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RF6xxAppRouter

History

This document has evolved as follows:

Original version by Ari Pöyhönen.
Date 5.12.2006

7.3.2010 Version 2.4.1
-Added FIRST_STRING feature
-Added support for “WHAT” command
-Works only with PLServer 6.0.5 and later

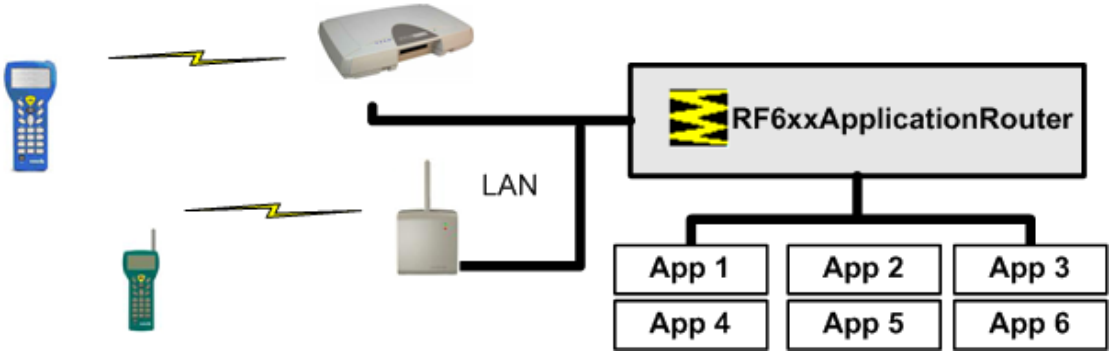
Contents

1 Introduction

The RF6xx Application Router is a PC Windows application which routes hand terminal messages to the specified host application. Also it handles several functions that system integrator doesn't have to implement in the host application.

The RF6xxAppRouter helps system developers who don't want to use PLServer in their business application. Usually, it is quite hard programming job for the non PLServer developer to implement roaming, resend handling, crc checking and other functionalities that AppRouter (PLServer) already has.

In some cases, there is need to use separate host applications but still use same base stations. The RF6xxAppRouter generates main menu of available host applications in to the hand terminal screen. The user of the hand terminal can select host application from the menu. The Application Router and the remote host applications are connected together using TCP/IP connection.



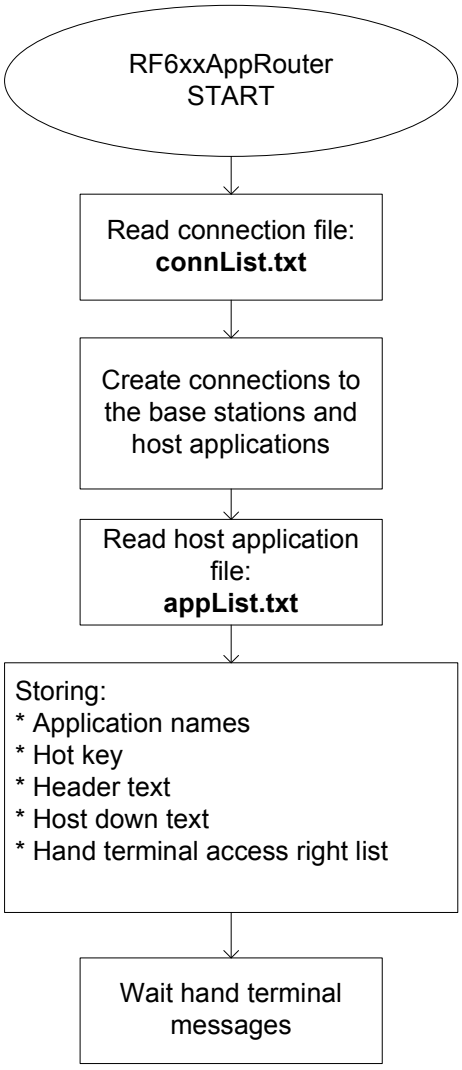
1.1 The RF6xxAppRouter software features

- Handling the base station connections.(TCP/IP server/client and COM)
- Handling the remote host connections over TCP/IP.
- Routing hand terminal messages to the selected host application.
- Filters received messages that only one message is passed to the remote host.
- Controlling the hand terminal access rights.
- Main menu of the available host application can be opened by pressing defined hot key. (Like: “F10”)
- Up to six (6) remote host applications can be defined.
- Notifies the hand terminal user when the remote host application is not available.
- Supports all RF-Family hand terminals.
- Supports Bluetooth access server connections.
  Hide RF6xxAppRouter window to system tray if specified.
- After PC boot, RF6xxAppRouter can be start up and create connections automatically.
- Future extension: Routing hand terminal messages to the selected XML application at the web server. RF6xxAppRouter converts RF6xx protocol messages to XML and vice versa.

1.2 Not supported features

- Bluetooth printing via access servers
- SSM (Sub Station Modem) functions

2 Functionality



The AppRouter program can be set to start automatically when PC is started and making main window to be hided in the system tray. While starting, the AppRouter reads **connList.txt** file and opens the connections of the base station and the remote hosts.

Next, the AppRouter opens **appList.txt** file which specifies remote host applications, hand terminal access rights and other settings.

When the hand terminal user connects first time to the AppRouter, main menu of the available host applications will be appear in to the hand terminal screen. The hand terminal user can select the application to use. When selected, the hand terminal sends virtual “OK” key press to the selected application by default. This “virtual key” press string is possible to define to be any string using FIRST_STRING feature in appList.txt. Next sending with the hand terminal will be routed to the remote host. The AppRouter will remember routing path as long as the user presses “main menu” hot key (Like: “F10”). If the host application is down, AppRouter will bring hand terminal back to AppRouter user interface automatically.

