



SmartPTT File Transfer User's Guide

Version 2.0

Introduction

SmartPTT File Transfer was designed to transfer files over-the-air by means of MOTOTRBO radios. It is an easy-to-use and very helpful tool for transferring files of any type and size between two remote users, especially when radio connection is the only available means of communication.

In version 2.0 SmartPTT File Transfer allows receiving files without the server application or control stations. The user needs to have only a radio connected to the PC via USB port and the client application SmartPTT File Transfer version 2.0.

Note: Not all networks support the new scheme of file transfer. It is possible for IP Site Connect only. For other network types use the old file transfer method, i.e. using control stations and the server application SmartPTT File Transfer version 1.0 or 2.0.

Also, the new version allows you to have more than one pair of connected control stations to arrange parallel over-the-air data delivery.

To implement file transfer with SmartPTT File Transfer, two users, the Server (receiver) and the Client (sender), must have:

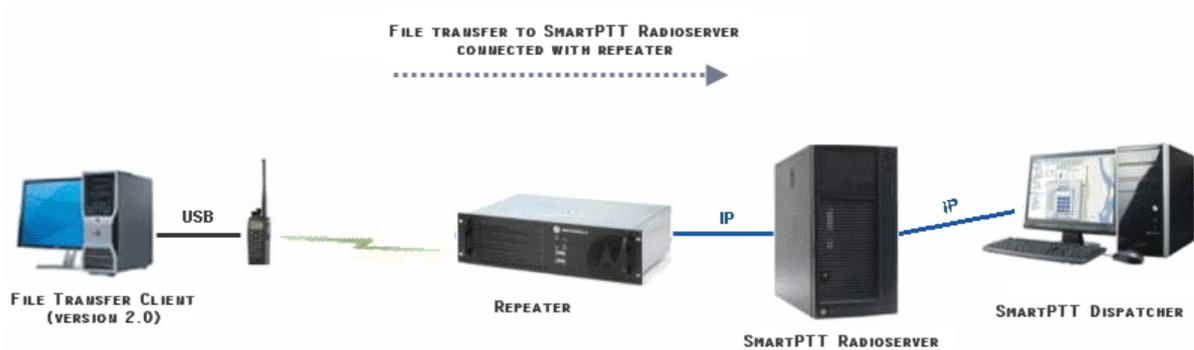
- In case of SmartPTT File Transfer version 1.0 or networks other than IP Site Connect – any of MOTOTRBO radios (DP340X, DP360X, DM340X, DM360X), USB data-cables for programming MOTOTRBO radios, PCs running Microsoft Windows XP SP3 or later.
- In case of SmartPTT File Transfer version 2.0 and IP Site Connect system – any of MOTOTRBO radios (DP340X, DP360X, DM340X, DM360X), MOTOTRBO repeater, USB data-cables for programming MOTOTRBO radios, PCs running Microsoft Windows XP SP3 or later.

The schemas below represent both SmartPTT File Transfer methods:

1. Between remote computers with control stations:



2. Between a remote computer and SmartPTT Radioserver (as a Server) with a repeater:



Note: In this configuration, the received file can be viewed in the specified radioserver folder or in the **View Server Files** window in SmartPTT Dispatcher.

This document outlines the necessary steps how to install, configure and use SmartPTT File Transfer.

System Requirements

Minimal Hardware Requirements:

- 1 GHz x86 processor (Pentium 4 or better)
- 512 MB of system memory (RAM)
- 10 MB of hard-drive space
- USB 2.0 port

Operating Systems:

- Microsoft® Windows® XP Service Pack 3 or later
- .NET Framework 4.0

Installation and Uninstallation

Installing SmartPTT File Transfer

1. Before running the installation program, make sure your computer meets the system requirements.
2. Run **SmartPTT File Transfer Setup.msi** to start the installation.
3. Follow the on-screen instructions and prompts.

4. The default path for SmartPTT File Transfer is "C:\Program Files\SmartPTT\SmartPTT File Transfer".

Uninstalling SmartPTT File Transfer

To uninstall SmartPTT File Transfer, use the Microsoft Windows **Add/Remove Programs** utility, accessible from **Control Panel (Start → Settings → Control Panel)**.

Using SmartPTT File Transfer

Before starting to work with SmartPTT File Transfer, you need to configure the radio and software in a proper way.

Note: In this guide, we will consider only those settings which are essential for files transfer.

It is assumed that the MOTOTRBO driver was installed on the user's computer and all the other required settings for radio correct functioning were made earlier.

Here is a simple step-by-step guide how to configure and to start using SmartPTT File Transfer.

File Receive Over-the-Air

To enable receiving files over-the-air the following steps should be taken:

1. Configure Client and Server radios with the help of CPS;
2. Configure routing settings for file transfer;
3. Configure the client application SmartPTT File Transfer 2.0.

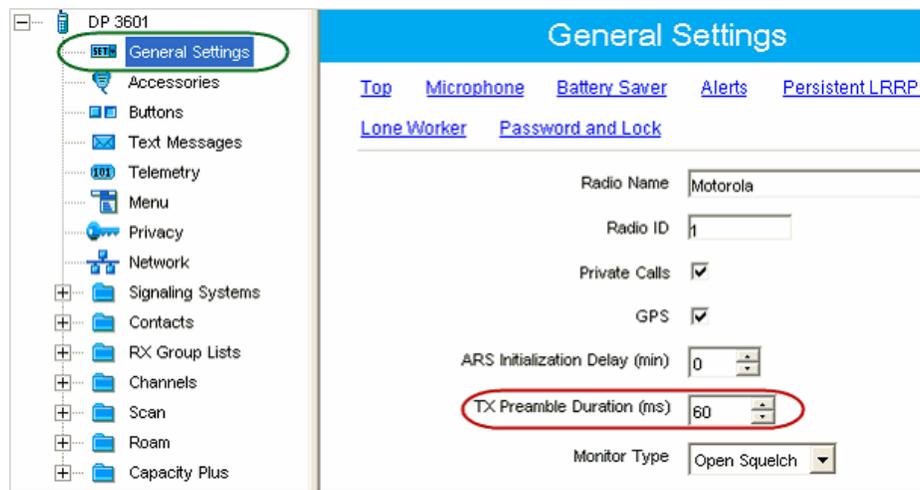
Configuring Radio Settings in CPS

Connect one end of the programming Data-cable to the radio and the other end to an available USB port on your computer. Power up the radio. Run MOTOTRBO CPS.

