

BAOFENG DM-1701

CodePlug Programming Guide

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This guide has been
created by **Radiodity**
for their customers
to have even more fun with the
BAOFENG DM-1701 radio

INTRODUCTION

The BAOFENG DM-1701 radio is a Dualband VHF and UHF radio with both, digital DMR (true Tier I and II) as well as analog FM capabilities. It offers a total of 3,000 channels (Analog and Digital), Up to 10,000 manually addable contacts, and up to 120,000 contacts, as well as multiple DMR ID numbers (Radio ID's) for a single radio. With the enhanced capabilities of the DM-1701 radio, this Programming Guide will help users to understand all aspects of how to successfully program and set up the radio for maximum usability.

The computer programming software (CPS) created file that contains the frequencies and operating parameters is called a 'codeplug'. Creating a codeplug is a 'bottom up' process where the lowest (common) elements must be created first, then built upon until a fully functional codeplug has been created. With the DM-1701 computer programming software (CPS) you can create the codeplug and write it to the radio. A further aspect of the CPS is its capability of both 'importing' and 'exporting' large data files, such as contact names.

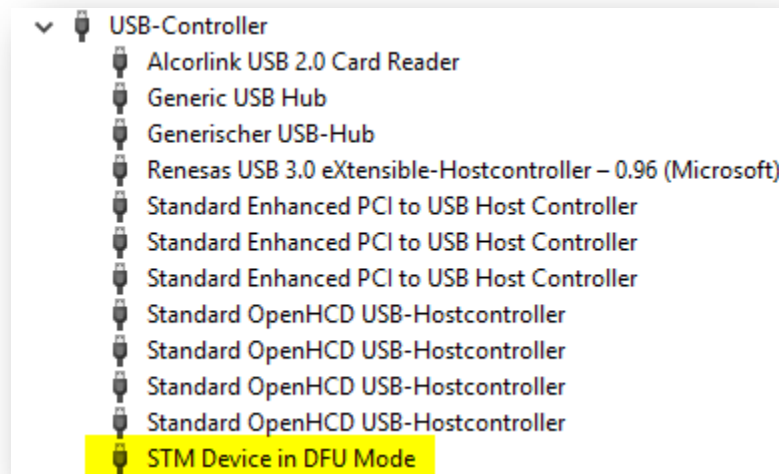
1 GETTING STARTED

The programming cable for the DM-1701 radio is typically provided by Radioddity. The USB programming cable has the typical USB Type A plug on one side (to plug into the proper USB-port of a PC) and a two pin 'K-1' connector to plug into the DM-1701 radio. In order to not mix up the cable with cables of other radios it is a good idea to place some permanent sticker onto the cable.

There is no circuitry inside the cable. Similar appearing cables with circuitry inside the cable (as often used for pure analog FM radios) will not work. In order for the PC to identify the DM-1701 it has to be connected using the appropriate cable. Furthermore the DM-1701 also needs to be turned on (remember: There is no chip inside the cable, thus the internal communication-port of the radio only gets identified on a powered-on radio).

1.1 USB driver to be loaded

Make sure the computer has loaded the appropriate driver for the cable – see the Device Manager on your PC. There is no further configuration of the driver required.



Picture 1: DM-1701 radio identified as STM Device in DFU Mode

If the driver does not load automatically, you can download the proper 32bit and 64bit drivers from <https://www.radioddity.com>

1.2 CPS and firmware updates made available by Radioddity

The Computer Programming Software (CPS) for the DM-1701 may be updated periodically as new features may be added. The Radioddity website will offer those updates at <https://www.radioddity.com>

Note:

The Software version should always match the Firmware version.

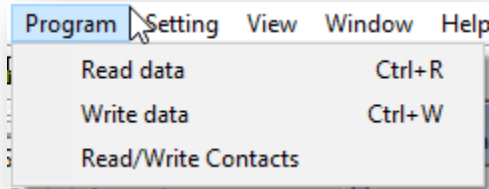
i.e. Software version 1.00 should always be used with Firmware version 1.00, etc.

This firmware is specific to this model only. Loading a DM-1701 firmware to a different model radio will not add extra features to that radio but quite likely make it unusable.

2 Programming the DM-1701

Before programming your radio, read the current information from the radio to your PC to create an initial CPS template and at the same time backup the factory data for future use.

When reading or writing data from or to the DM-1701, the software offers various possibilities:



Picture 2: Read data

2.1 Read data

To read in all frequency settings as well as further settings from your DM-1701 radio, use this option.

2.2 Write data

Whenever you have made your changes and additions to the settings of your DM-1701 radio use this option to write your settings to the radio.

2.3 Read/Write Contacts

The DMR Contact List can hold information on over 100K DMR IDs. A transfer from or to your DM-1701 radio may take up to 5 minutes.

2.3.1 Import DMR ID database to your CPS

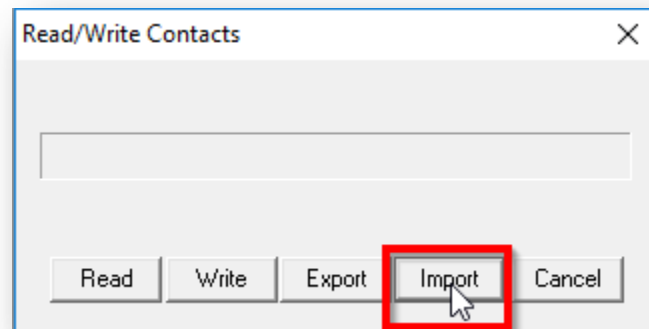
You can choose to download the full DMR ID database according to your needs. With its current 120k+ entries, the list contains almost all amateur radio DMR ID numbers in the world. You can find the DMR database at various sites, such as <https://ham-digital.org/status/>.

