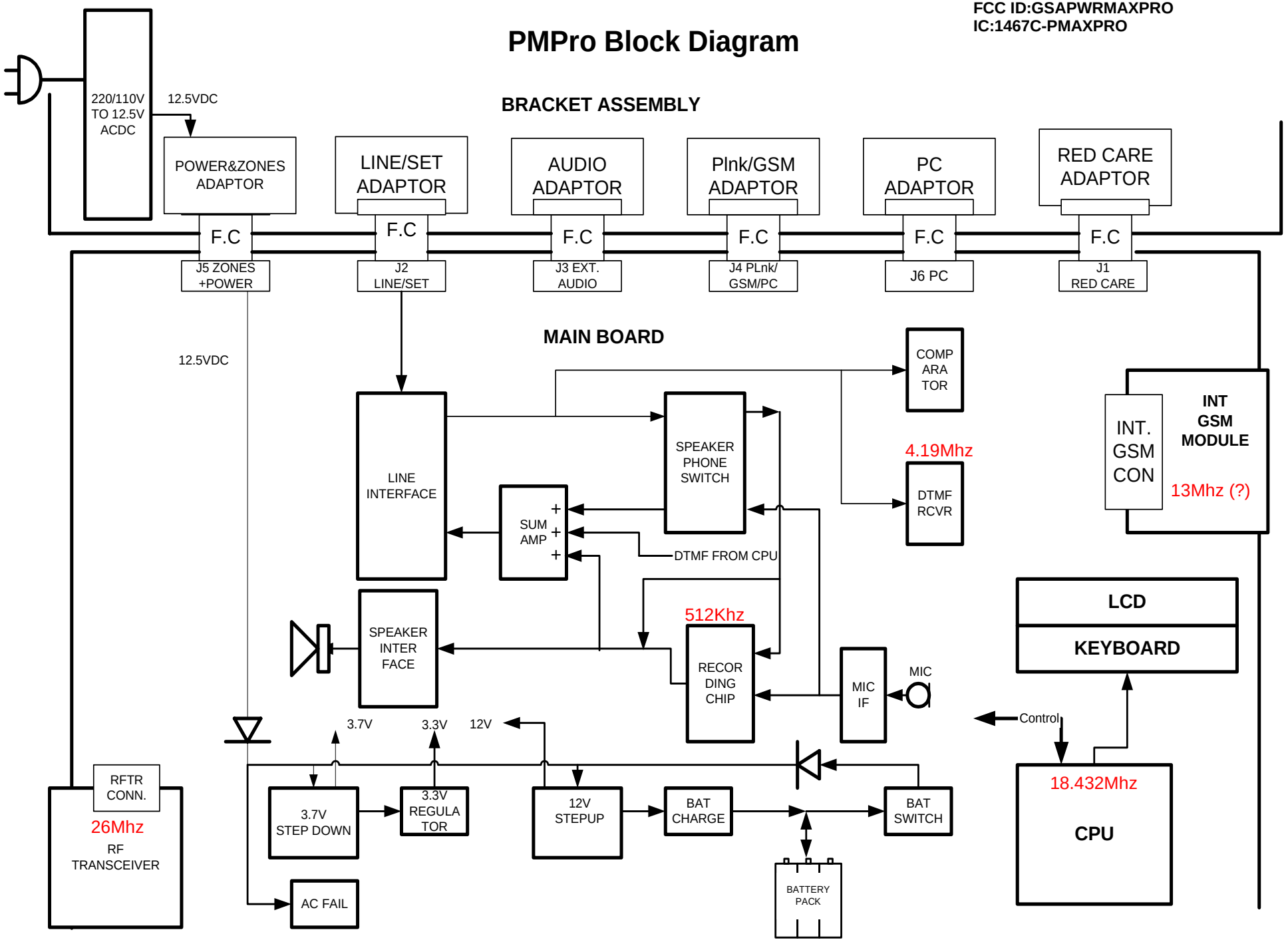
FCC ID:GSAPWRMAXPRO
IC:1467C-PMAXPRO

PMPro Block Diagram



1 Block diagram description

1.1 Bracket Assembly

The bracket assembly is the rear part of the panel. It is fastened to the wall and contains small interface boards which contain connectors to cables leading to external devices. Each interface board connects to the main board via flat cable (F.C).

