Project Widgie
Amplisign Development

Contents

INTRODUCTION

The system described in this document provides a range of intelligent “Point of Presence” displays, AKA Amplisigns, that can be scaled from a single “stand-alone” unit through to a large multi-display multi-site system

Its modular design provides a high degree of deployment flexibility and facilitates the rapid incorporation of additional functionality modules and facilities that may be required to meeting changing market requirements

SYSTEM SCOPE

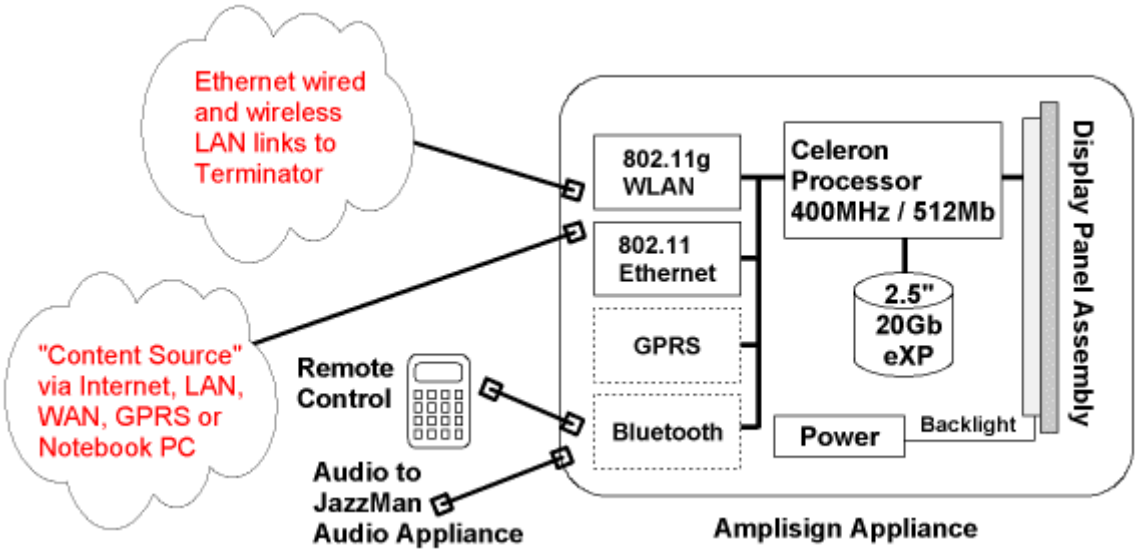
The system includes all hardware, communication infrastructure, software and firmware required to implement an operational system

It does not include the facilities required for the production, management or scheduling of the actual content. Initially these functions will be performed by others in accordance with our interface specification. However we may, in the future, reconsider our options in this area.

Communication between the “Content Source” and the system will utilise XML messages and multi-media content transmitted over wired or wireless Ethernet or GPRS links

HARDWARE COMPONENTS

AMPLISIGN DISPLAY APPLIANCE



Display Appliances containing an embedded processor, Hard Disk, Ethernet LAN functions, display panel and optional components will be assembled into a selection of high class industrial furniture housings suitable for suspension from a ceiling, wall mounting and free standing operation

DISPLAY MECHANISM

For development purposes the display system will use a TFT LCD panel. Subject to the completion of electronic and optical R&D currently being undertaken the final product may utilise other quite radical display technologies

However, regardless of the final display mechanism, the electronic and software elements will remain standard

802.11 ETHERNET

This port can be used to connect to a “Content Source” or to multiple Amplisigns

802.11G WIRELESS LAN

Depending on the displays operating mode, this port can be used to connect to a “Content Source” or a Terminator

GPRS OPTION

This future option can be used to manage and operate displays located in geographically perverse locations

BLUETOOTH

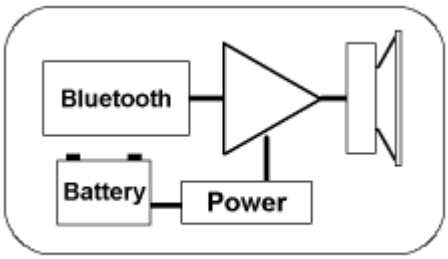
Initially the Bluetooth option will provide an RF bearer carrying an audio feed to the JazzMan appliance to allow soundtracks and announcements associated with the display to be presented without requiring trailing wires and power connections