Make sure that your CSV-file looks similar to the following picture.

```
Radio ID,CallSign,Name,NickName,City,State,Country,;
1020000,VE1W,W,Canada,DMR;
1010000,VE1M,M,u,Canada,DMR;
1010000,VE1G,G,Canada,DMR;
1010000,VE1Y,L,a,Canada,DMR;
1010000,VE1J,N,J,y,Canada,DMR;
```

Picture 3: Content of CSV-File ready for import to CPS

If you have double checked the format of your CSV file you may then import it to your CPS



Picture 4: Import DMR ID database as CSV file

2.3.2 Transfer imported DMR database to DM-1701

After you have successfully imported the DMR ID database to your CPS you may then transfer it to your DM-1701 radio.

- Click on 'Program' -> 'Read/Write contacts'
- Select 'Write' within the popup window

Due to the size of the database, loading data may take more than 5 minutes.

2.3.3 Transfer DMR database from DM-1701 to PC

Of course it is also possible to transfer the DMR ID database stored within your DM-1701 to your PC.

- Click on 'Program" -> 'Read/Write contacts"
- Select 'Read' within the popup window. .

Due to the size of the database, loading data may take more than 5 minutes.

2.3.4 Export DMR database from CPS to PC

Finally you may even create a CSV file of the DMR database you just read from your DM-1701 using this last option of the 'Read/Write contacts" menu.

- Click on 'Program" -> 'Read/Write contacts"
- Select 'export' within the popup window. .

Note:

Bare in mind that you need to read the DMR database from the DM-1701 radio to the CPS before using the export functionality.

3 General setting

The DM-1701 radio supports quite a bunch of general settings. To get there use 'Edit' -> 'General Setting'

The screenshot shows the 'General Setting' menu for the DM-1701 radio. The settings are organized into several sections:

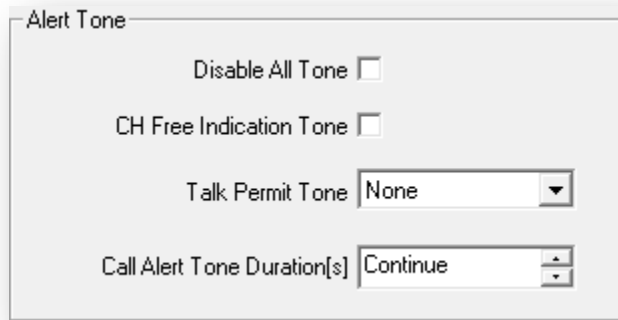
- Save:** Save Preamble (checked), Save Mode Receive (checked).
- Alert Tone:** Disable All Tone (unchecked), CH Free Indication Tone (unchecked), Talk Permit Tone (None), Call Alert Tone Duration (Continue).
- Scan:** Scan Digital Hang Time (1000), Scan Analog Hang Time (1000).
- Lone Worker:** Lone Worker Response Time (1), Lone Worker Reminder Time (10).
- Power On Password:** Password and Lock Enable (unchecked), Power On Password (00000000).
- Voice Announcement:** CH Voice Announcement (checked), Voice Announcement (English).
- Radio Name:** Radio Name (empty), Radio ID (1234).
- Monitor Type:** Monitor Type (Open Squelch).
- VOX Sensitivity:** VOX Sensitivity (3).
- TX Preamble Duration:** TX Preamble Duration (600).
- RX Low Battery Interval:** RX Low Battery Interval (125).
- Channels Hang Time:** Channels Hang Time (3000).
- PC Programming Password:** PC Programming Password (empty).
- Radio Program Password:** Radio Program Password (empty).
- Back Light Time:** Back Light Time (Always).
- Set Keypad Lock Time:** Set Keypad Lock Time (Manual).
- Freq/Channel Mode:** Freq/Channel Mode (Channel).
- Model Select A:** Model Select A (MR).
- Model Select B:** Model Select B (MR).
- Time Zone:** Time Zone (UTC +8:00).
- Diable All LEDS:** Diable All LEDS (unchecked).
- Group Call Match:** Group Call Match (checked).
- Private Call Match:** Private Call Match (checked).
- Talkaround:** Group Call Hang Time (3000), Private Call Hang Time (4000).
- Intro Screen:** Intro Screen (Picture), Intro Screen Line 1 (empty), Intro Screen Line 2 (empty).

Picture 5: General Setting

The following topics described those parameters used more often.

3.1 Alert Tone

The four parameters refer to tone prompts given in certain cases.



Picture 6: Alert Tone

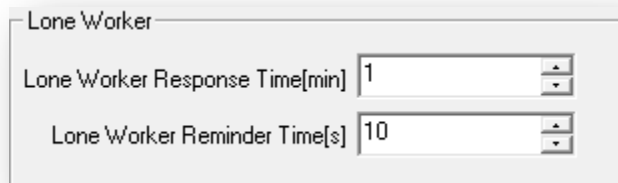
If you check 'Disable All Tone', you will not hear any prompts, even if you check 'CH Free Indication Tone' or 'Talk Permit Tone'. Both options would no longer be supported.

CH free indication tone: Indicates if the current channel is not transmitting and receiving, indicating a free channel.

Talk Permit tone: This alert tone sounds after the Push-to-Talk (PTT) button is pressed and the radio is able to transmit on the channel. This is to prompt the user to begin speaking.

3.2 Lone Worker

Lone Worker: This functionality is for establishing a convenient rescue. 2 operators have both started their separate work. If one of them does not perform any action during the set time (including pressing the PTT button, turn the knob) or pressing the button light), the other one will receive an alarm tone within a certain time

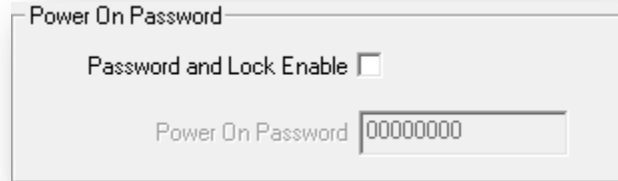


Picture 7: Lone Worker

With the corresponding settings, this function may be adjusted to the personal needs.

3.3 Power On Password

If you check 'Password and Lock Enable', it will be required to enter the specified 'Power On Password' in order to power on the radio.