1.1.1 RED CARE ADAPTOR

This is an RS232 adaptor connecting to external dialer through proprietary serial interface.

1.1.2 LINE/SET ADAPTOR

This connects the phone line and house telephone to the panel.

1.1.3 AUDIO ADAPTOR

This an analog audio amplifiers interface to an external speaker and microphone unit.

1.1.4 Plnk/GSM ADAPTOR

This is an RS232 interface for two standard UART links to PowerLink unit (connects to internet) and external GSM unit.

1.1.5 PC ADAPTOR

This is an RS232 interface for one standard UART link to a PC for offline servicing.

1.1.6 POWER & ZONES ADAPTOR

This adaptor receives power from the ACDC power supply. It also contains connectors for external wired detectors and sirens.

1.2 Main board on front panel

1.2.1 3.7V STEP DOWN

This block is a switched DCDC power supply. It inputs 12.5VDC from the ACDC and outputs 3.7VDC

1.2.2 3.3V REGULATOR

This block is a linear DCDC power supply. It inputs 3.7VDC and outputs 3.3VDC supply to most of the circuit.

1.2.3 12V STEPUP

This block is a switched DCDC power supply. It inputs 9.6VDC from the Battery and outputs 12VDC for battery charge and for external 12V devices.

1.2.4 BAT CHARGE

This circuit inputs 12V from the step up and outputs two levels of charge current to the battery controlled by the CPU.

1.2.5 BATTERY PACK

This is a pack of 8 AA sized NiMH batteries with Nominal voltage 7.2V. Optionally another such pack can be plugged in parallel to increase backup time.

1.2.6 AC FAIL

This block monitors the voltage of the ACDC and if it drops below threshold it notifies the CPU.

1.2.7 BAT SWITCH

This circuit enables the CPU to monitor battery voltage and to switch off the battery when it is depleted.

1.2.8 LINE INTERFACE

This circuit interfaces to the telephone line conforming with the relevant telephony standards. It inputs and outputs audio to the audio circuits. It also send a digital ring detect signal to the CPU.

1.2.9 SPEAKER PHONE SWITCH

This block consists of a speaker phone half duplex voice switch. It receives audio from the line and from the units microphone. It has a switching decision logic to enable the microphone to the line or the line to the speaker. This enables hnds free conversation through the unit while avoiding howling due to echo between the units speaker and microphone.

1.2.10 COMPARATOR

This block receives audio from the line and converts it to digital wave form. The CPU analyzes its output and detects dial tone and central station modem tones.

1.2.11 DTMF RCVR

This block consists of a DTMF receiver chip. It receives audio from the line interface and transmits the detected DTMF digits to the CPU via serial link.

1.2.12 MIC IF

This block serves as microphone preamplifier and automatic gain control. It enables speaking to the unit from far and from near.

1.2.13 RECORDING CHIP

This block consists of an analog voice recording chip. It contains pre recorded messages and also space for user recorded messages. Messages can be recorded and erased from the units microphone or from the telephone line remotely. Messages can be played back either to the units speaker or to the telephone line.

1.2.14 SPEAKER INTERFACE

This block consists of power amplifier for the speaker and also enables four steps of volume control by the CPU.

1.2.15 SUM AMP

This block is a summing amplifier. It receives voice signals from the speaker phone switch, from the recording chip and analo DTMF signals from the CPU. It sums them up and transmits them to the telephone line through the line interface circuit.

1.2.16 LCD

This block is the units liquid crystals display module. It is used to display system status messages.

1.2.17 KEYBOARD

This block is the units keyboard .It is a separate small board containing the keyboard contacts and backlight LEDs.

1.2.18 CPU

The CPU is a microcontroller chip including internal flash and RAM memories. It also has the necessary digital I/O ports, D/A and A/D to control the system.

1.2.19 INT GSM MODULE

This is a user pluggable GSM module. It receives and transmits voice signals instead of the line interface. It is controlled by the CPU through serial interface. It is used optionally to backup the telephone line.

1.2.20 RF TRANSCEIVER

This block transmits and receives RF messages to detectors and other devices on the wireless communication link.