Possible future uses of the Bluetooth port include remote control of the associated display panel and the addition of, for example a “spruiker microphone” channel

JAZZMAN AUDIO APPLIANCE

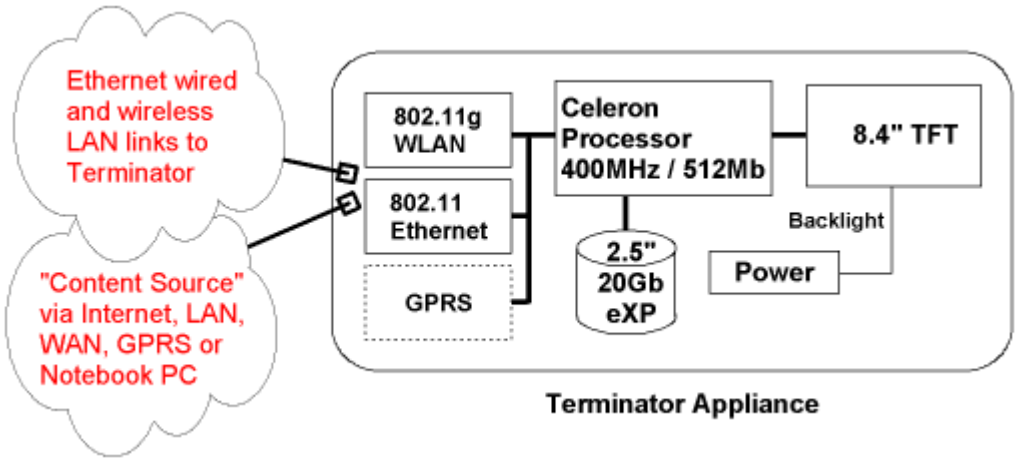
The JazzMan components, mounted in a suitable housing, receive audio from its associated display panel using a Bluetooth RF link

The module may include a rechargeable battery to permit operation when mains power is not available