Picture 8: Power On Password

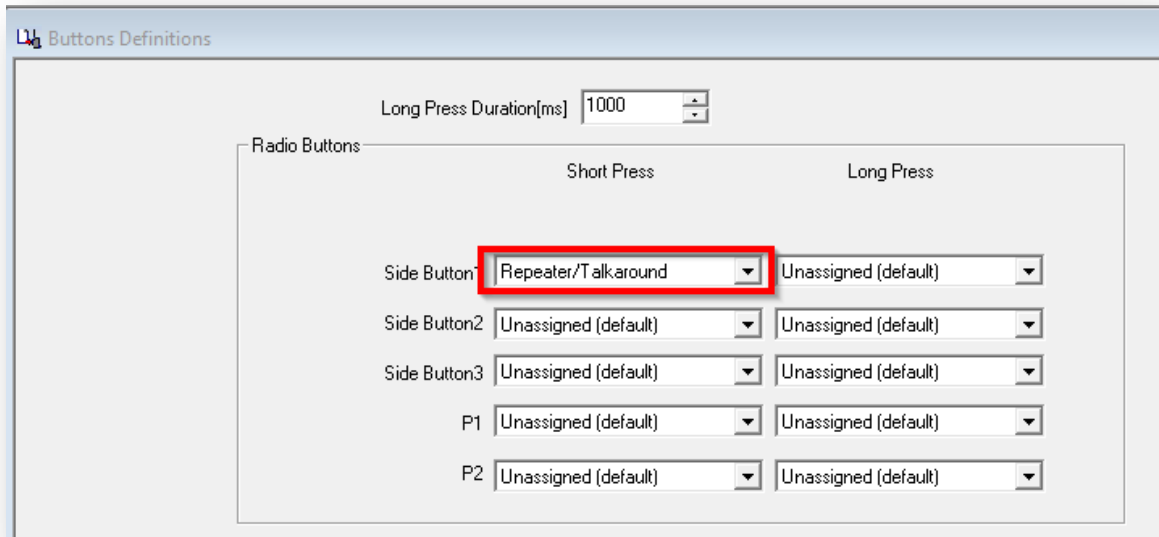
4 Basic settings

There are a few settings that do require special attention.

- If you set PC programming password, you must remember this password. If you forget it, there will be no way to retrieve it.
- You need to check the relationship between your local time and UTC to get a better time zone, or you can enter the time directly in the radio.

4.1 Talkaround

When the talkaround function is activated, the transmission and reception frequencies are exchanged with each other. You would only activate that function if you can no longer reach the repeater you had been working on, but knowing that the other station is in direct reach.

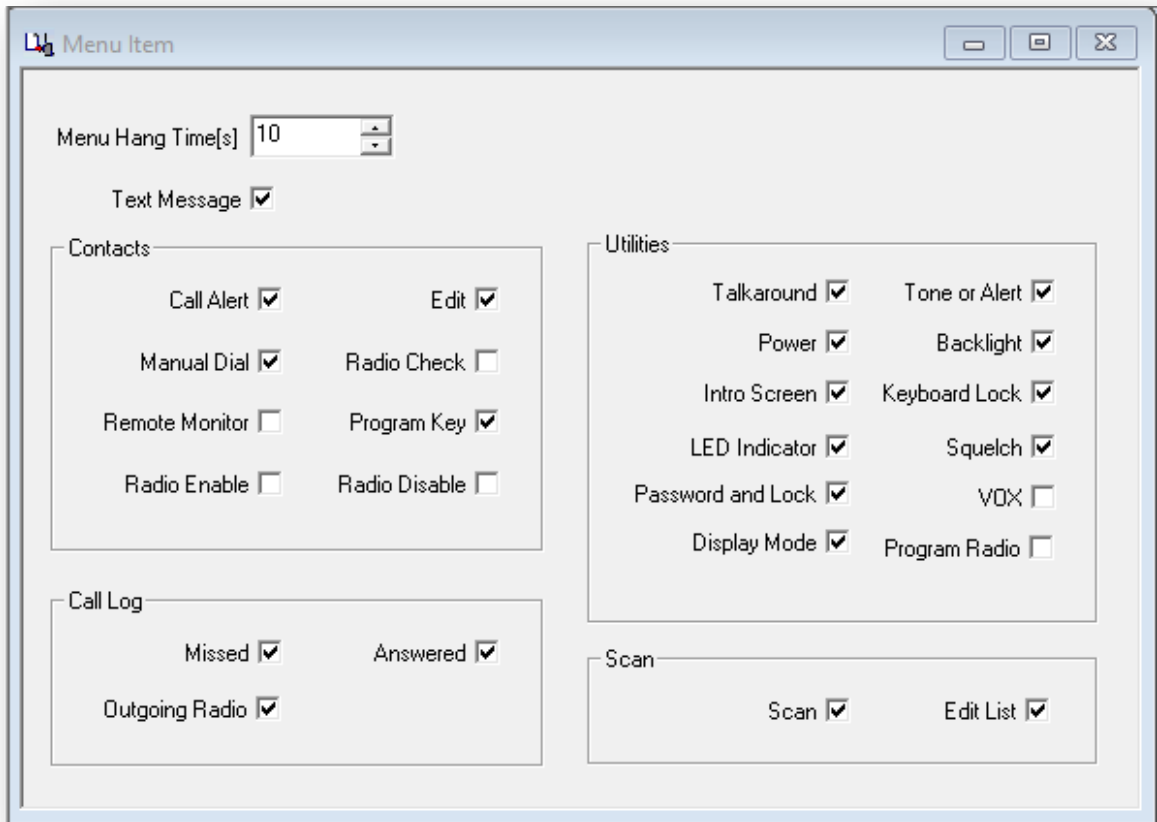


Picture 9: Assign Talkaround

The function may be assigned to one of the five programmable function keys. Side Button 1 is the top most one just above the PTT key. Side button 2 is the one with the single dot and Side Button 3 is the one with the double dots. P1 and P2 are above the numerical keypad.

5 Menu Item

Often not all those menus that are available are really required by the user. Thus in order to ease operation, you may disable certain menus to your personal requirements. Using 'Edit' -> 'Menu Item' you navigate to the corresponding configuration page within the CPS.



