

1) GENERAL INTRODUCTION

Advanced Safety Communications offer a complete design and manufacturing capability in the fields of superior quality communication equipment to embody high integrity applications such as Emergency Evacuation or Hazardous Area broadcasts.

A) Voice Evacuation and General Alarm Systems

To provide Fire Alarms, Gas Alarm or Hazardous Response Instructions initiated from appropriate monitoring systems or approved microphone access points. Designed to meet the requirements of BS 5389 Part 8 and other specifications for secure monitored audio systems.

B) General Public Address and Entertainment Systems

Additionally the package may include general Public Address and Entertainment systems.

For both A) and B) above, multi-level or wide area sites may be serviced by:-

- I) A central comprehensive multi-zone broadcast station,
- II) Dedicated distributed units.

In both cases emergency instructions may be broadcast from pre-recorded high definition messages for immediate implementation of procedures.

Verbal instructions may be selectively broadcast in response to developing situations from a master control panel or from microphone access units located at strategic points.

Routine announcements and background music can also be accommodated.

Combinations of the above can be simultaneously selected and broadcast, individual paging zone priorities can also be assigned.

2) KEY FEATURE - VOICE EVACUATION & PUBLIC ADDRESS

A) Intrinsically Fault Tolerant

Where there is considered to be a possibility of rendering the system inoperable through a single fault, functions have been duplicated or supported to ensure continued operation. Supported functions can include:

- I) Dual power source with automatic change-over. i.e. local mains power with integral stand-by battery.
- II) Loop connected speakers with bi-directional drive to maintain coverage in the event of a single break.
- III) Dual output amplifiers.
- IV) Dual loudspeaker loops.
- V) Standby Amplifiers.

And in the case of distributed systems:-

- VI) Bi-directional transmission highway, retaining full communication in the event of a single cable break.
- VII) Dual voice store - locally and remotely stored messages.
- VIII) Dual alarm inputs - locally and remotely indicated alarms.

In addition, in both the centralised and distributed systems, all audio paths are continuously dynamically tested whilst the system is in its quiescent state.

B) Self Diagnostic – Automated Fault Monitoring System

Each unit is continuously monitored by a comprehensive diagnostic routine which checks the following:-

- Secure microphone inputs;-audio and control
- Fire Alarm/Hazard Monitoring Interface;
- Voice Message Stores;
- Internal Audio Paths;
- Priority Control;
- Zone Addressing;
- PSU/Battery Status;
- Amplifier Output;
- Loudspeaker Cables by either
 - AC tones
 - DC monitoring
 - Impedance monitoring

All faults are indicated locally and voltage free relay contacts are available for remote signalling in the case of the distributed system. A status summary is relayed to the master station. In addition, manual test routines facilitate simple commissioning and maintenance checks.

C) **Additional Features - Distributed Systems**

All system communication interfaces within each distributed unit are galvanically isolated, hence as far as practicably possible any fault on any system module will not impair the performance of any other stations on the system.

Local Operation

Each local station has the ability to operate autonomously in the event of isolation. Local support includes:-

- i. Local power supply with stand-by battery;
- ii. Local access control for automatic initiation;
- iii. Local alarm inputs for automatic initiation;
- iv. Integral message store to maintain broadcasts relevant to each area.

3) MAXIMUM FLEXIBILITY - VOICE EVACUATION & PA

The Intelligent Control Module (ICM) forms the heart of the voice alarm and paging system, containing the necessary electronic modules to run the Automated Fault Monitoring System, control/processing and generation of Emergency messages and alarms.

The different function modules have been designed for use in any type or size of system and such as to minimise the number required whilst maintaining flexibility.

A) **Modular Design**

In the case of distributed systems, inter-station links utilise separate audio and digital pairs to maintain a straightforward approach to installation, commissioning and maintenance operations. If required, additional audio paths are transmitted on separate audio pairs to enable simultaneous transmission of alarm or entertainment broadcast to different zones from the master control/access panel.

I) All systems may be readily enhanced via standard connections by:

- a) Adding amplifiers and control cards to increase the size or number of zones.
- b) Adding remote stations to increase the number of areas to be covered.
- c) Adding remote consoles to increase the number of access points on the system.
- d) Adding message stores to increase the versatility of information broadcast.

II) In general the centralised system is housed in standard 19" racking whereas the distributed stations may be packaged in a lockable enclosure to provide a tamper proof "black-box" solution.