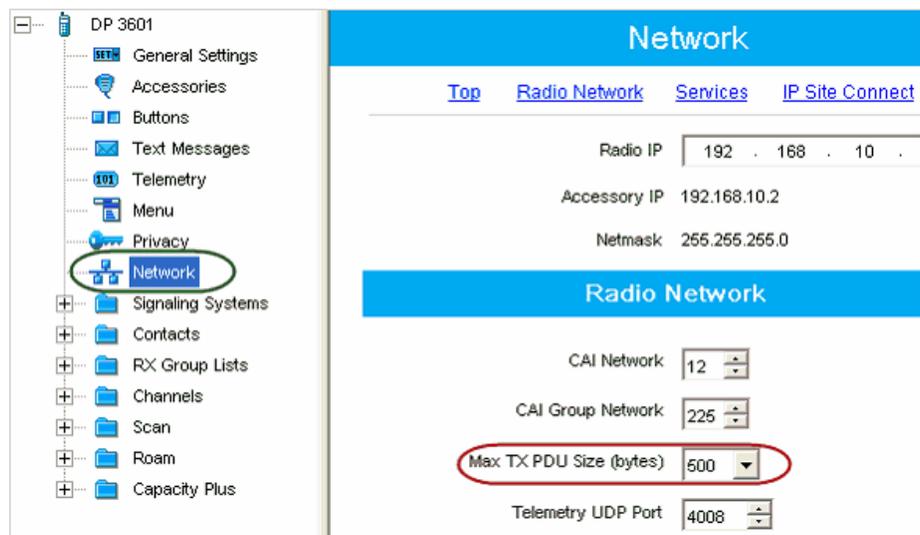
Steps for Client and Server radio setting up are identical.

1. Load the radio configuration either from the file (select **File → Open** at the menu bar or press **Ctrl+O**) or directly from the radio (select **Device → Read** at the menu bar or press **Ctrl+R**).
2. Make sure MOTOTRBO CPS opens up in the **Expert View** (if not – select *Expert* in the **View** list of the menu bar).
3. In the **General Settings** section of the **Tree View**, set **TX Preamble Duration** equal

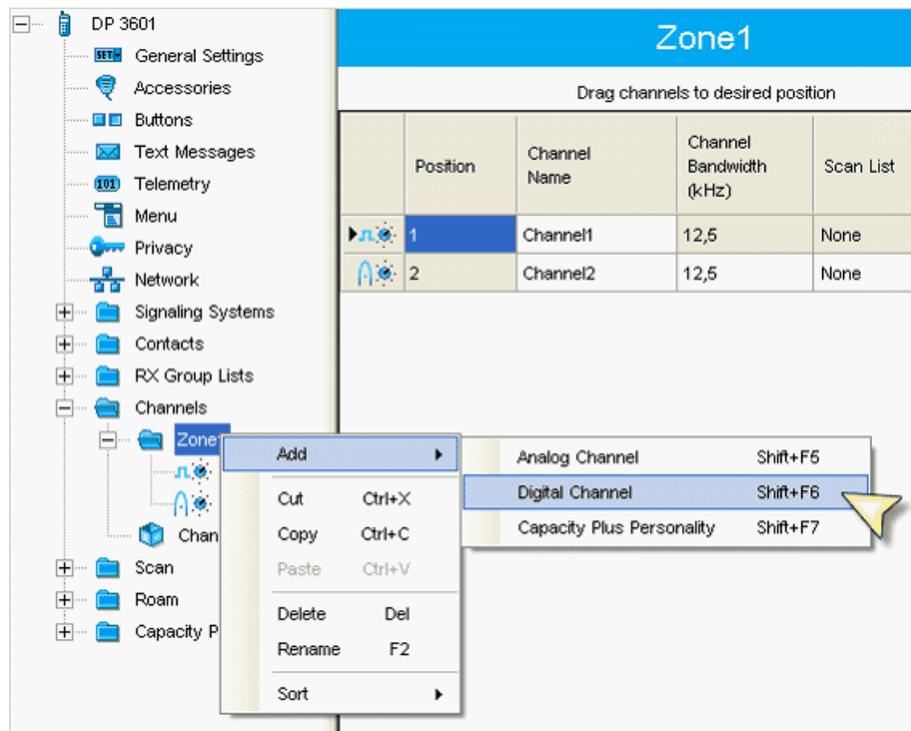
to 60 ms:



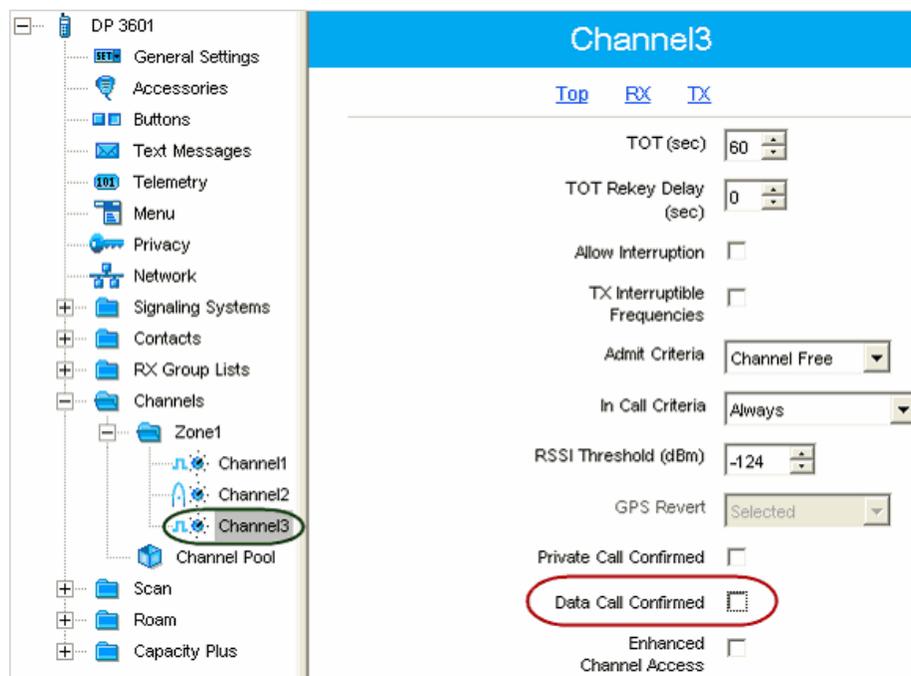
4. In the **Network** section of the **Tree View**, set **Max TX PDU Size** equal to 500 bytes:



5. Create a new digital channel:



6. In the created digital channel uncheck the **Data Call Confirmed** option:



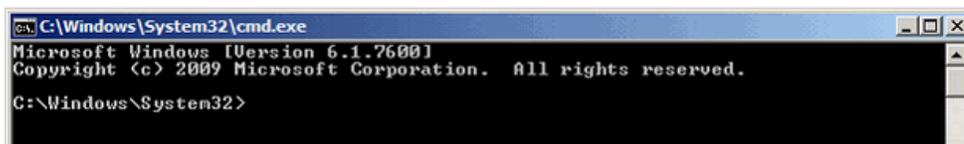
7. Save changes for the radio configuration. Select **Device** → **Write** at the menu bar or press **Ctrl+W**.

Configuring Routing Settings for File Transfer

In order to forward packets between Client and Server, a new route item must be added to the routing table, i.e. the IP address of the receiver and the IP address of the sender (gateway) must be specified.

A route table is configured by means of the console command **route.exe**.

Launch C:\WINDOWS\system32\cmd.exe:

A screenshot of a Windows command prompt window. The title bar reads "C:\Windows\System32\cmd.exe". The window content shows the following text: "Microsoft Windows [Version 6.1.7600] Copyright (c) 2009 Microsoft Corporation. All rights reserved. C:\Windows\System32>".

To add the route for outgoing data use a command:

route -p add [destination] [mask] [gateway]

-p – key to add a route to regular route list.

add – command to add a rout.

destination – radio IP address.

Note: Radio specified in the **destination** field must act as a Server Side.

mask – subnet mask.

gateway – source radio IP-interface.

Example:

To send data to Server radio with **IP address = 13.0.0.101** (**CAI-Network = 12**, **Radio ID = 101**), through a control station with **IP address = 192.168.10.1** use the following command:

route -p add 13.0.0.101 mask 255.255.255.255 192.168.10.1

```

Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>route -p add 13.0.0.101 mask 255.255.255.255 192.168.10.1
OK?

C:\Windows\system32>

```

To see a list of permanent routes, type a command **route print** in the command line.

At the bottom of the displayed list permanent routes will be shown:

```

Administrator: C:\Windows\system32\cmd.exe

192.168.0.0    255.255.255.0    On-link    192.168.0.169    266
192.168.0.169  255.255.255.255  On-link    192.168.0.169    266
192.168.0.255  255.255.255.255  On-link    192.168.0.169    266
224.0.0.0     240.0.0.0        On-link    127.0.0.1        306
224.0.0.0     240.0.0.0        On-link    192.168.0.169    266
255.255.255.255  255.255.255.255  On-link    127.0.0.1        306
255.255.255.255  255.255.255.255  On-link    192.168.0.169    266
=====
Persistent Routes:
Network Address    Netmask    Gateway Address  Metric
-----
13.0.0.101        255.255.255.255  192.168.10.1    1
=====

```

To add a single route record for multiple Servers, a corresponding subnet mask must be used.

Example:

To send data to the server radio with IP address in range *13.0.0.1 – 13.255.255.255* through a control station with **IP address** = *192.168.10.1*, use the following command:

```
route -p add 13.0.0.0 mask 255.0.0.0 192.168.10.1
```

To delete a route from the list of permanent routes, the **add** command should be changed to **delete** command.

