuned to the relevant frequency, this unit measures and displays the signal strength of ATS100™ transmissions, as received from the nearest Repeater.



3 System Installation and Commissioning

System installation and commissioning is available from KP. A KP field engineer supervises and trains the installation team on site (five to ten days).

* Fees determined according to requirements

4 System Warranty and Maintenance

KP fully supports all of its systems, and all units manufactured by KP have a two-year warranty.

KP Warranty Service: All warranty service for KP products is performed in Israel. KP units requiring service must be sent to KP at the customer's expense. Repaired units are returned to the customer at KP's expense.

Non-KP Warranty Service: Warranty service for non-KP units is subject to the respective manufacturer's warranty.

5 Technical Support and Training Seminars

It is KP's policy to instruct and train its customers to a level enabling on-site installation and troubleshooting. In addition, KP offers technical courses* for our customer's technical and maintenance staff, including 4-5 days in Israel or in the target country.
*technical course fees determined according to requirements

6 Payment Terms and Delivery

Payment terms and conditions are agreed upon prior to order, or according to distribution agreement terms.

Most shipments are sent by airfreight, CIF destination port.

7 Delivery time

New Systems: Four to five weeks from receipt of payment/down payment and frequency details

Subsequent Orders: Three to Four weeks from receipt of order and payment/down payment (as applicable).