B) **Configuration Flexibility**

The standard unit or module consists of:-

I) Eight Input Audio Priority Encoders/Preamplifiers for routing any combination of microphone inputs or recorded messages can be accommodated.

- e.g. 4 Microphones and 4 recorded messages.
2 Microphones and 6 recorded messages etc.

I) Output power amplifiers. Any number and size of amplifiers may be used on any zone. All zones, broadcasting any selected audio path, may be used simultaneously.

By using expansion cards the number of messages, microphone access points, control panel and paging zones can be increased.

II) The comprehensive system monitoring is displayed firstly on a simple local LED indicators and secondly a more comprehensive and detailed description is presented on a Liquid Crystal Display. The display can then be interrogated by the operator following a simple menu. The fault log can be accessed from a remote point via a data logger and modem.

In addition to the above the following facilities are available:-

- a) PABX Interface.
- b) Input panel for local entertainment broadcasts.
- c) Fire Alarm or Monitoring Systems Interfaces over pre-defined parallel or serial links or bespoke protocols using RS 232, etc.
- d) Printer output for logging purposes.
- e) Updating recorded messages by:-
 - 1) Down loading from tape or CD.
 - 2) Local microphone
- f) Multizone monitoring panel.

C) Minimum Number of Modules

Whether the centralised multi-zone stations, or dedicated distributed units, the same basic modules are employed:-

- I) Audio processor/zone distribution.
- II) Message stores.
- III) 2U 19" Power amplifier modules at
 - 60W
 - Twin 60W
 - Quad 60W
 - 125W
 - Twin 125W
 - 250W
 - Twin 250W
 - 400W
- IV) Console I/O interface and priority encoder.
- V) PABX Interface module.
- VI) Serial data communications control module.
- VII) PSU and charger module.
- VIII) Stand-by batteries used in multiples to meet the capacity required.

D) Centralised or Distributed Systems

The ASC systems provide a fully monitored package for both centralised and distributed installations.

- I) Centralised systems house the control and amplifier modules at a single central location. Different areas and zones are covered by employing multiple amplifier modules which are addressed by the main controlled console. Broadcasts are then transmitted via 100v speaker lines to loudspeakers in the areas selected. A multiple audio path architecture ensures that speech, alarm and alert messages may be simultaneously broadcast to different areas when required.

- II) The distributed system which may comprise two or more stations located at different positions throughout a site, eliminates the dependency on a single control point. As each distributed unit is capable of fully autonomous operation, broadcasts are maintained within each area whilst they remain intact. Also each unit may be programmed with messages to suit a particular area or location, such as specific exit directions or hazardous response instructions. A data communications highway links all stations to ensure that emergency instructions can be broadcast from a main control console and that alarms initiated from a centralised monitoring system. General status information is also relayed back to a nominated master console.

E) Traditional P.A. and Entertainment

- I) In addition to an intelligent audio message system, a comprehensive public address facility can be incorporated to maximise the systems use and to add value to the installation..
- I) Paging microphones can be positioned locally and centrally with zone selection.
- II) Background entertainment broadcasts may be provided from radio, cassette or C.D. player.
- III) Information and advertising messages may be broadcast from high capacity message stores which are played at preset times.
- II) Multiple audio paths allow paging messages in selected zones without interrupting entertainment broadcast in areas not selected.

F) Cable Installations

The system does not employ complex high frequency transmission and is therefore tolerant of standard twisted pair cable over substantial distances. Cables include mineral insulated and equivalent fire resistant constructions for fire applications and armoured cables for hazardous areas.

The systems can be easily interfaced to fibre optic links to transmit both audio and control signals.

G) Loudspeakers

An excellent range of loudspeakers are available to meet the requirements of

- I) BS5839 loudspeakers for Voice Alarm applications
- II) Hazardous area loudspeakers certified Exd
- III) Conventional 100v line or low impedance loudspeakers

4) COMPANY PROFILE

Staff

The staff employed at ASC, on all products, are fully qualified and trained in the necessary skills required to provide both a quality product and first class customer service.

