

# GAMMA-AT

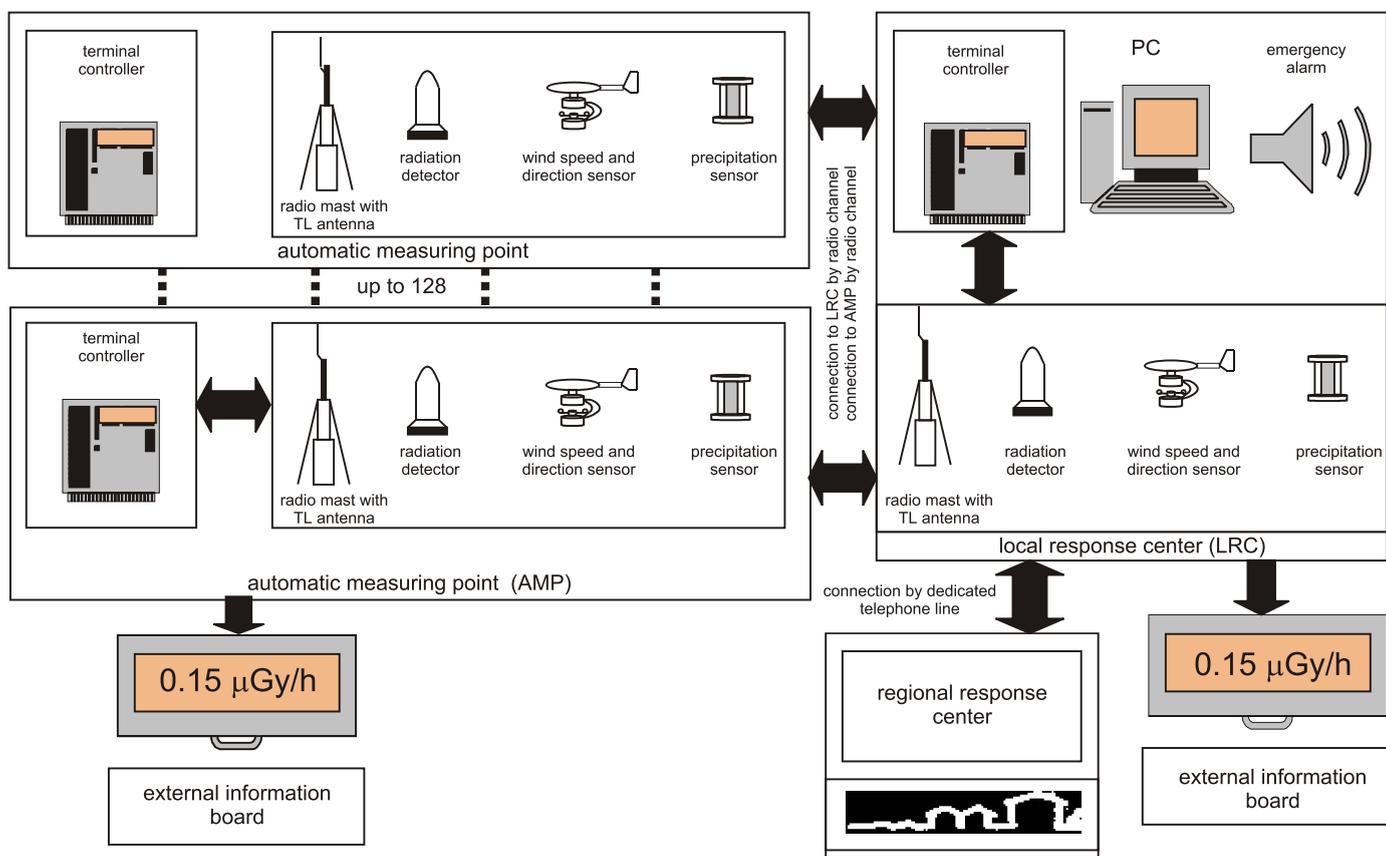
## AUTOMATED RADIATION AND WEATHER MONITORING SYSTEM

Flexible and reliable multi-channel system for environmental and area radiation monitoring of large radiation-dangerous and radiation-sensitive targets

