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Text2Radio™ Overview and Quick Start Guide

Text2Radio™ communication system provides the ability for multiple PC stations (consoles) to communicate to a Server PC supporting Text-To Speech generation and route the speech to multiple radio transceivers. Each PC console may specify a text message segments up to 1024 characters in length, the receiving radio identifier, and a priority for the message output.

System Components

1) Server based PC with NT Service that supports a multimedia card, TCP/IP networking, USB I/O and Speech Synthesis software components, such as Microsoft SAPI 5.1 voice "Microsoft Mary". Microsoft Windows XP® does not include the recommended voice "Microsoft Mary". The installation of this voice is available license free from Microsoft, on the Internet at www.microsoft.com/speech.

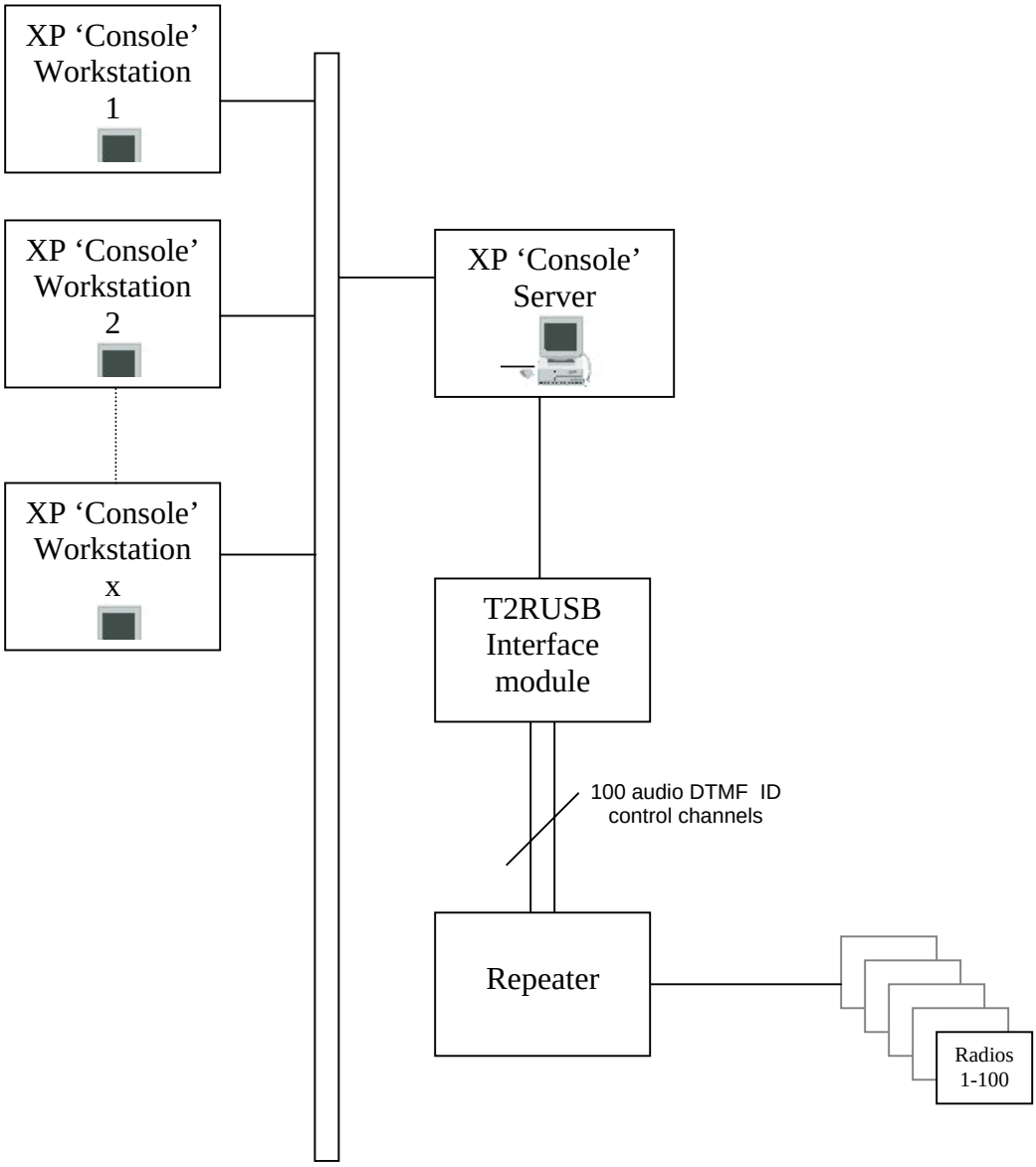
2) Windows XP® console "client" software on a PC that supports TCP/IP to link to the NT Service and support the user interface to specify a text message and selected radio to send the message.