JazzMan Audio

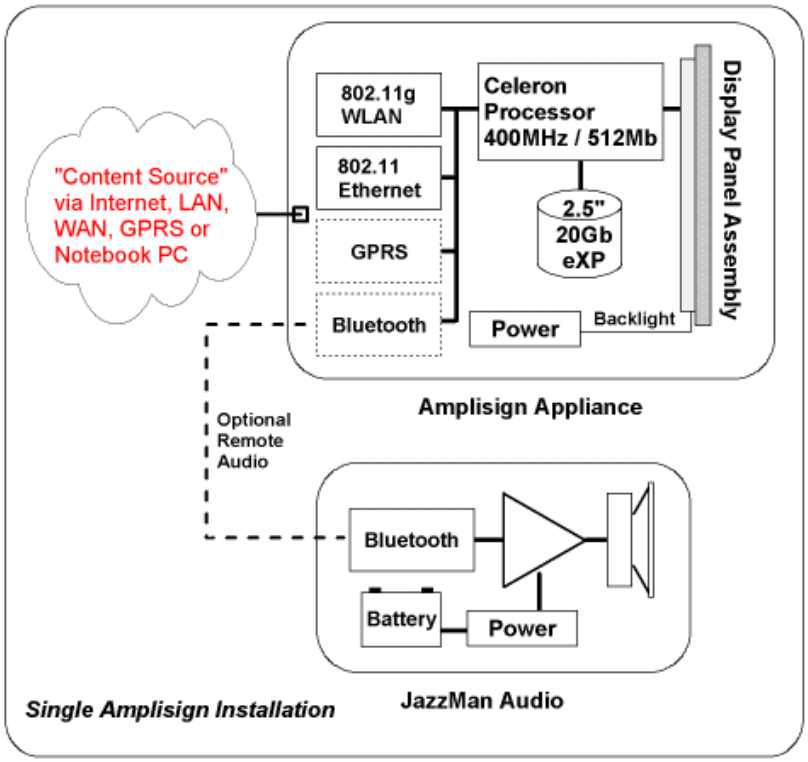
TERMINATOR APPLIANCE



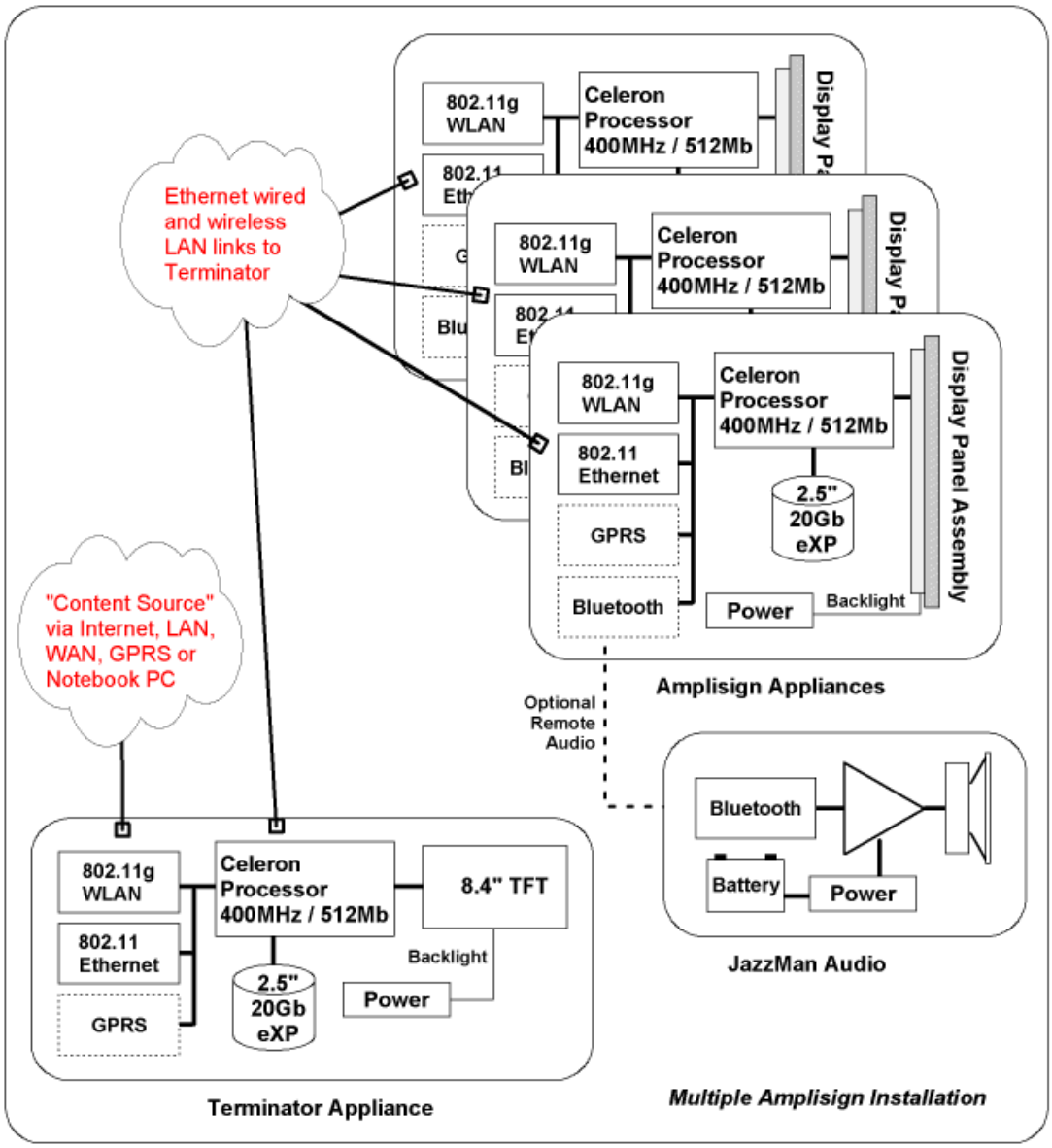
The Terminator is used to provide a central "gateway" function at locations using multiple Amplisign display panels. The Terminator downloads content and instructions from the remote "Content Source" and effectively becomes the local "Content Source" location for its attached Amplisigns. The connection to the remote "Content Source" can use either Ethernet or the optional GPRS module. Similarly, each Amplisign can connect to the Terminator using wired or wireless Ethernet

TYPICAL IMPLEMENTATIONS

SINGLE DISPLAY



MULTIPLE DISPLAYS



WIDGIE SOFTWARE APPLICATION

Each Amplisign and each Terminator uses an instance of the “Widgie.EXE” application running on the Embedded Windows XP operating system to display content in accordance with modes, instructions and content contained in the following files

WIDGIE CONTROL AND CONTENT FILES

CONFIG.XML

Contains mode and management information pertaining to the host Amplisign. This file is downloaded from the “Content Source”