Picture 10: Menu Item

Those menu functions checked will later be displayed in the various menus of the DM-1701 radio. Those not checked will not be displayed and not become accessible on the radio.

6 Button Definitions

There are various buttons definitions possible:

- Radio Buttons
- One Touch Access
- Number Key Quick Contact Access

6.1 Radio Buttons

The radio buttons may even have two different functions assigned. One of the functions is been activated on a 'Short Press' of the corresponding keys whereas the other one requires a 'Long Press'. The 'Long Press Duration(ms)' defines the time period required to keep the key pressed in order to activate this 'Long Press' function.

| | Short Press | Long Press |
|--------------|--------------|--------------------|
| Side Button1 | Monitor | One Touch Access 1 |
| Side Button2 | Power Select | One Touch Access 2 |
| Side Button3 | Monitor | One Touch Access 3 |
| P1 | Scan On/Off | Battery Indicator |
| P2 | 1750Hz | Zone Select |

Picture 11: Radio Buttons

With the three side keys and the two keys named P1 and P2 you have a total of 5 programmable keys. Each of the keys has a function activated on 'Short Press' and another one activated on 'Long Press', resulting in a total of 10 different functions being directly accessible.

Those are your options:

- Unassigned (default)
- All Alert Tones On/Off
- Emergency On
- Emergency Off
- Power Select
- Monitor
- One Touch Access 1...6
- Repeater/Talkaround
- Scan On/Off
- Tight/Normal Squelch
- Privacy On/Off
- VOX On/Off
- Zone Select
- Battery Indicator
- Lone Work On/Off
- Record On/Off (firmware)
- Record Playback (firmware)
- Delete All Record (firmware)
- 1750Hz
- Switch Up/Down screen
- Right Key
- Left Key

Remark:

Those functions related to recording of transmissions are currently not available.

6.2 One touch access

There is a total of six 'One Touch Access' options. Each of them with its own 'Mode', 'Call', 'Call Type' and 'Message/Encode'

| No. | Mode | Call | Call Type | Message/Encode |
|-----|---------|----------|--------------|----------------|
| 1 | Digital | Contact1 | Text Message | Hello |
| 2 | Digital | Contact1 | Text Message | Hello |
| 3 | Digital | Contact1 | Text Message | Hello |
| 4 | Digital | Contact1 | Text Message | Hello |
| 5 | Digital | Contact1 | Text Message | Hello |
| 6 | Digital | Contact1 | Text Message | Hello |

Picture 12: One Touch Access

- **Mode:** select either 'Digital' or 'Analog'
- **Call:** If you select analog mode, this option is ignored. If you select digital mode, it will define the 'Digital Contact' to be used.
- **Call type:** In "Analog" mode, there will be four types of DTMF for you to choose from: 'DTMF-1','DTMF-2','DTMF-3' and 'DTMF-4'. In 'Digital' mode, you can choose between 'Call' and 'Text Message'.
- **Message/Encode:** If 'DTMF-1' has been selected as 'Call Type', this option defaults to encode '1'. If 'Text Message' has been selected as 'Call Type', you will be able to choose one of the preset SMS within the menu 'Text Message' you have defined already.

6.3 Number key quick contact access

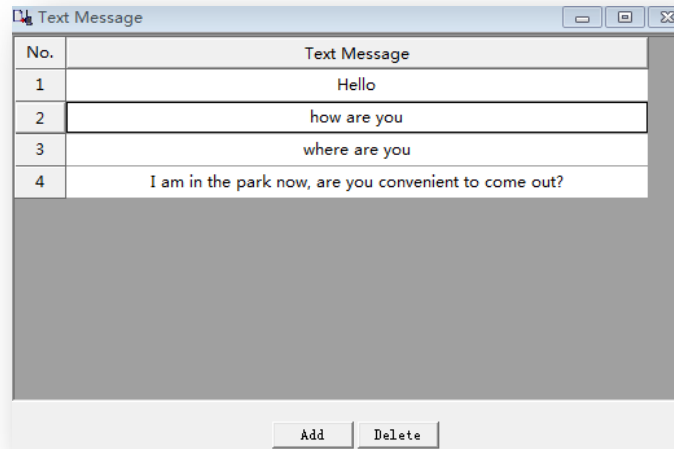
The numerical keypad of your DM-1701 has 10 numerical keys, numbered 0..9. Each of those keys can be connected to one of the defined digital contacts.. In order to access one of those assigned digital contacts, press and hold the corresponding numerical key.

| Number Key | None |
|-------------|------|
| Number Key0 | None |
| Number Key1 | None |
| Number Key2 | None |
| Number Key3 | None |
| Number Key4 | None |
| Number Key5 | None |

Picture 13: Number Key Quick Contact Access

7 Text Message

You can edit the quick text messages that you use frequently. After you save them to your DM-1701 radio, they all will be available in your 'Drafts'-folder. You can easily send them to the people you need to send without additional editing. Select 'Edit' -> 'Text Message' to get to the appropriate configuration page.