From 1 to 128 measuring posts  
25 nGy/h - 10 Gy/h

### Features

- Gamma radiation smart probes
- Measuring in each channel within a wide dose rate range
- Specifying alarm thresholds for each smart probe
- Audible and visual alarm at threshold exceeding
- Reliable data transfer by telephone lines and radio channels
- Digital data retransmission
- Permanent indication updating every 10 min
- External indication board
- Uninterruptible power supply
- Full addressing diagnostics of equipment operability
- Independent information databases at each automatic measuring posts
- Calibration without demounting smart probes
- Wind direction and speed, precipitation and temperature sensors



**ATOMTEX**

INSTRUMENTS AND TECHNOLOGIES FOR  
NUCLEAR MEASUREMENTS AND RADIATION MONITORING

## Automatic measuring post (AMP)

Smart probe AT2343 provides absorbed gamma radiation dose rate measuring in the range from 25 nGy/h to 10 Gy/h. Two-chamber Geiger-Muller tubes are used as detectors. Data from a smart probe is transferred to a uniform terminal controller by RS 485. Wind speed and direction sensor, precipitation sensor and temperature sensor, external indication board can be connected to the terminal controller. It is possible to provide the terminal controller with a radio unit, a radio station, a radio mast with TL antenna and (or) a telephone unit taking into account communication channels in use. Applied software of automatic measuring post provides digital data forwarding, so it is possible to extend automatic measuring post network to big distances. The system supplies from an uninterruptible power supply. There are two operation modes: an economical mode for operation under normal environment and the mode with frequent data transfer for operation under emergency radiation surrounding. It is possible to create independent databases and maintain data keeping for more than a year due to the nonvolatile memory.

## Local response center (LRC)

Personal computer is used as the central control unit, which is delivered together with the terminal controller. Applied software runs under Windows and provides system configuration, data readout and its processing. There are a map of controlling area (target) and dose rate values in control points on PC display. Dose rate values can be presented as a table or a graph with value averaging for any time period. The processing algorithm detects a sudden dose rate change and switches the emergency operation mode as a result. Alarm threshold exceeding in any smart probe or failure of any system component are displayed on PC as color zones and accompanied by audible alarm. Acquired from smart probes dose rate results are kept in the database.

## Specification

<b>Number of detectors</b> in smart probe .....	6	<b>Operating temperature range</b> smart probes and open-air devices .....	-35 ÷ +50 °C
<b>Number of smart probes connected to automatic measuring post</b> .....	from 1 to 32	inside units .....	+5 ÷ +40 °C
<b>Number of automatic measuring post</b> .....	from 1 to 128	<b>Maximum distance between a smart probe and terminal controller</b> .....	1000 m
<b>Absorbed gamma radiation dose rate measuring range</b> .....	25 nGy/h - 10 Gy/h	<b>Radio channel communication range between automatic measuring posts at plain ground</b> .....	up to 30 km
<b>Smart probe sensitivity on <sup>137</sup>Cs</b> .....	15000 cnt/μGy	<b>Protection class</b> smart probes .....	IP57
<b>Gamma radiation energy range</b> .....	0.05 - 1.5 MeV	other units .....	IP54
<b>Energy sensitivity response respect to <sup>137</sup>Cs</b> .....	not more than +35 ÷ -25 %	<b>Radio disturbance</b> CEI/IEC CISPR 22:1997	
<b>Intrinsic relative absorbed gamma radiation dose rate measurement error</b> .....	± 15 %	<b>Electromagnetic compatibility</b> CEI/IEC 61000-4-2:1995 IEC 61000-4-3:1995	
<b>Interface</b> .....	RS 485	<b>Power supply</b> AC mains 220 (+22;-33) V; frequency 50 (±2) Hz In case of emergency power interruption accumulator battery 12,6 (+1,3;-1,6) V	
<b>Alarm 3-level visual and audible</b>			

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