Design

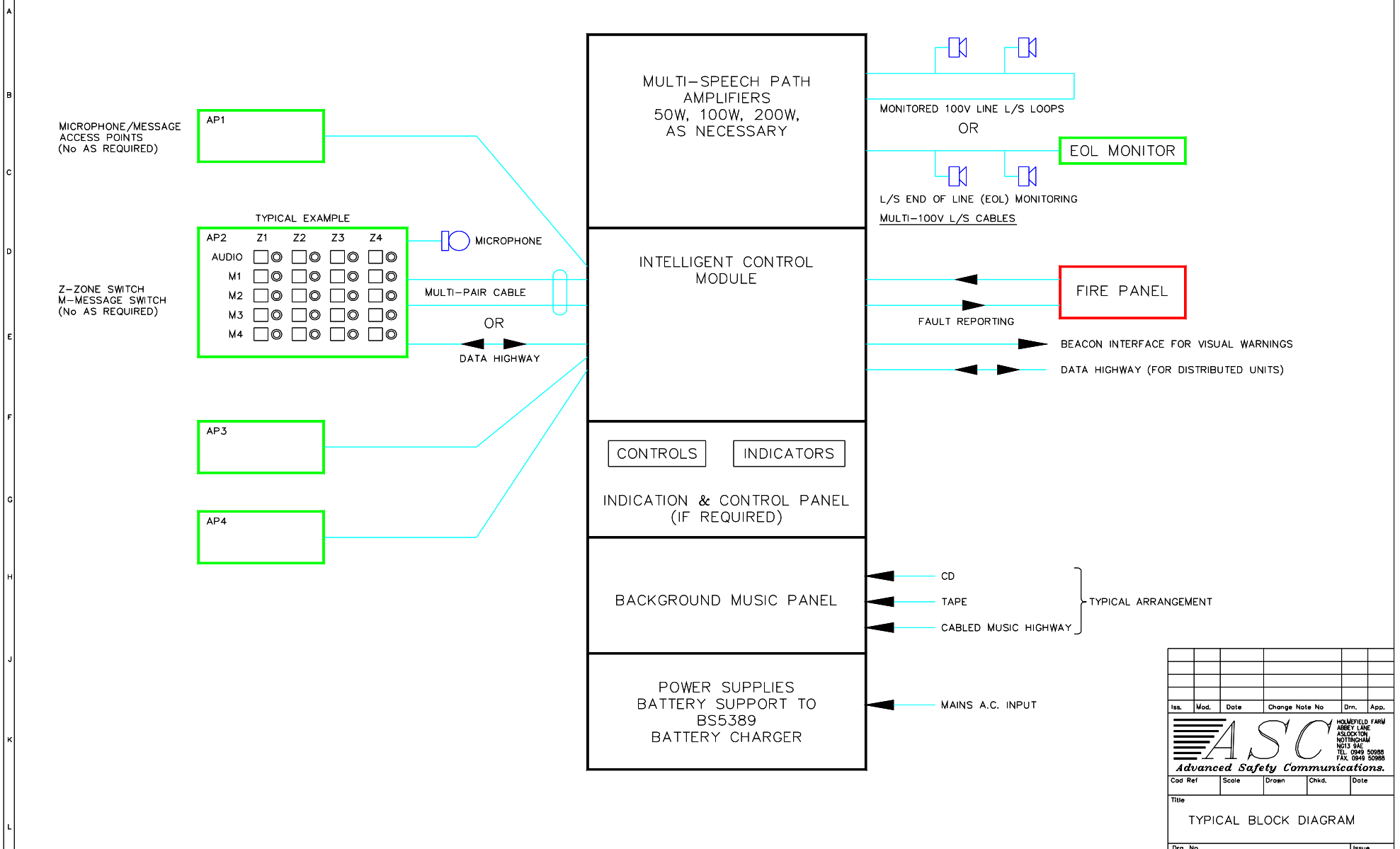
Electronic circuit/system engineers have extensive experience in the design of audio equipment and also have the specialist expertise in the design of fail safe electronic control systems. These skills combine to produce products of superior quality and reliability.

Premises

ASC have an industrial unit for manufacturing all equipment with a modern up to date design facility using the latest computer hardware and software to aid highly accurate quality design of new and existing products.

Quality Assurance

ASC is accredited to ISO9001:2000



Iss.	Mod.	Date	Change Note No.	Drn.	App.
 Advanced Safety Communications.					
HOLMEFIELD FARM ABBEY LANE ASLOCKTON NOTTINGHAM Notts SUE TEL: 0549 50988 FAX: 0549 50985					
Cod Ref	Scale	Drawn	Chkd.	Date	
Title					
TYPICAL BLOCK DIAGRAM					
Drw. No. PUBLICITY 002P					Issue 1