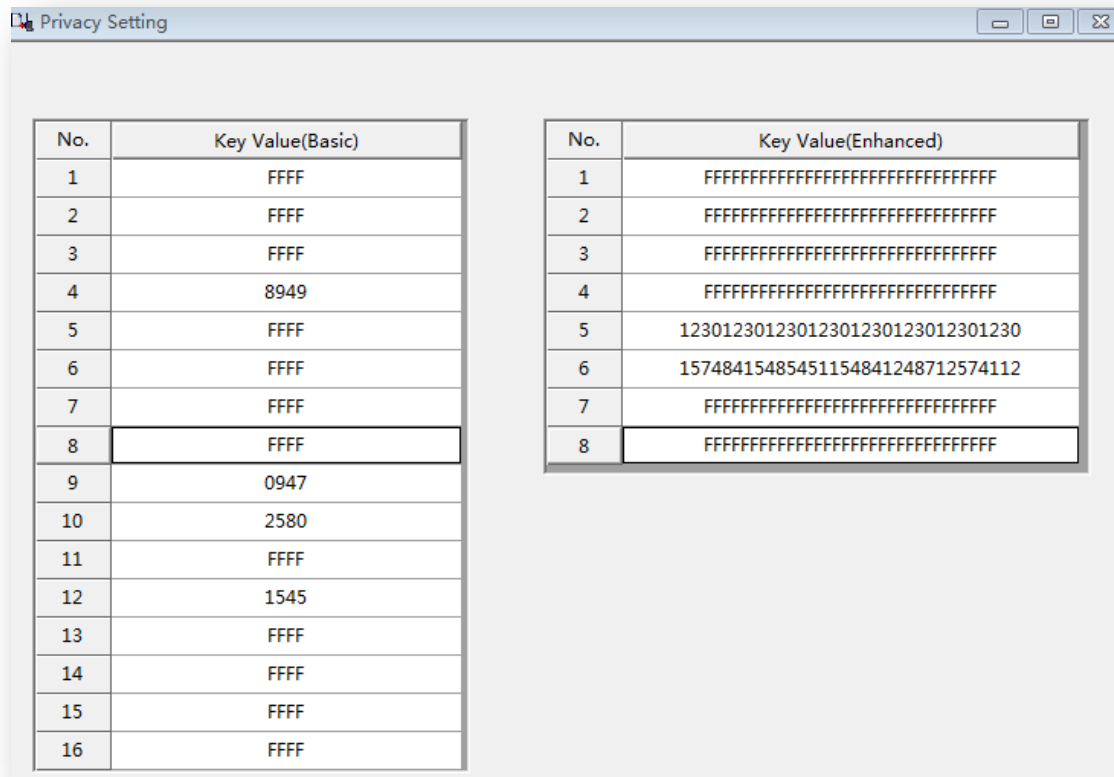
Picture 14: Text Message

8 Privacy Setting

Digital encryption is also supported by your DM-1701 radio. You can set the corresponding digital encryption password. The person you are talking to can only hear your voice by setting the same encryption password as you, avoiding other people hearing your call. Select 'Edit' -> 'Privacy Setting' to get to the appropriate configuration page.

Hint:

Encryption might not be allowed in your network.



Picture 15: Privacy Setting

- Key Value(Basic): consisting of four hexadecimal digits
- Key Value(Enhanced): consisting of 32 hexadecimal digits

9 Digital Emergency System

The availability of a digital emergency system depends on the digital network used. Select 'Edit' -> 'Digital Emergency System' and selected the system to edit.

| | | | |
|----------------------------|-----------------|---|----|
| Remote Monitor Duration[s] | 10 | <input checked="" type="checkbox"/> Radio Disable Decode | |
| Tx Sync Wakeup TOT[ms] | 150 | <input type="checkbox"/> Remote Monitor Decode | |
| Tx Wakeup Message Limit | 3 | <input checked="" type="checkbox"/> Emergency Remote Monitor Decode | |
| Emergency System | | | |
| System Name | System1 | Impolite Retries | 15 |
| Alarm Type | Regular | Polite Retries | 5 |
| Alarm Mode | Emergency Alarm | Hot Mic | 10 |
| Revert Channel | Selected | | |

Picture 16: Digital Emergency System

- System Name** This entry displays the name of the system. The user can enter up to 8 characters. Valid characters include letters, numbers, spaces, and special characters.
- Alarm Type** An alarm is a non-voice signal that triggers an alert indication on another radio. This feature specifies the behavior of the initiating radio's alarm when the emergency button is pressed.
- Alarm Mode** Defines the radio's behavior when the radio's emergency button is pressed.
- Impolite Retries** An impolite transmission is a transmission that occurs even when there is activity on the current channel. The radio tries a number of impolite transmissions to get an acknowledgement and then goes on

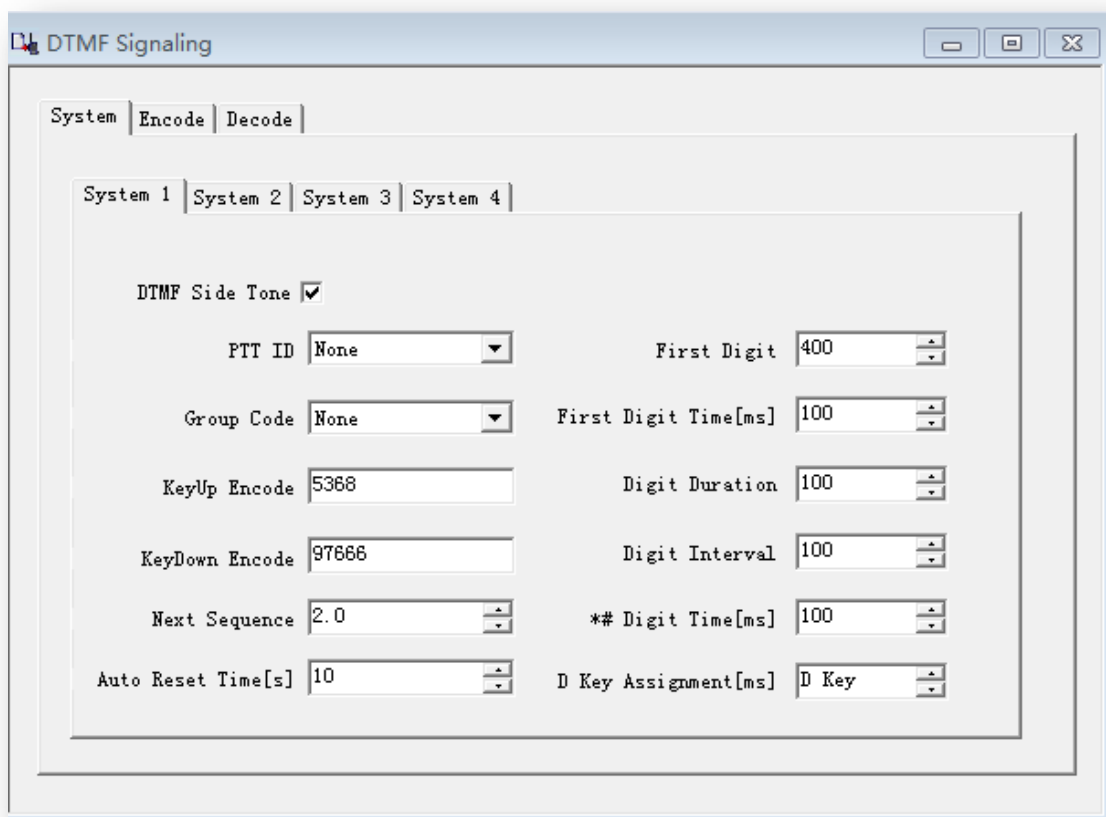
to try a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm impolitely.

