EMS ENVIRONMENTAL MONITORING STATION

The General Atomics Electronic Systems, Inc. Environmental Monitoring Station (EMS) is based on a modular approach that allows flexibility for customization (through selection of desired instrumentation and/or options) for specific applications in monitoring outdoor radiation in an environmental or plant surveillance setting.

A “basic” EMS station includes such items as an environmentally-sound container suitable for housing the sensitive electronic equipment; meteorological equipment with a telescopic mast for weather-related instrumentation; a gamma dose rate probe installed on the roof of the container or fixed to the mast; an alpha and beta (and optionally gamma) aerosol monitor with sampling capability; an iodine monitor with sampling capability; an internal temperature (and humidity – if desired) detector, and a Data Acquisition System (DAS). The DAS System consists of Model LPU 02– (Local Processing Unit) that is able to acquire the digital and analog inputs that will store and transfer data via a serial link and can be either hardwired or communicate via RF (radio-frequency), or be used with a telephone modem connection. Gas monitors can also be added if required and monitors for special applications (such as liquid monitoring applications) can also be installed.

The station (s) can be networked to a centralized computer system using any of the communication methods chosen (and allowable given the terrain).

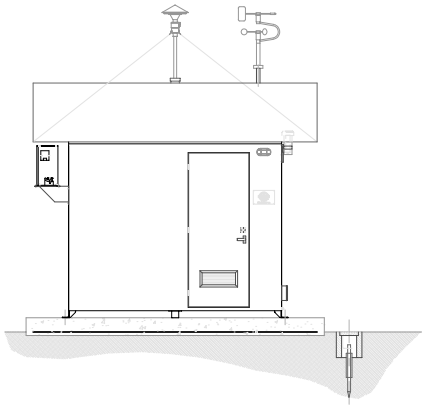
The system (as detailed above) can provide continuous measurement of:

- Gamma dose rate measurement up to 1000 R/hr (10 Sv/hr) and total integrated dose (TID) of up to 100kR (1000 Sv)
- Alpha aerosol concentration in air in the range of 10^{-2} to 10^{6} Bq/m^3 (2.7° 10^{-4} to 2.7 ° 10^{4} pCi/l) with grab sample capability
- Beta aerosol concentration in air in the range 10^{-1} to 10^{6} Bq/m^3 (2.7° 10^{-3} to 2.7 ° 10^{4} pCi/l) with grab sample capability
- Automatic Filter Replacement
- Optional Iodine, Gamma Aerosol, and Gas Detectors (as well as additional meteorological instrumentation) can be provided

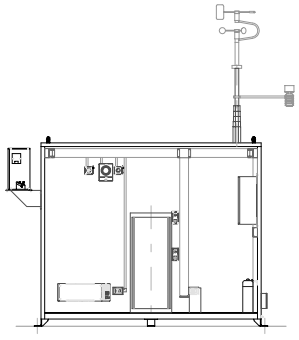
The system can store short and long term historical data of key parameters and generate audible and visual warnings and alarms signals both locally and remotely.

TECHNICAL SPECIFICATIONS

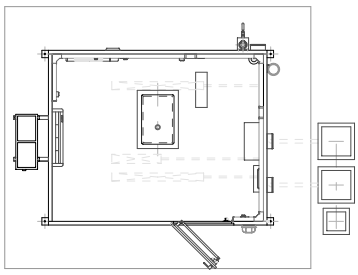
Shelter:	Cabin module dimension 240x240x252 cm (7.87x7.87x8.27 feet)– other on request
	Thermal insulation of each of the six wall panels
	Temperature and humidity isolation of the floor from the underlying terrain
	Anti-slip and washable vinyl floor
	Corrosion resistant external fittings
	Heavy duty door, opening externally, isolated, insulated and sealed, incorporating reinforced structure and lock with safety internal handle and micro switch for opened door signal
	Provision for connection to telephone network, hardwire network or RF network
	Power distribution and stabilizations, according to international standards
	Internal power bus providing connection to the electric distribution network
	Emergency lighting system
	Electrical grounding system with lightning protection and isolation
	Anti-intrusion system connected to the local processor
	Fire extinguishers
	Climate control system (option E02-1) for 15° to 27°C (59 to 81°F) with external temperature -30° to 60°C (-22 to 140°F)
	Back-up power supply (option E02-2) with 2h autonomy without pumps as standard (greater on request)
Gamma probe:	HNQ24 or 26 type directly connected to the LPU – 0.05 or 0.01 uSv/h (5 or 1 uR/h) to 10 Sv/h (1000 R/h)
Aerosol monitor:	RAM-31 or RAM-39 for alpha/beta measurement (gamma measurement optional with GAM-01 head)
Iodine monitor:	RIM-01 or RIM-14
Gas monitor:	RGM-02 series
Water monitor:	RWM-01 for underwater monitoring, RWM-02 series for sampling/monitoring
Met unit:	MET-05 for wind speed and direction, temperature and humidity, atmospheric pressure
Software:	Compatible with the General Atomics Electronic Systems, Inc. central monitoring software CSSW
Protection:	IP43 (higher on request)
EMC:	Current CE directives



FRONT VIEW



ELEVATION VIEW



PLAN VIEW

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