2.1 Definition file of Base station connections: connList.txt

The base station connections are defined in **connList.txt**

2.1.1 Serial Port Connection

```
[COM:<port number>:channel(optional)]
```

Example:

```
COM:1       ** Opens COM1
COM:1:5     ** Opens COM1 and set base station channel to 5
```

2.1.2 SERVER

Start to listen client TCP/IP connections to specific port

```
[SERVER:<port to listen>
```

Example:
```
SERVER:1200
```

2.1.3 CLIENT

Create TCP/IP connection to the specific address and port. Channel value is optional

```
[CLIENT:<tcp/ip addr or name:port:channel(optional)]
```

Example: Connect to 194.100.186.39 and port 2101 and set base station channel to 5
```
CLIENT:194.100.186.39:2101:5
```

Connect to 194.100.186.40 port 7001. No channel changes
```
CLIENT:194.100.186.40:7001
```

2.1.4 HOST

Specifies host application connection

```
HOST:<tcp/ip addr or name:port:<App name>
```

NOTE: App name must be same than specified in **appList.txt** APPLICATIONS section

Example:

```
HOST:127.0.0.1:500:PLAPP
HOST:DemoPC:1100:FAST_INVENTORY
```

2.2 Definition file of applications: appList.txt

2.2.1 APPLICATIONS

```
[APPLICATIONS:<App_1_name>:<App_2_name>:<App_3_name>...]
```

Used host applications. These application names are printed on to the hand terminal screen where the user can select to communicate with selected application.
App_x_name must be same than name when creating connection in **connList.txt**
Up to 6 applications can be routed.

Example:

```
APPLICATIONS:PLAPP:FAST_INVENTORY
```

2.2.2 HS_ID

Hand terminal restriction list

```
[HS_ID:<ID nro>:<App number>]
```

Hand terminal ID which only have access to the system.
If no HS_ID entries, all HS have access to all applications.
App number specifies access right to available applications

Example:

**This HS can only use app1 (PLAPP)
```
HS_ID:12345:1
```
**This HS can use app1 and app2 (PLAPP and FAST_INVENTORY)
```
HS_ID:44444:12
```
**This HS can use only app2 (FAST_INVENTORY)
```
HS_ID:23022:2
```

2.2.3 MAIN_MENU_STRING (hotkey)

```
[MAIN_MENU_STRING:<"STRING">]
```

When RF6xxAppRouter receives this string, the main menu of the applications will be opened. <STRING> can be any which comes from hand terminal as a plain string.
If the HS user presses "F10"-key it just sends "F10" string to the host.
If the HS user sends text in the initial field, it can be use also to open main menu.

Example: When HS user press F10 key, the main menu will be opened

```
MAIN_MENU_STRING:F10
```

2.2.4 MAIN_MENU_HEADER

```
MAIN_MENU_HEADER:<"Header string">
```

This string will be displayed in the main menu form as a header text.
(Max 20 char)

Example:

```
MAIN_MENU_HEADER:* RF600 Demos *
```

2.2.5 HOST_DOWN_TEXT

HOST_DOWN_TEXT:<"Host down text">

Example:

```
HOST_DOWN_TEXT:     Host down!       Try again later
```

Host down text will be printed as a PopMessage in the HS screen when connection to the specific host has been lost.

2.2.6 FIRST_STRING

When user selects application from main menu, predefined string will be sent to selected host. Hand terminal wait response from host. So, user gets user interface immediately after selecting host application.

Note. If FIRST_STRING is not defined in appList.txt, default string is empty, which is same as user press “OK” key from hand terminal.

Example:
```
FIRST_STRING:F1::F2
```

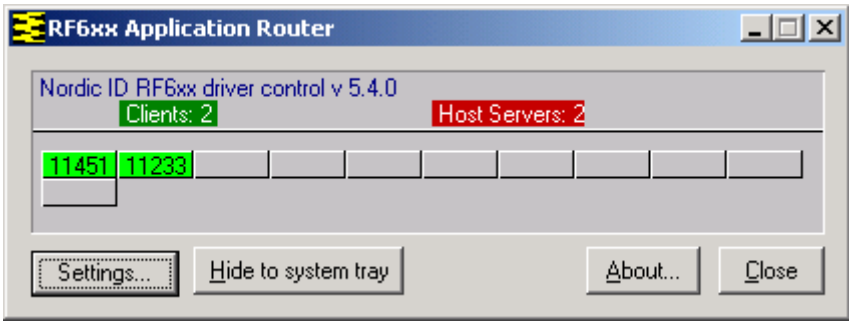
Above line define strings that will be sent to host when user select application. If user select upper application from main menu, “F1” (same as if user press F1 key) will be

sent to host app. When user select second app, then default string (empty string) will be sent to host
Selecting third app, “F2” will be sent to host.

3 User Interface

At normal usage, RF6xxAppRouter main window is hided and only visible is the RF6xxAppRouter icon in the system tray.

The user can bring main window visible by clicking system tray icon with the left mouse button.



3.1 Stored information in windows registry

Path of **connList.txt** and **appList.txt** and Autohide & AutoStart feature settings are stored in the registry.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Nordic ID\RF-Family\RF6xxAppRouter]
"connListFile"="C:\\Program Files\\Nordic ID\\RF-
Family\\RF6xxAppRouter\\connList.txt"
"appListFile"="C:\\Program Files\\Nordic ID\\RF-
Family\\RF6xxAppRouter\\appList.txt"
"AutoHide"=dword:00000001
"AutoStart"=dword:00000001
```

3.2 Automatic startup registry key

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run

Key name: “RF6xxAppRouter”
Key value: <Path to RF6xxAppRouter executable>