3) USB interface, attached to the Server NT PC to control a *Key-Down* closure to control radio repeater interfaces

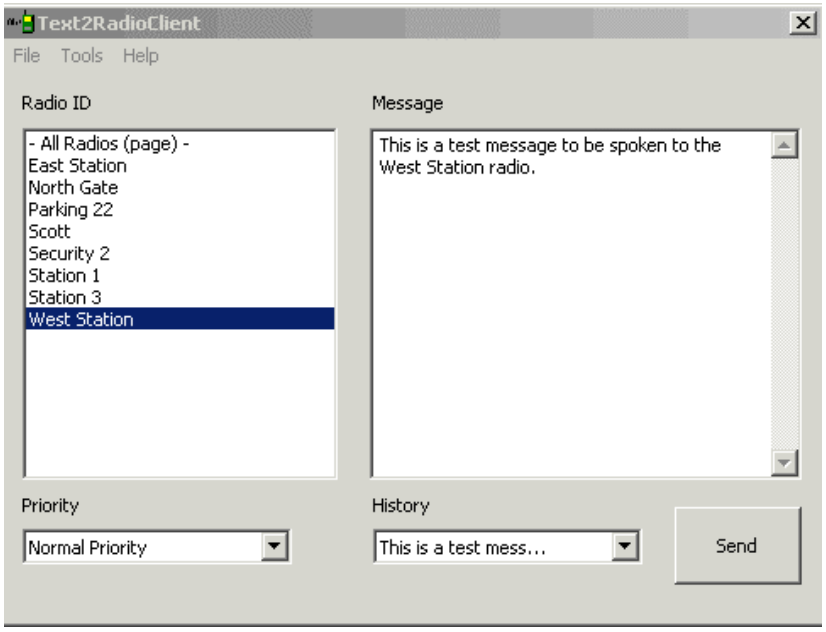
Additional Feature Support

- Message priority (Urgent, Immediate, Normal, Low) to support message pacing
- Time and Date or transmission archiving and event and audit logs
- Radio Friendly Name display and setup utilities
- Phonetic dictionary translation
- User selectable Speech Voice options

