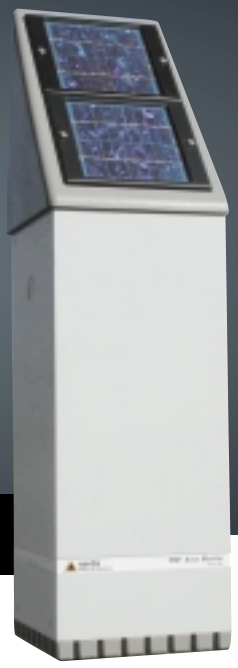
Remote Monitoring of Electromagnetic Fields

Narda Area Monitor System 2600



narda
Safety Test Solutions
an L3 Communications Company

General

The Narda Area Monitor System 2600 provides a complete solution for remote monitoring of electromagnetic field strength. With this powerful system fields can be permanently monitored at any desired location. A variety of different alarms are available. The system provides stable and reliable results even at very low levels. The control software allows fully automatic system operation with wide variety of user defined settings. Different conditions may be programmed to generate an alarm message to the system control center and/or to the responsible site- or safety-manager.
The complete system consists of one or more Station 2600 field monitors and the Software 2600.

Station 2600

The Station 2600 unit monitors the field strength over a wide frequency band. A variety of different full isotropic probes is available to meet the frequency and level range requirements of your application.

Data Acquisition and Memory

The actual field strength is continuously monitored. The time-averaging may be set according to common standards.
All results are internally stored for further processing. The oversized capacity of the memory allows a storage period of up to 18 months.
Programmable text “bookmarks” can be used to identify individual sub-sets of these results.

Alarm

A flexible alarm circuit permanently checks the field strength results as well as the Station’s status. Two field strength limits may be set independently.
Whenever an alarm condition is met the remote unit can automatically establish a link to initiate further actions.
The implemented SMS function allows direct calls to a set of predefined cellular phone users, e.g. to the safety- or site-manager. Also included is a daily result and status report for the Station 2600 unit.

Communication
The bi-directional link is provided via the GSM network. The communication protocol is optimized for reliable operation. Results are usually downloaded automatically and periodically, e.g. every 24 hours depending on the individual setting.
The maximum field strength in a given period of time may be sent to any cellular phone as a brief report.

Configuration
Various parameters of the Station 2600 monitor may be configured by the Software 2600. These settings include two different adjustable field strength thresholds, the detection mode, the average time and the internal memory storage rate. All messages from the Station 2600 may be enabled or disabled.
A sub-set of these configuration parameters may be directly set by any cellular phone via SMS messages.

Operation
The Station 2600 monitor operates autonomously. It is powered by a combination of solar panel and integrated back-up batteries. Typically the monitor will be mounted on a mast which is available as an accessory.

Software 2600

The Software 2600 provides full remote control of the system's operation. Programmable schedules may be set separately with each Station 2600 monitor for controlling the periodical data transfer.
After downloading the results a powerful display tool allows graphical display of every available result. Results acquired during GSM modem activities are high-lighted to avoid misleading interpretation.
Besides fully automatic operation of the system the user may query each monitor to download stored data manually or to monitor the instantaneous existing field strength.

Data Validation and Documentation
The integrated post-averaging tool allows calculation of an averaged result over 6 minutes based on the downloaded data.
Easy to operate zoom and marker functions allow a complete examination of the results. Diagrams may be printed and may be copied to different documents.
For further processing and presentation all information is stored in individual folders for every remote unit. Data may be easily distinguished by date or week at any time due to an implemented calendar feature.
Data may be exported to other applications, e.g. into powerful databases. Possible applications could include reporting and internet presentation (not included).

Configuration Section
The Software 2600 supports complete and individual configuration of every Station 2600 monitor integrated into the system. The set of parameters is included in the Station 2600 section of this datasheet.

Specification Station 2600

Field Meter / Result Memory		
Sensor	diode based, isotropic	
Frequency/Measurement Range	depending on probe	refer to order information
Detection Mode, selectable	· average · peak (extra) · X, Y, Z (extra)	update rate: 1 / second
Average Time, programmable	1 minute to 10 minutes	
Storage Rate, selectable	5 sec to 6 minutes	
Memory Capacity	45 hours to 18 months	depending on Storage Rate and Detection Mode selected
Alarm Section		
Alarm-criteria, selectable	· field strength exceeds -and/or- falls below thresholds · internal temperature high · battery low · probe malfunction · case open	dual field strength threshold, adjustable separately
Alarm Notification, selectable	· to cellular phone (SMS) and/or · to computer (data)	SMS: to a maximum of 10 cellular phones simultaneously Data: to one out of 10 computers
Data Section		
Data Download to computer, selectable	· automatic (periodical) · event triggered (alarm) · individual	scheduler programmable
Result & Status Report to cellular phone	· automatic (periodical) · individual	to a maximum of 10 cellular phones simultaneously, scheduler programmable
General		
Modem, implemented	GSM dual band	bands according to order information
SIM card	data-service: incoming, outgoing SMS-service: incoming, outgoing	note: not included with delivery
Power supply	solar panel, buffered by internal battery pack	on request: external power supply
Operating Time	7 days (approx.)	in darkness
Operating Temperature Range	-10°C to +50°C	
Self Test	· automatic during power on · periodically every 7 days	
Calibration Interval	24 months recommended	

Specification Software 2600

Configuration / Download Section		
Parameter Setting	· meter & result storage mode · alarm criteria & notification mode · scheduler · phone number · bookmarks, …	individual with each Station 2600
Download Management, programmable	· date, time · from last download, up till now · between bookmarks	refer to Data Section

Table continued on next page

Evaluation & Documentation Section		
Result Presentation	line diagram	
Special Feature	· marker · zoom · data highlighted if acquired during modem activity	
Export Format	· file: ASCII table · clipboard: bitmap	
Status Section		
On Screen Display	· alarm status	from last communication
	· battery voltage, solar energy	history of last month
General		
System Size	number of Station 2600 units unrestricted	
Result Database Capacity	restricted by computer hard disk's capacity	
Operating Language	English	
Hardware Requirements	Pentium processor, Microsoft® Windows®95 or above, 16 MB RAM, 10 MB hard disk, data modem	

Order Information

Item	order number
Narda Area Monitor Software 2600	**2600/01**
Narda Area Monitor Station 2600 including: GSM 900/1800 modem, solar panel, battery charger, operating manual, accessory note: SIM card required for GSM communication, not included with delivery	**2600/10**

Probe* (select one)

E-field probe Type 330	500 kHz to 3 GHz	0.3 V/m to 300 V/m	**2600/90.20**
E-field probe Type 309	1 MHz to 18 GHz	0.8 V/m to 800 V/m	**2600/90.22**
H-field probe Type 305	20 Hz to 3 kHz	10 nT to 40 µT	**2600/90.48**

*Other probes on request

Accessory (optional)

Fiberglass pole (height 2 meters), incl. base	**2600/91.01**

narda Safety Test Solutions
an L3 Communications Company

USA: Long Island, NY
Tel 1-631 231-1700 **Fax** 1-631 231-1711
E-Mail NardaSTS@L-3COM.com
www.narda-sts.com

GERMANY: Pfullingen
Tel +49-7121-9732-0 **Fax** +49-7121-9732-790
E-Mail support@narda-sts.de
www.narda-sts.de

NSTS 0302-202-1.0