Example:

```
route -p delete 13.0.0.101 mask 255.255.255.255 192.168.10.1
```

Note: If **-p** key is absent in the typed command, the route will be added to the active route, not

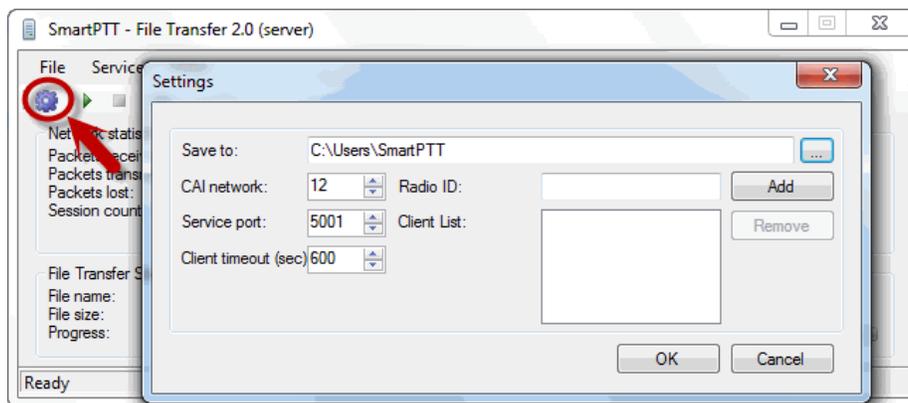
permanent. After the next reboot, the route will not be in the routing table.

SmartPTT File Transfer Settings

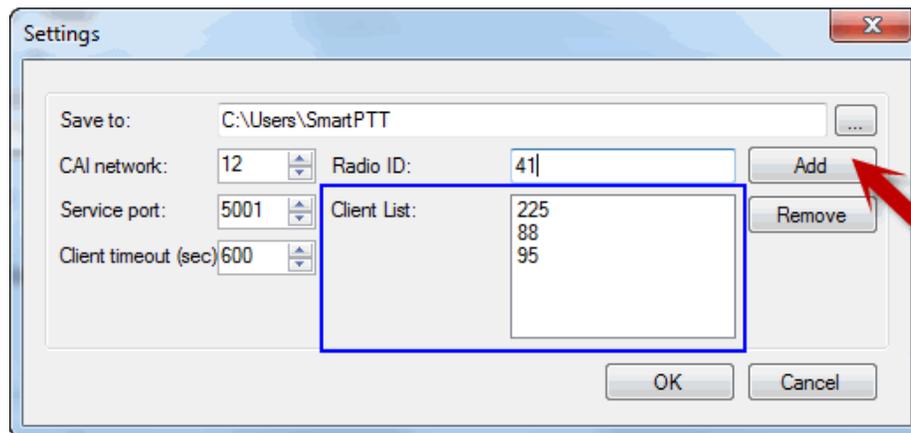
SmartPTT File Transfer Settings, relevant for the Receiver Side (Server) and the Sender Side (Client), are explained in the sections **Server Settings** and **Client Settings**, respectively.

Server Settings

1. Run SmartPTT File Transfer Server (**Start → Programs → SmartPTT File Transfer → SmartPTT File Transfer Server**).
2. Open SmartPTT File Transfer Server **Settings Menu** (click the **Settings** button in the **Tool Menu**):



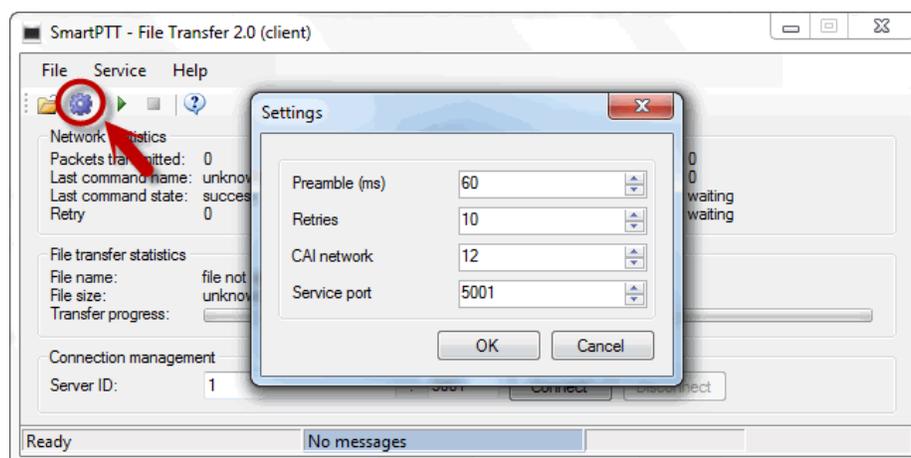
3. Select a received file folder or accept the default one.
4. Specify the **Radio ID** and click **Add**. A list of all radios selected for a file transfer session is displayed in the **Client List**:



5. Set the same value of the **CAI Network** as specified in the receiving radio configuration (MOTOTRBO CPS).
6. If necessary, set the **Service Port** and **Client Timeout** or accept the defaults.
7. Click **OK** button to confirm changes.

Client Settings

1. Run SmartPTT File Transfer Client (**Start → Programs → SmartPTT File Transfer → SmartPTT File Transfer Client**).
2. Open SmartPTT File Transfer Client **Settings Menu** (click the **Settings** button in the **Tool Menu**):



3. Specify **Preamble**. Note that its value must be the same as the specified one in MOTOTRBO CPS (see step 3 in [Client Radio Settings \(MOTOTRBO CPS\)](#)).