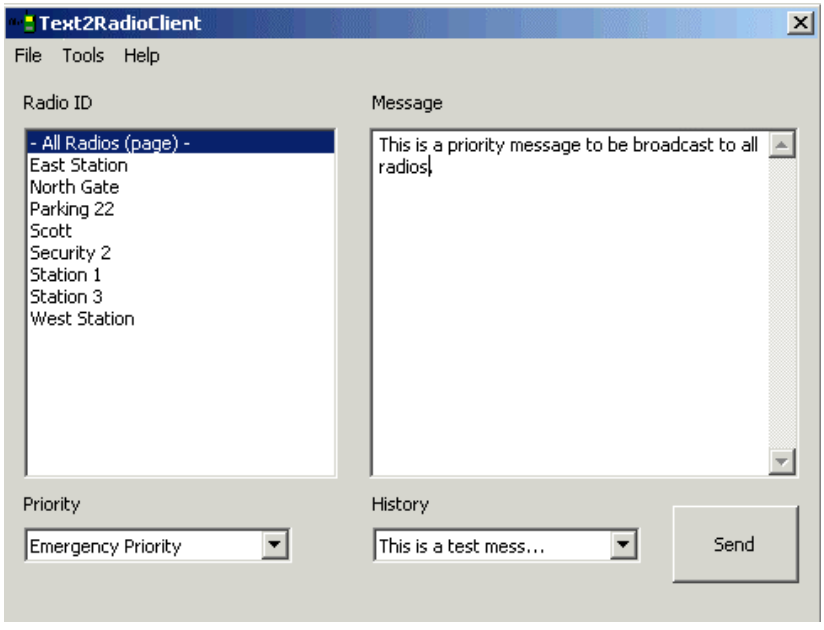
System Block Diagram



CLIENT MESSAGE ENTRY

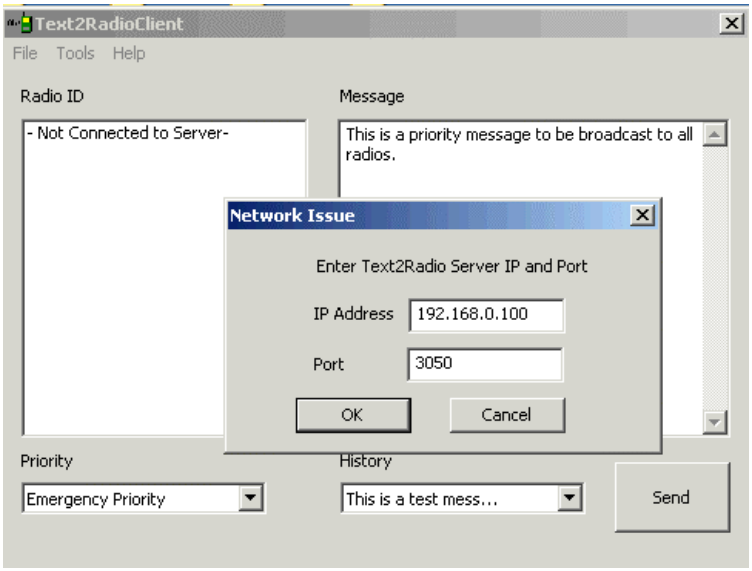


Messaging Screen (Normal Priority)



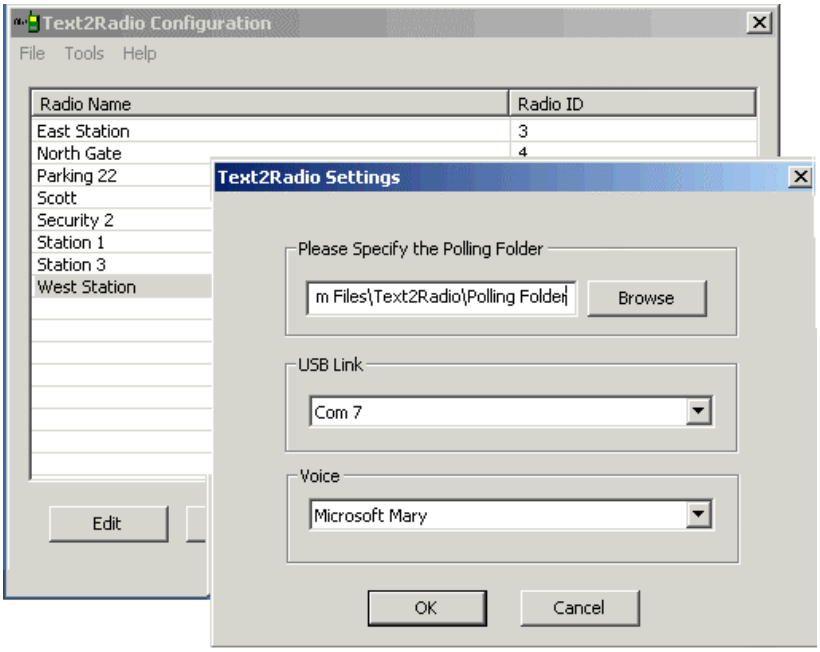
Messaging Screen (High Priority)