Polite retries

A polite transmission is a transmission that occurs only when there is no activity on the current channel. The radio tries a number of impolite transmissions to get an acknowledgement before trying a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm politely.

10 DTMF Signaling

If the DM-1701 is used in a system that makes use of DMTF-signaling, certain settings need to be applied to the radio. Select 'Edit' -> 'DTMF Signalling' to get to the appropriate configuration page.



Picture 17: DTMF Signaling

- DTMF side tone** When the DTMF code word is been sent, the speaker issues the corresponding DTMF tones.
- PTT ID** select 'None', 'Pre Only', 'Post Only' or 'Pre & Post'.
- Group Code** You can use the DTMF characters 'A', 'B', 'C', 'D', '*' or '#' to set up a group called 'universal character code'. If the receiver receives a valid ID code and one or all of its digits are replaced by the 'universal character' group call code, the call will become decoded.
- KeyUp Encode** The analog channel transmits the PTTID corresponding to the DTMF code, as the channel is been activated by pressing the PTT.
- KeyDown Encode** The analog channel transmits the PTTID corresponding to the DTMF code, as the channel is been deactivated by releasing the PTT.
- Auto Reset Time** When the signal is decoded correctly, the automatic reset timer resets the DTMF decoder and mutes the speaker if there is no communication activity within a certain period of time. You do not need to perform a manual reset (using the monitor key). The timer starts running as the carrier drops.
- First Digit Time** Allows you to set the delay time from the start of transmission to the first DTMF digit (factor that takes the decoder start time into account). Increasing this time interval is the same as adding 'First Code Duration'.
- Digit Duration** Allows you to set the delay time from the start of the launch to the first DTMF digital transmission (considering the factors that start the decoder's time). Increasing this interval is the same as increasing the duration of the first code.
- *# Digit Time [ms]** This parameter is extending the # * sound transmission time. In some systems, these two codes must be set longer than the numerical codes.

11 VFO Mode

The VFO mode is the similar to the normal channel mode in terms of the various parameters. Select 'Edit' -> 'VFO Mode' to get to the appropriate configuration page.

The screenshot shows the 'VFO Mode' configuration window. It is divided into three main sections: Digital/Analog Data, Digital Data, and Analog Data. The Digital/Analog Data section includes settings for Channel Mode (Analog), Band Width (25kHz), Squelch (Normal), RX Frequency (155.12500 MHz), TX Frequency (155.12500 MHz), Admit Criteria (Always), RX Ref Frequency (Low), TX Ref Frequency (Low), Step (2.5K), Auto Scan, Lone Worker, VQX, and Power (High). The Digital Data section includes checkboxes for Private Call Confirmed, Emergency Alarm Ack, Data Call Confirmed, Allow Interrupt, and DCDM Switch, as well as dropdowns for Leader/MS (MS), Emergency System (None), Contact Name (WW), Group List (GRP-TS1), Color Code (1), Repeater Slot (1), In Call Criteria (Always), Privacy (None), and Privacy No. (1). The Analog Data section includes dropdowns for CTCSS/DCS Dec (None), CTCSS/DCS Enc (None), Rx Signaling System (Off), Tx Signaling System (Off), QT Reverse (180), and Non-QT/DQT Turn-off Freq (55.2Hz), along with checkboxes for Display PTT ID and Reverse Burst/Turn-off Code.

Picture 18: VFO Mode

The displayed mode can be set in the overall general settings.

The screenshot shows the 'General Setting - VFO' configuration window. It contains three dropdown menus: 'Freq/Channel Mode' set to 'Freq', 'Model Select A' set to 'VFO', and 'Model Select B' set to 'MR'.

Picture 19: General Setting - VFO

12 Prepare for DMR operation

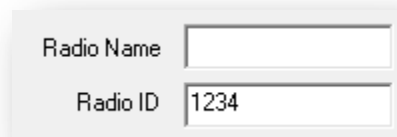
12.1 Request a valid DMR RADIO ID

To operate on the DMR network, you must register for a DMR identification number. This can be done at <https://www.radioid.net/> or <https://register.ham-digital.org/>, depending on where you live.

Normally new DMR IDs are issued within 24 hours.

Your DMR ID can now be entered into the CPS.

- Click on 'Edit' -> 'General settings'



| | |
|------------|----------------------|
| Radio Name | <input type="text"/> |
| Radio ID | 1234 |