4. Set the same value of **CAI Network** as specified one in the radio configuration (MOTOTRBO CPS).

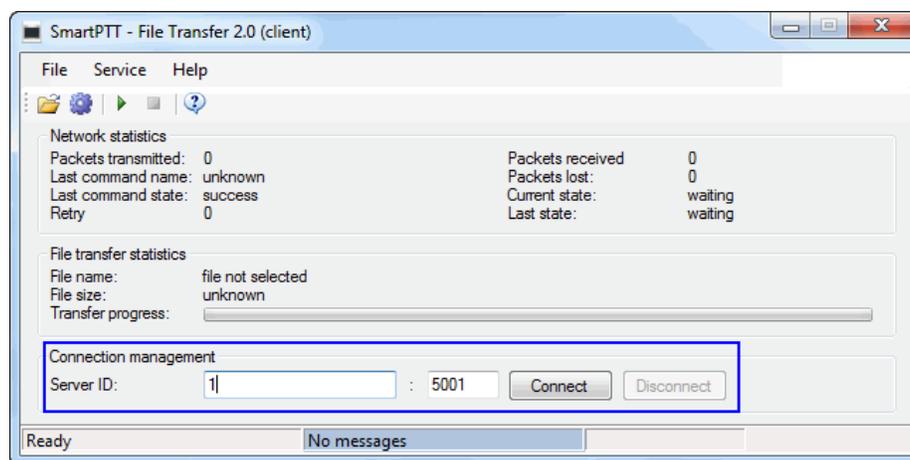
5. Change values of **Service Port** and **Timeout** or accept default values.

Note: **Service Port** is a port on which Clients receive service data from the Server radio.

Retries is the maximum number of connection attempts.

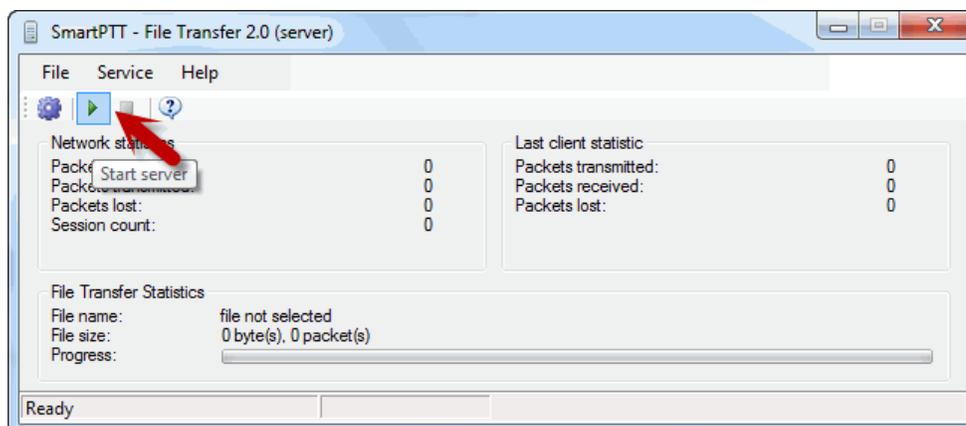
6. Click **OK** to confirm changes.

7. In the **Connection management** section specify the same values of **Server ID** and port number as for the Server Side.

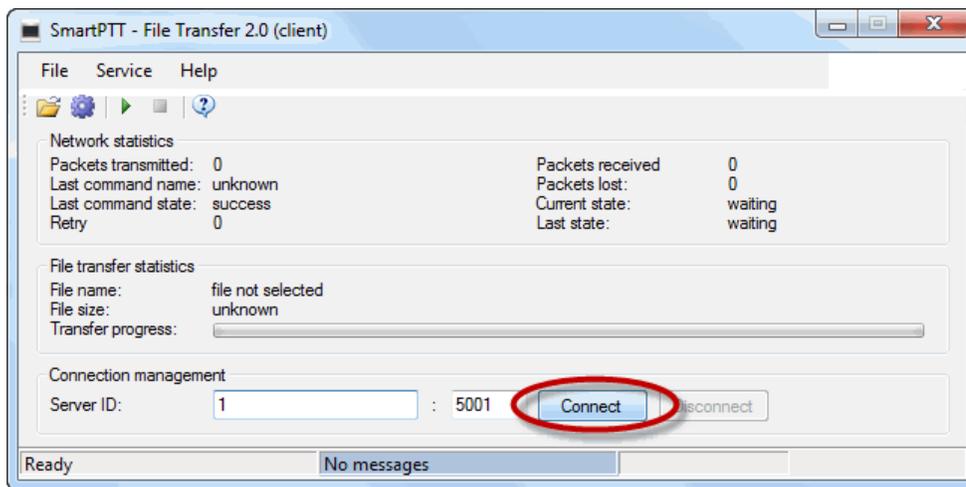


File Transfer

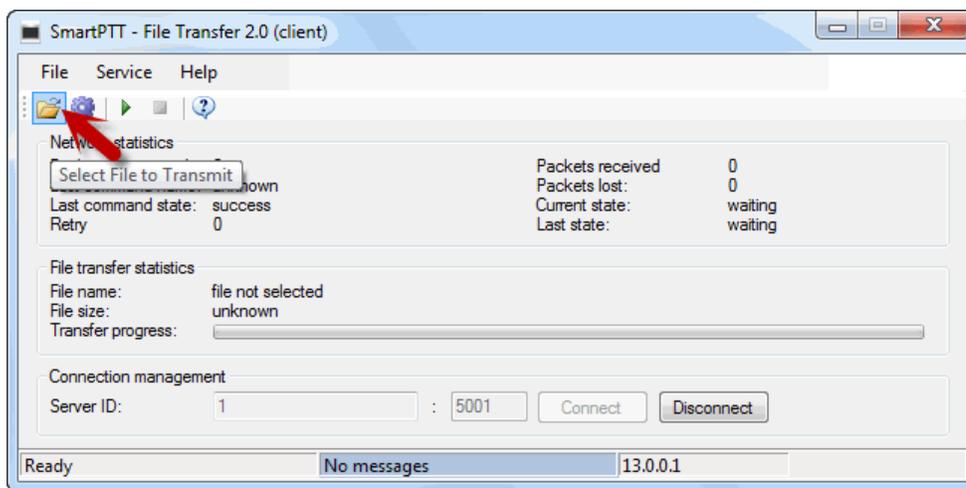
1. Set the Server in a ready-to-receive mode. To do that, click the **Run Server** button in the **Tool Menu**.