CLIENT SETUP



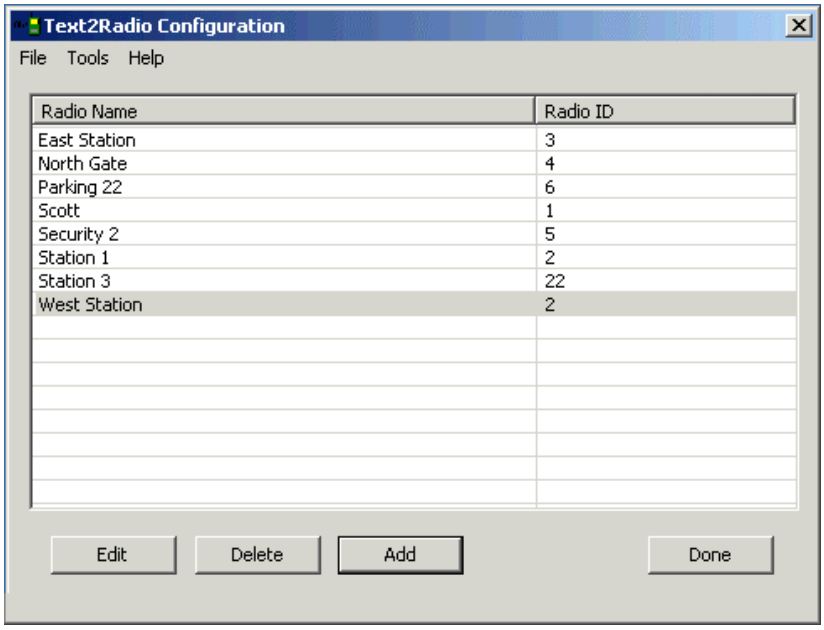
Client Setup Assignment
(Enter the IP address, and Port of the Server Computer)

SERVER SETUP

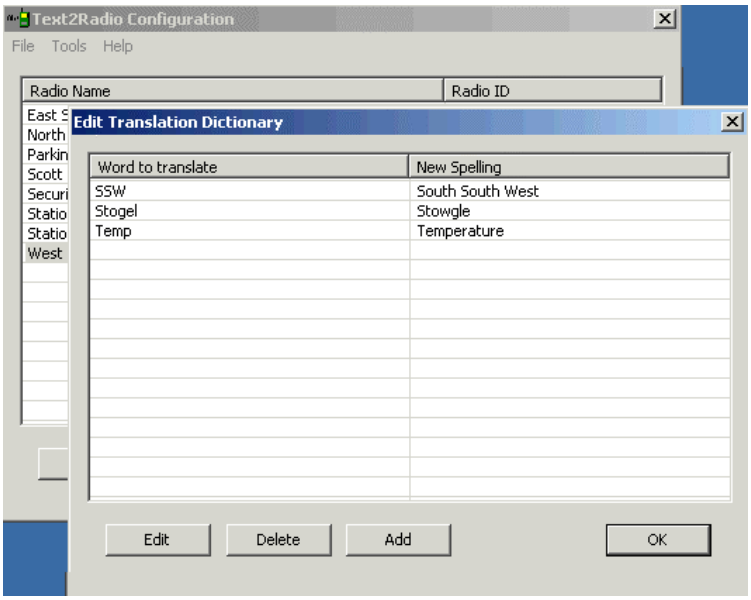


Server Configuration and Setting Screen
(Select Polling Folder, Hardware Link Port and Preferred Voice)

SERVER CONFIGURATION



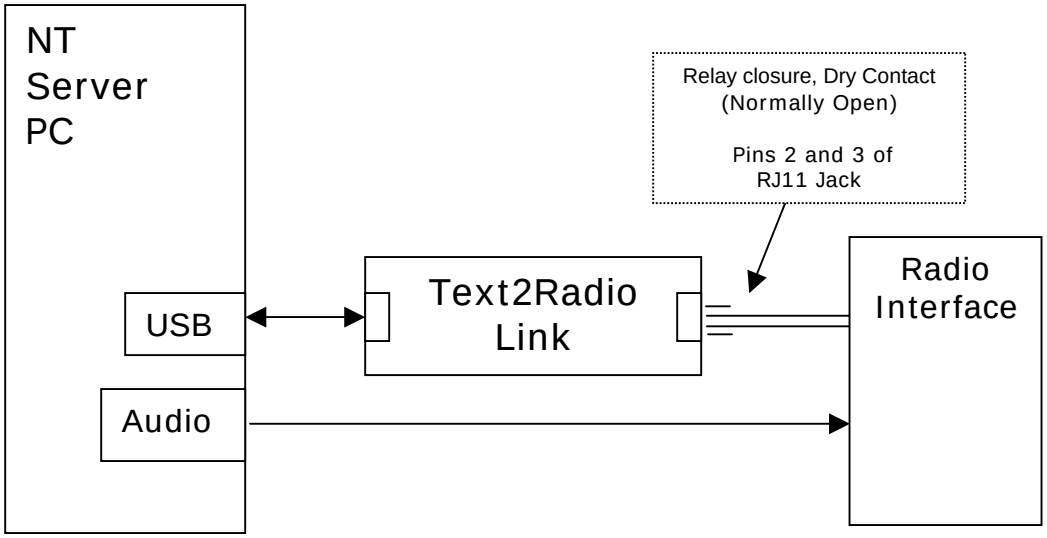
Friendly Name and DTMF address associations
(Assign Radio ID#s and Associate Names)