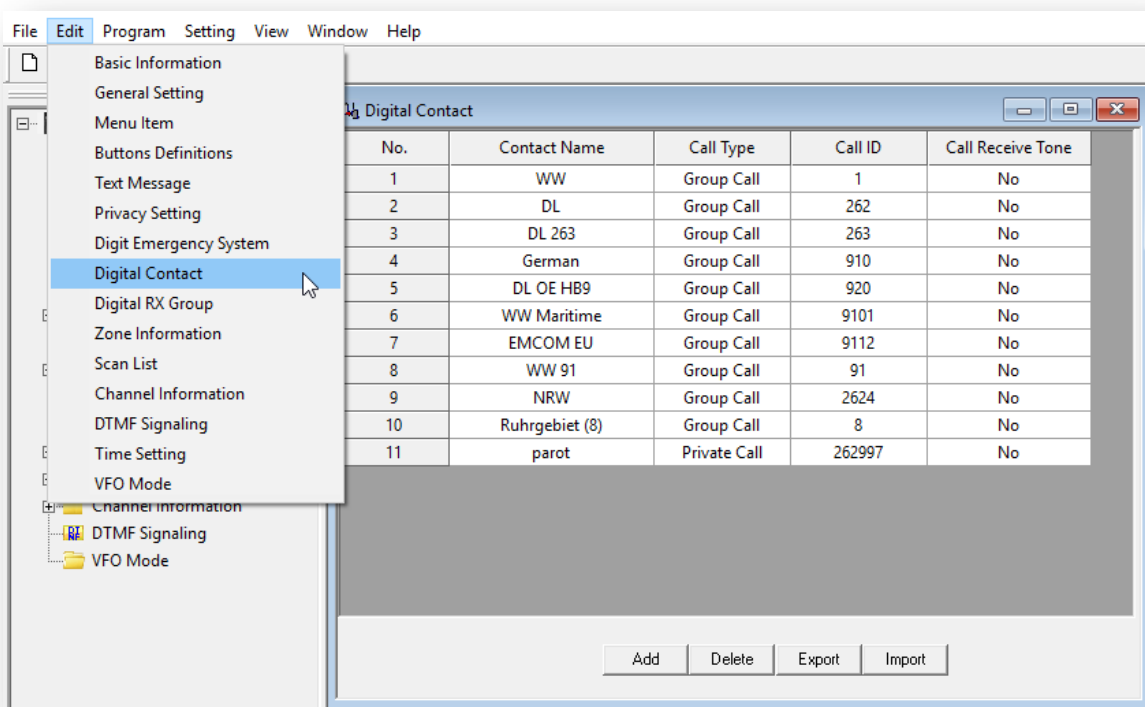
Picture 20: store your call sign and your DMR Radio ID

Note:

Never ever operate the radio using an ID that is not issued to yourself. Within amateur radio networks this may result in losing your license.

12.2 Digital Contacts (besides those of the DMR database)

Up to a maximum of 10.000 digital contacts can be stored separately from the DMR database. However, if the DM-1701 is used within an amateur radio DMR network such as Brandmeister (BM), those digital contacts would normally rather be used for so called talk groups (TG). Select 'Edit' -> 'Digital Contact' in order to work on those digital contacts.



Picture 21: Digital Contacts

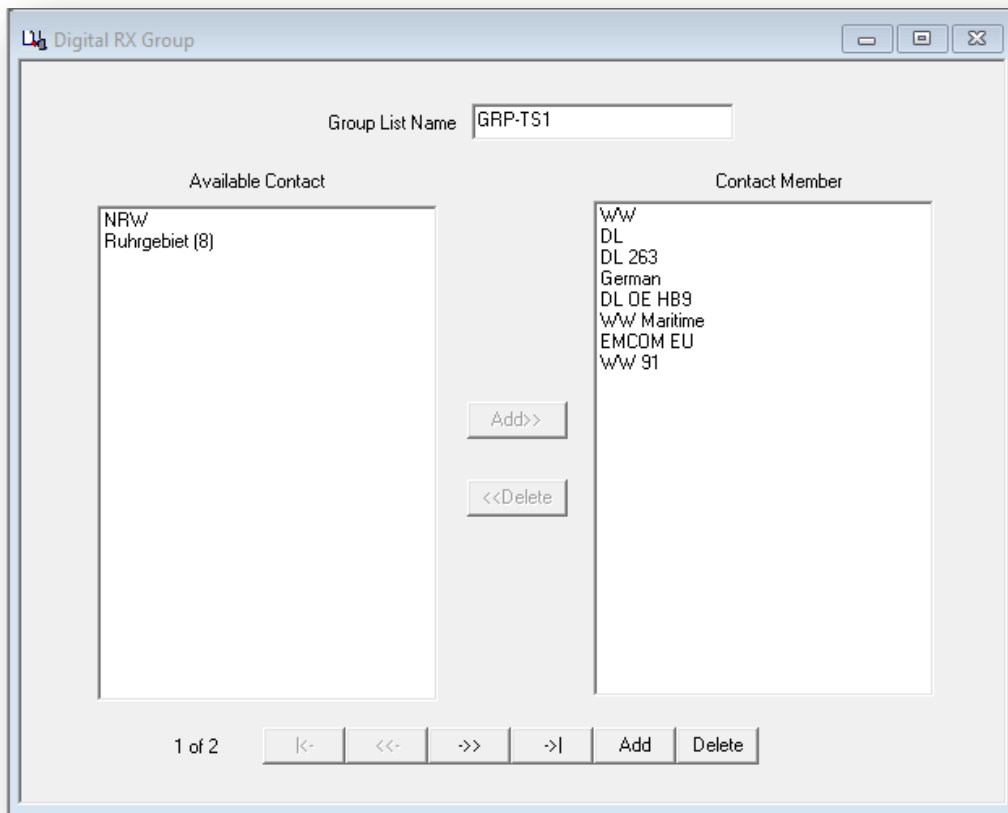
| | |
|-------------------|---|
| No | entry within the list of digital contacts (up to 10k entries) |
| Contact Name | Name to be displayed for this digital contact |
| Call Type | You may select between: <ul style="list-style-type: none"> • Group Call • Private Call • All Call |
| Call ID | ID for a digital call member or talk group. This ID is used to identify and communicate with a target radio (DMR ID) or group of radios (TG) depending on the call type |
| Call Receive Tone | An alert tone sounds on the receiving radio prior to unmuting during a 'Group Call', 'Private Call' or 'All Call'. This feature is set on a per-call basis. |

12.3 Digital RX Group Call

You will require a so called 'Digital RX Group' for your Channel settings. Creating such a group allows you to put your configured 'contacts' into logical groups so they can be contacted.