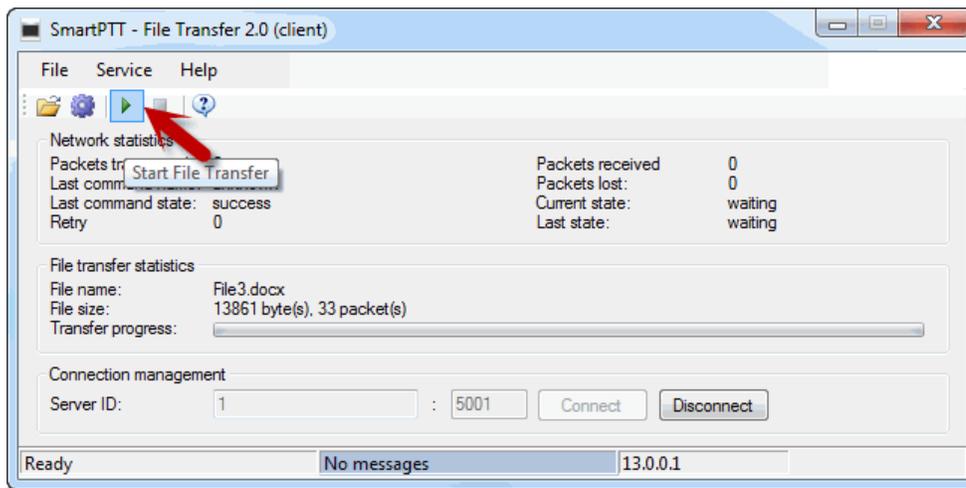
2. In the Client application, check the connection to the server:



3. Select files to transfer:



4. Click the **Start File Transfer** button:



The file transfer progress, success or failure for sending/received files are displayed in statistics sections (Network Statistics and File Transfer Statistics).

SmartPTT File Transfer statistical parameters and their description:

Statistical Parameter	Values and Description
Packets Transmitted	Number of data packets sent
Packets Received	Number of data packets received
Packets Lost	Number of lost packets
Last Command Name	See SmartPTT File Transfer commands table
Last Command State	Success or Error
Retry	Number of unsuccessful retries
Current State	Current Client state
Last State	Previous session status
File Name	In-progress file name

Statistical Parameter	Values and Description
File Size	Transferred file size

SmartPTT File Transfer Commands:

Command Name	Command Description
PUT_REQUEST_SID	Request for file transmission
PUT_SLICE_REQUEST_SID	Transfer part of a file to the Server
GET_LOST_LIST_SID	Request for a lost packet list
SAVE_TO_FILE_SID	Save received data into the file
ECHO	When the modifier is added to a Command, this means the Client is waiting for a Command Execution Acknowledgment.

File transfer stops if:

- A file was successfully transferred.
- File transmission was canceled by the Client (by pressing the **Stop Transmission** button ).
- No data was received from the Client during the time period longer than the one specified in the **Timeout** field.

If any of the mentioned events occur, the Client disconnects from the Server and the channel becomes free for the next Client connection.

On the Server Side, you can stop receiving files by pressing the **Stop Server** button .

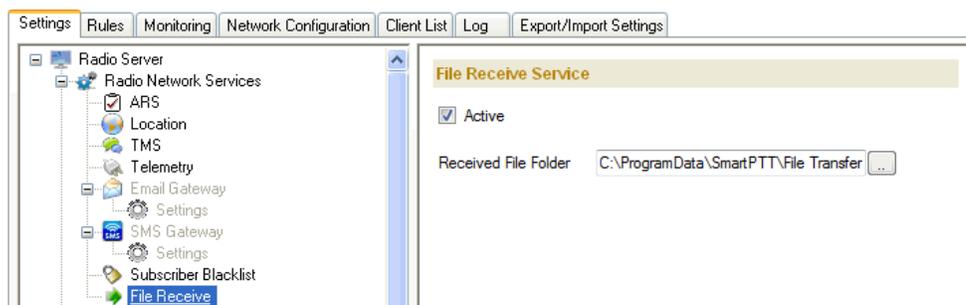
File Receive Without the Server Application or Base Stations

To enable receiving files without the server application or control stations the following steps should be taken:

1. Configure SmartPTT Radioserver settings;
2. Configure the radio with the help of CPS. See [Configuring Radio Settings in CPS](#);
3. Configure routing settings for file transfer on a remote computer. See [Configuring Routing Settings for File Transfer](#);
4. Configure the client application SmartPTT File Transfer 2.0.

Configuring SmartPTT Radio Server

To configure the settings, select the **File Receive** menu item in the left settings tree of SmartPTT Radioserver Configurator. At that, the following window opens on the right:



Active – enables the service.

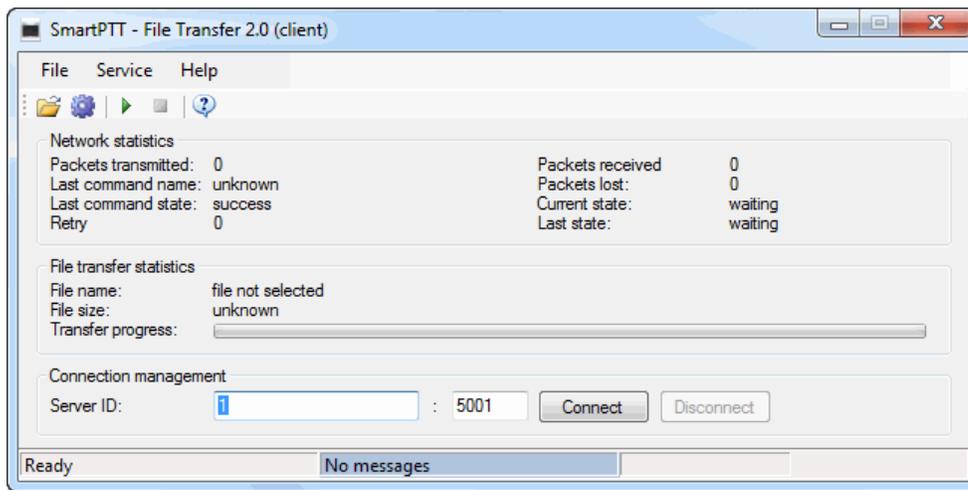
Received File Folder – field to specify the folder name where received files are to be stored.