LOOP.XML

Specifies the order and/or times that content is run by the Amplisign
This file is downloaded from the “Content Source” in accordance with the parameters specified in CONFIG.XML

MANIFEST.XML

Lists the content files and version required to conform to the instructions contained in LOOP.XML.
When a file or version anomaly occurs Widgie automatically corrects by downloading the required material

SCROLL.XML

For future use. If required, this file will contain scrolling text to be displayed across the bottom of the Amplisign

“IMAGE.JPG”

These files contain the static “Slides” that are displayed by Amplisigns
They must comply with the following specification;
xxx

“MULTIMEDIA.MPG”

These files contain the dynamic multimedia ”Movies” that are run by Amplisigns
They must comply with the following specification;
xxx

STATS.XML

This file contains operating and system log information that is uploaded from the host Amplisign to the ““Content Source”” specified in CONFIG.XML after all required downloads are completed

BASIC WIDGIE OPERATION

- Power-on boot-up completed
- Refresh Widgie.EXE from \Content
- Run Widgie.EXE
- Read CONFIG.XML
- If appropriate, refresh LOOP.XML from CONFIG.XML specified ““Content Source””
- If appropriate, synchronise files in \Content to match MANIFEST.XML by downloading from CONFIG.XML specified ““Content Source””
- When appropriate, commence display sequence in accordance with LOOP.XML
- When appropriate, close down the Widgie application and Windows eXP O/S in accordance with:
  a) LOOP.XML instruction
  b) Power Control Switch operation
  c) Watchdog trigger

COMMUNICATION FUNCTIONS

IMMEDIATE

AMPLISIGN CONTENT DOWNLOAD

- Widgie.EXE checks 100BASE-T wired Ethernet port for the “Content Source” specified in CONFIG.XML (This may be a server located on a LAN/WAN connection or may be a (local) Terminator Appliance
- If not found, Widgie.EXE checks the 801.11g wireless Ethernet port for ““Content Source”” specified in CONFIG.XML
- If not found, Widgie.EXE checks for the presence of the optional GPRS module
- If the GPRS module is found Widgie.EXE initiates the call procedure specified in CONFIG.XML

AMPLISIGN STATS UPLOAD

Following completion of the download process as required to update and/or synchronise \Content, Widgie.EXE will initiate an upload of STATS.XML to the ““Content Source”” location specified in CONFIG.XML

FOR INVESTIGATION

BLUETOOTH AUDIO FEED

We need to investigate the most appropriate method of wirelessly transmitting an audio feed from a Amplisign to its associated Slave Audio Appliance/s

Given that in the future we may also have a requirement for remote control functions the most cost effective method may be to use Bluetooth technology

LANGUAGE

Amplisign	The Amplisign appliance is a Point of Presence display module
Bluetooth	Wireless technology that provides unlicensed fully duplex short haul interconnections between appliances
CONFIG.XML	Amplisign mode control file processed by WIDGIE.EXE
Content Source	The location where XML, slides and multi-media files are held prior to retrieval and download into individual Amplisigns or Terminators
GPRS	General Packet Radio Service A (relatively) high speed data link that operates on the mobile telephone service infrastructure. In the future this will become the G3 (real) high speed data link
JazzMan Audio	A remote appliance containing an audio amplifier used to wirelessly provide an audio output
IMAGE.JPG	"Slide" file processed by WIDGIE.EXE
LOOP.XML	Amplisign "Script" file processed by WIDGIE.EXE
MANIFEST.XML	Image and multimedia inventory file processed by WIDGIE.EXE
MULTIMEDIA.MPG	"Movie" file processed by WIDGIE.EXE
SCROLL.XML	Future use. "Scrolling Bar" content file to be processed by WIDGIE.EXE
STATS.XML	File containing operating log information pertaining to the Amplisign that is periodically transferred to the *"Content Source"* location
Terminator	Is a gateway appliance used in locations employing multiple Amplisigns. The Terminator automatically (in accordance with the parameters specified in its CONFIG.XML) downloads content from the *"Content Source"* (specified in its CONFIG.XML) and makes it available to individual Amplisigns
Widgie	The development project name. WIDGIE.EXE is the name of the application used in Amplisigns and Terminators

HISTORY

Date	*Version*	*Detail*
9th Dec 2004	i04	Revised names and marks
8th Dec 2004	i02	First draft