

Projects in Security Domain

Crystaline Infotek Pvt. Ltd.

Crystal House,
235, Navi Peth,
Pune – 411 030.

INDIA.

Telephone + 91 202 433 9634

+91 202 433 9635.

Fax +91 202 432 0023

www.crystalindia.com

INDEX

8 ZONE FIRE PANEL FOR CONVENTIONAL SMOKE DETECTORS	3
MULTI CAPABILITY SECURITY SYSTEM FOR CELLULAR TELEPHONY TOWER SITES.....	4
WIRELESS INTRUSION PANEL	5
AUDIO / VIDEO / FAX SURVEILLANCE.	6
ALARM & EMERGENCY MANAGEMENT SYSTEM (HARDWARE & SOFTWARE)	7
INTELLIGENT HOME SECURITY & AUTOMATION PANEL WITH WIRED AND WIRELESS SENSORS, MODEM, GSM AND WAN CONNECTIVITY.	8

8 ZONE FIRE PANEL FOR CONVENTIONAL SMOKE DETECTORS

Crystaline developed hardware & software for 8-Zone Fire Panel.

Each Zone is capable of driving 20 conventional type photoelectric/ionisation/heat detectors. These detectors increase the current level whenever smoke/heat is detected. This is sensed and alarm condition is set.

In case of an alarm condition the panel can perform following actions.

1. Relay outputs can be used to drive Siren or indicate to BMS (Building Management System). This can also drive the solenoid valve to release FM200 gas.
2. Inbuilt telephone dialler with 20 Sec Voice message can dial multiple nos.
3. Inbuilt communicator can connect to Central Monitoring Station.
4. RS232/RS485 or ethernet interface can signal other equipment.
5. MODBUS Support to talk to BMS.

The unit has 16*2 backlit LCD display and keyboard for settings. The firmware also has ability to customise the functioning of the unit e.g. cross zoning. Time delayed discharge of gas.

TECHNOLOGY

Microchip 18F452 Microcontroller, MPLAB Ver 6.40, ICD, C18: C Cross Compiler, PICSTART+ programmer.

PROJECT SIZE

12 man-months

MULTI CAPABILITY SECURITY SYSTEM FOR CELLULAR TELEPHONY TOWER SITES

Crystaline developed hardware & software as per custom requirement of multinational cellular mobile service provider.

The panel has following capabilities....

1. One zone for smoke detection.
2. One zone for magnetic contact.
3. One zone for temperature detection.
4. One zone for twilight sensor.
5. One output to switch on tower light in the night and switch off in the morning.
6. 4 relay outputs to send info to BMS.
7. LED Indications.

TECHNOLOGY

Microchip 16F73 Microcontroller, MPLAB Ver 6.40, ICD, C18 : C Cross Compiler, PICSTART+ programmer.

PROJECT SIZE

3 man-months

WIRELESS INTRUSION PANEL

Crystaline developed hardware & software for their customer providing solutions for intrusion detection.

The panel has following capabilities....

1. 4 wired zone (2 delayed and 2 panic).
2. Keypad based arming/disarming.
3. 7 Wireless Sensor Zones (Uses Microchip Keeloq technology to secure).
4. Battery Backup with battery charger.
5. Telephone dialler with multiple voice messages.
6. Other features like : Tamper Switch, Telephone line sensing.
7. 7 Segment LED indication.

TECHNOLOGY

Microchip Keeloq tech for encoding/decoding, 433.92 MHz transmitter/recievers, RF antennas. 16F876 Microcontroller, MPLAB Ver 6.40, ICD, C18 : C Cross Compiler, PICSTART+ programmer.

PROJECT SIZE

8 man-months

AUDIO / VIDEO / FAX SURVEILLANCE.

Crystaline has developed with Silicon Valley based System on Chip (SoC) manufacturer to build proof of concept platform for the above.

The platform consists of

1. Video interface board to interface composite video cameras.
2. SLIC/SLAC board interface.
3. Cradle RDS3400.
4. DSP implementation of M-JPEG, MPEG-4 and H.264.
5. PC Side Fax / Video Viewer, audio/video/fax file system.

TECHNOLOGY

Cradle ECE3400 and tools, M-JPEG, MPEG-4, H.264 or MPEG-4 AVC, Infineon SLIC/SLAC Interface, Connexant DSP with FAX capabilities, eCOS, Video Streaming, TCP/IP stack, RTSP, HTTP, FTP.

PROJECT SIZE

24 man-months

ALARM & EMERGENCY MANAGEMENT SYSTEM (HARDWARE & SOFTWARE)

Crystaline developed hardware & software as per custom requirement of Emergency Service Provider.

The solution consists of....

1. Intrusion Panels / Smoke Detection Panels.
2. CMS Hardware (Central Monitoring Station).
3. AEMS Software running on PC at CMS.

TECHNOLOGY

For Hardware as mentioned separately in projects above. AEMS Software uses .NET technologies, VB, VC++, Crystal Reports, SQL 2000.

PROJECT SIZE

12 man-months (AEMS Software).

INTELLIGENT HOME SECURITY & AUTOMATION PANEL WITH WIRED AND WIRELESS SENSORS, MODEM, GSM AND WAN CONNECTIVITY.

DESCRIPTION : Extensive project involving hardware, software and firmware development on Microchip platform. This development included development of main controller, user interface, ethernet interface, telephone interface & PC side software.

DURATION : 25 man years

DESIGN CHALLENGES:

- Interlinked tasks and feature loading thus requiring huge software overhead.
- Getting approval for ACTA, UL, and FCC-A.
- Integration of all 4-5 different modules together
- Microchip dsPIC library integration to reduce hardware cost (DTMF chip is replaced by this software)
- Multiple communication interfaces including LAN, PSTN, GSM, RF-ISM band and
- Proprietary bus for interfacing multiple keypads and zone expanders.
- Remote firmware upgrade through ethernet or modem.
- Wireless sensor key fob and wireless displaying keyboard module.
- PC Side utility for remote configuration and management
- IVR and speech interface.
- Power management
- User-friendly LCD-Keypad interface

BLOCK DIAGRAM