To apply the changes, save the new settings and restart the radioserver.

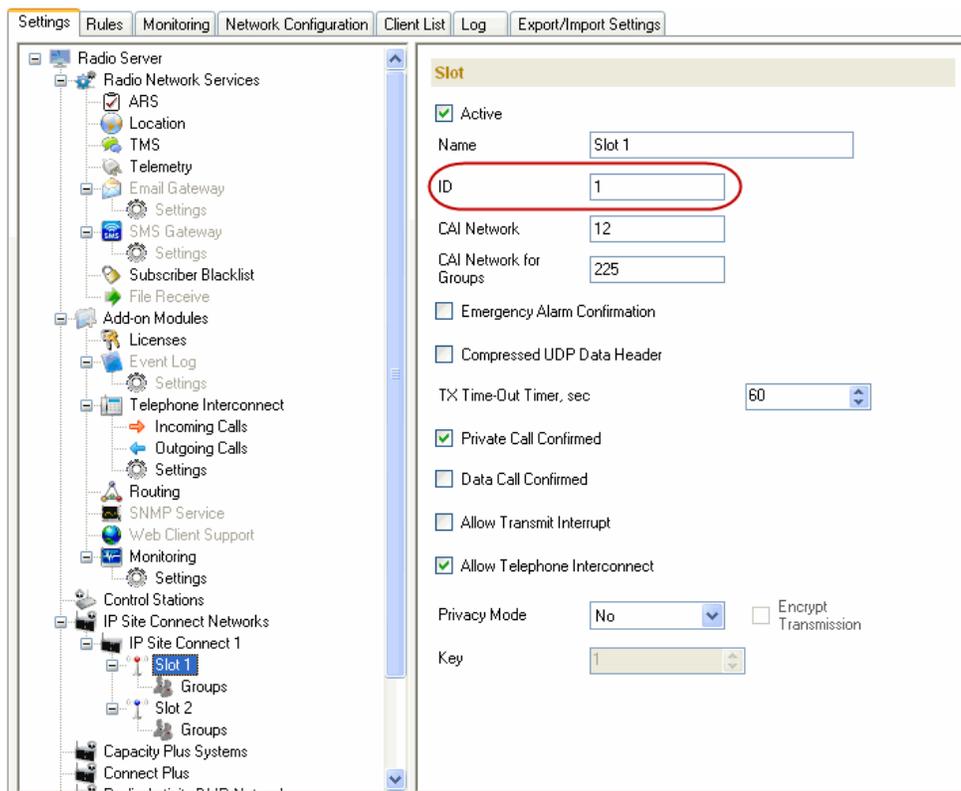
SmartPTT File Transfer Settings

Settings for SmartPTT File Transfer Client are similar to the case, when files are transferred over-the-air. SmartPTT File Transfer Server settings are not required since SmartPTT Radioserver acts as a Server.

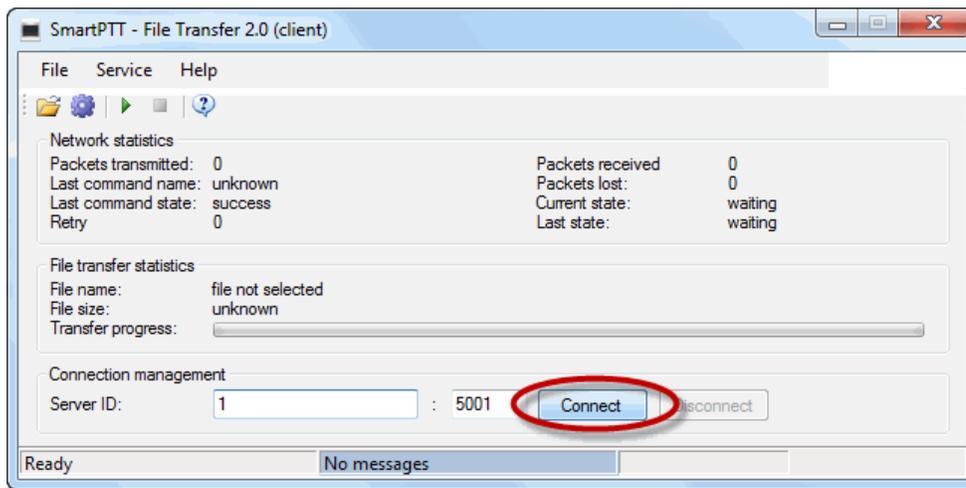
Launch the client application (**Start → All Programs → SmartPTT File Transfer → SmartPTT File Transfer Client**):



In the **Server ID** field enter the slot ID of the IP Site Connect, which will be used for file transmission. The slot ID is set in SmartPTT Radioserver Configurator, in the **Slot** window:

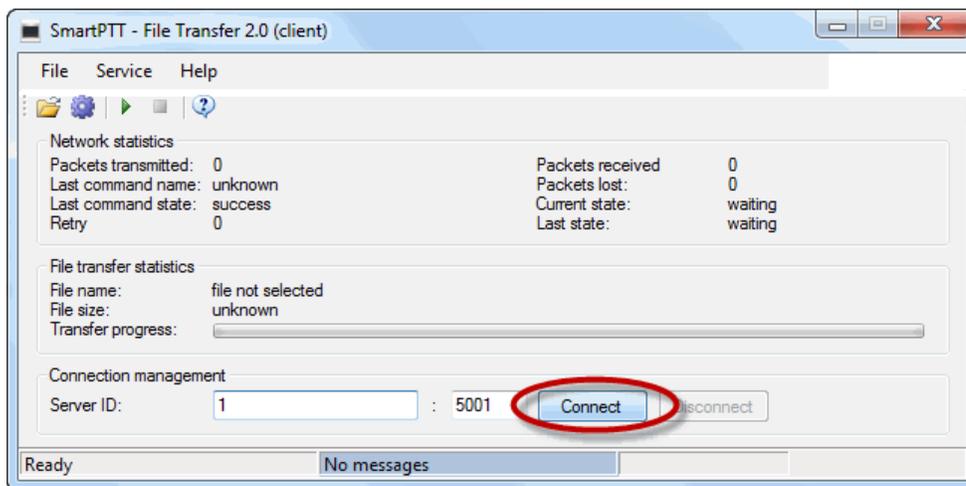


In the Client application, click the **Connect** button:

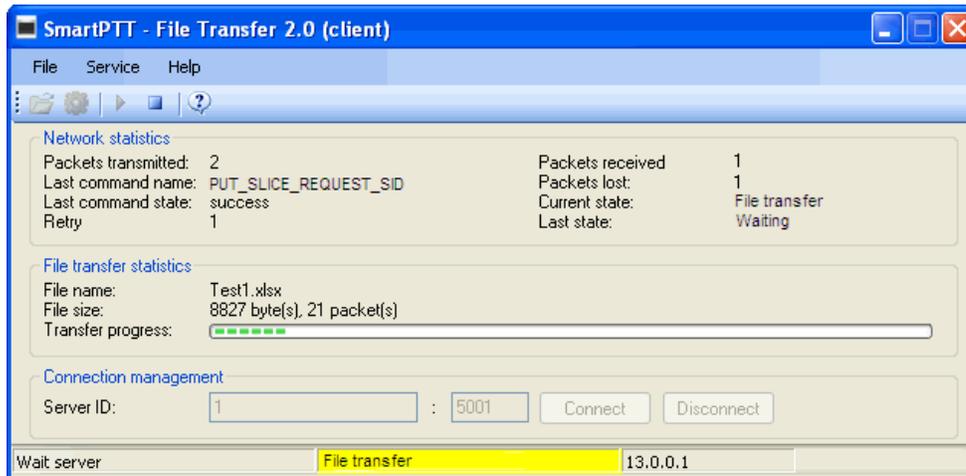


File Transfer

1. In the Client application, check the connection to the radioserver:

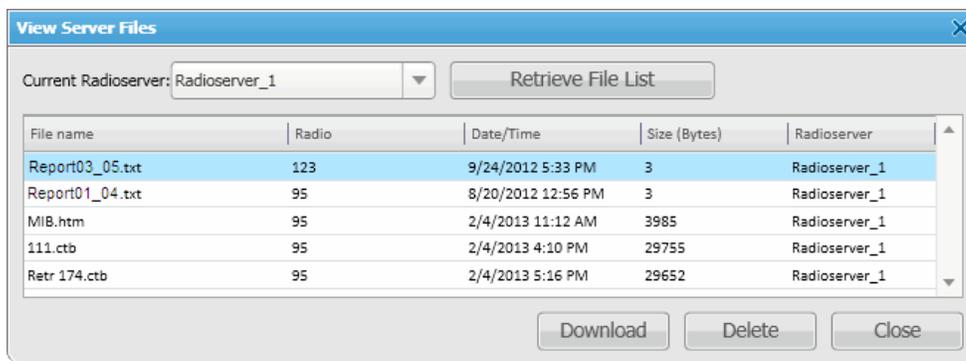


2. Select files to transfer and click the **Start File Transfer** button . File transfer from the radio to the radioserver will be started. In the **Current State** field (highlighted in yellow below) the "File transfer" message will be shown.



When the file transfer is over, in the **Current State** field (highlighted in green below) the "File Transferred" message will be shown.

Received files can be viewed in SmartPTT Dispatcher. To do this, expand the **Service** menu in the SmartPTT Dispatcher window **Main Menu** bar and click **View Received Files**. At that, the following window opens up:



Troubleshooting

If you run into a problem, which can occur during file transmission, refer to the troubleshooting table below.

Problem	Probable Cause	Solution
Unable to transfer file – the status in the status line is "No response from server".	Values of ID and CAI-address were set incorrectly.	Check Client and Server settings (CAI-address, Client ID, Server ID)
	Server radio is off or not accessible.	Check the "server radio – PC" connection
	Client ID is not included in the server list of clients permitted to transfer.	Make sure that the Client is included in the server list of permitted clients.

Technical Support

To receive extensive technical support, please contact our Customer Support Service:

E-mail: support@smartptt.com

Tel.: +7 (3822) 522-511

List of Terms and Abbreviations

Client – SmartPTT File Transfer application that sends files.

Server – SmartPTT File Transfer application that receives files.

MOTOTRBO CPS – *Customer Program Software* – a software tool for programming MOTOTRBO radios.

UDP – User Datagram Protocol.

CAI Network – Common Air Interface Network.