Phonetic Spelling Adjustments
(Optional correct or modify spoken word pronunciations)

HARDWARE CONFIGURATION

Text2Radio USB-RADIO Link



Polling File Overview

A specialize file is supported that can be used to generate speech automatically in the Text2Radio NT Service. This format is roughly an XML format, and is used to describe the various parts required to send a message via Text2Radio.

- Radio ID
- Priority
- Occurrence tag
- Message Text

Sending a Polling Message

When a file named *.t2r containing the t2r tagged XML file is copied into a dedicated XP File Folder (named “Poll Folder”) the message text is converted and transmitted the specified radio destination(s). The Poll Folder is found in a subdirectory of the Program Folder holding the Text2Radio.exe Application Program. If the file is correctly formatted it is accepted and queued for speech generation. After generation, the file is deleted. If it is rejected, the file is saved and renamed *.bad. All generated speech iterations append the “MessageLog.t2r” file with the message and the sent time and date of the message.

Message Definition

A sample message would be as follows:

```
<t2r>
      <RadioID ID=″1″/>
      <Priority P=″0″/>
      <Occurs Freq=″1″ Times=″2″ Time=″22:15:00″ Date=″2/3/2006″/>
      <Message>This is a message and can be up to 1023 characters in
length</Message>
</t2r>
```

The main tag is the <t2r> tag. This signifies the beginning of a Text2Radio xml frame. The final </t2r> closes the message frame.

The next tag is the <RadioID> tag, and has a parameter ‘ID’ that is the numeric value of the radio to send the message.

The <Priority> tag has a parameter ‘P’ that ranges from 0 to 3 (Low, Normal, High, Emergency); where Emergency will play a tone after the radio ID and before the actual message to grab the listeners’ attention.

The <Occurs> tag has several required parameters. ‘Freq’ specifies the frequency in minutes to repeat a message. ‘Times’ specifies the number of times to send a message. ‘Time’ specifies the 24-hour time to start sending the message. ‘Date’ is the MM/DD/YYYY format date on which to send the message.

The <Message> tag specifies the beginning of the message to send. The </Message> tag specifies the end of the message. Up to 1023 characters can be presented as a message.

Sample Polling Message ‘ANYNAME.t2r’

```
<t2r>

<RadioID ID=”23”/>
<Priority P=”0”/>
<Occurs Freq=”1” Times=”2” Time=”22:15:00” Date=”2/09/2006”/>

<Message>

Road conditions may be hazardous. Light snow likely late in the
morning...then scattered light snow showers in the afternoon. New snow
accumulation around an inch. Highs in the lower 30s. Southwest winds 5 to 10
mph. Chance of snow 70 percent.

</Message>

</t2r>
```

Archive Logs ‘MessageLog.t2r’

Logging file MessageLog.t2r is save in the root program directory and contains XML parsed logs of messages. Sample content showing 2 messages previously send on 1/10/2006 would be formatted as:

```
<RadioID ID="4"/>
<Priority P="1"/>
<Date Date="1/10/2006"/>
<Time Time="8:58:46"/>
<Message>hello</Message>
</t2r>
<t2r>
<RadioID ID="24"/>
<Priority P="1"/>
<Date Date="1/10/2006"/>
<Time Time="8:59:17"/>
<Message>A storm centered over southeast Canada will sweep cold winds and snow over
the Great Lakes and Appalachians as far south as West Virginia. A new storm will quickly
take shape over the South.</Message>
</t2r>
```