- Up to 250 individual Digital RX groups can be created and named to identify each group.
- Each group can contain as few or as many contacts as convenient.
- groups should be named according to their group members (Digital Contacts).
- Only contacts set as group calls can be added to a group

To work on such groups use 'Edit' -> 'Digital RX group'. A typical group may look like shown in the next picture



Picture 22: Typical Digital RX group

13 Channel settings

The DM-1701 offers up to 3000 channels for UHF and VHF. To start double click on the first line No.1 to open the Channel Information window for that channel:

Channel Information

Digital/Analog Data

Channel Mode: Analog Channel Name: Channel3

Band Width: 12.5kHz RX Frequency (MHz): 400.00000

Scan List: None TX Frequency (MHz): 400.00000

Squelch: Normal Admit Criteria: Always

RX Ref Frequency: Low Auto Scan:

TX Ref Frequency: Low Rx Only:

TOT [s]: 60 Lone Worker:

TOT Rekey Delay [s]: 0 VOX:

Power: High Allow Talkaround:

Digital Data

Private Call Confirmed:

Emergency Alarm Ack:

Data Call Confirmed:

Allow Interrupt:

DCDM Switch:

Leader/MS: MS

Emergency System: None

Contact Name: None

Group List: None

Color Code: 1

Repeater Slot: 1

In Call Criteria: Always

Privacy: None

Privacy No.: 1

Analog Data

CTCSS/DCS Dec: None CTCSS/DCS Enc: None

Rx Signaling: Off Tx Signaling System: Off

QT Reverse: 180 Non-QT/DQT Turn-off Freq: None

Decode 1: Decode 5:

Decode 2: Decode 6:

Decode 3: Decode 7:

Decode 4: Decode 8:

Picture 23: Channel Information

Let's have a very short explanation of all those fields:

| | |
|--------------------------|---|
| Channel name | The name of the channel (should be unique) |
| Receive Freq | the VHF or UHF frequency |
| Transmit Freq. | the VHF or UHF frequency |
| Channel mode | Select 'analog' and 'digital' |
| Band Width | Select the bandwidth for transmission |
| Scan List | Select which Scan List(s) will be scanned |
| squelch | Sets the encoding type that the radio will transmit on that channel |
| Admit criteria | Selects PTT transmit criteria – typically same ColorCode |
| Long worker | Check if the 'alone' emergency function should be allowed |
| TOT | the radio can continuously transmit before a transmission is automatically terminated |
| VOX | Voice Operated Transmit) |
| Power | Select one of four levels 1W/2W/5W |
| Digital | |
| contact | Talk Group (TG) to be assigned to this channel |
| DMR/radio ID | Select which of the DMR ID's to use for this channel |
| Color code | Select which Color Code (CC) is related to this channel |
| slot | Select which slot (1 or 2) applies to this 'Channel' |
| Group list | If programmed, select the RX Group List |
| privacy | Select 'off', 'basic' or 'enhanced' to use for encryption. |
| Analog | |
| CTCSS/DCS Decode | Select Off or CTCSS or DCS and tone frequency |
| CTCSS/DCS Encode | Select Off or CTCSS or DCS and tone frequency |
| RX signaling | Select off,DTMF-1,DTMF-2,DTMF-3,DTMF-4 |
| TX signaling system | Select off,DTMF-1,DTMF-2,DTMF-3,DTMF-4 |
| QT Reverse | Select 180,120,240 or silent |
| Non-QT/DQT turn-off Freq | Select none,259.3Hz,55.3Hz |

Once completely filled in, click OK to save this Channel.

13.1 Spread Sheet Option

For large amounts of channel data, this may be a desired method as it allows cut and paste of large amounts of data. This is especially desired when adding multiple repeaters with similar configurations.

The current channel configuration can be exported to a csv file, enhanced and finally imported back to the CPS.

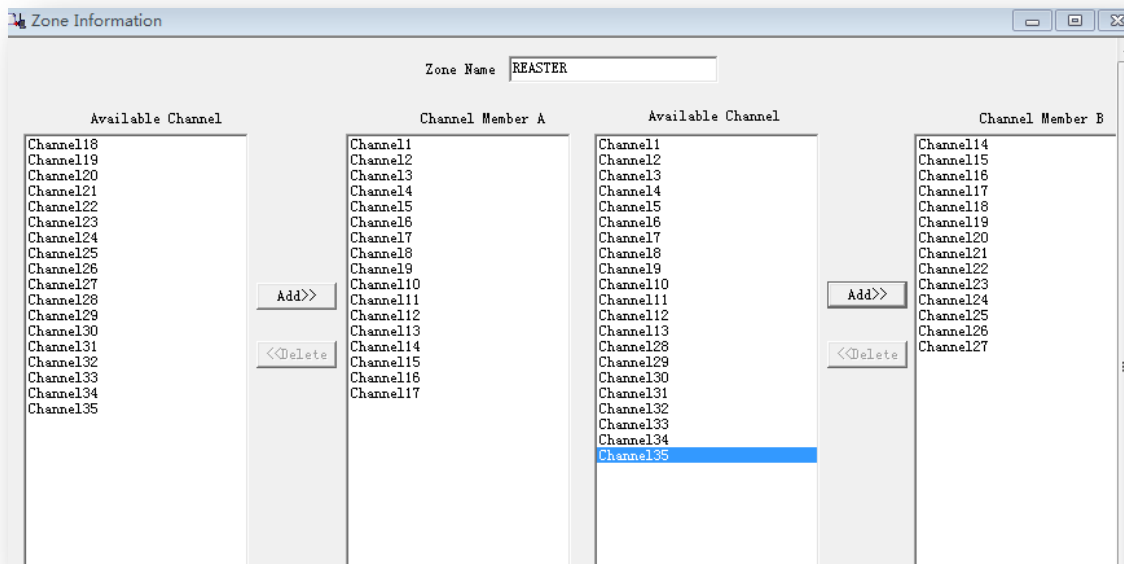
Hint:

Always save data files for recovery purposes.

14 Zones to bundle channels

Creating a 'Zone' allows you to put your previously configured 'channels' into logical groups so they can be accessed.

- Up to 250 individual zones can be created and named to identify each channel group.
- Each zone can contain as few or as many channels as convenient.
- Zones can be named to identify repeaters, functions, etc.
- The channels in each zone can be sorted or rearranged in any order.



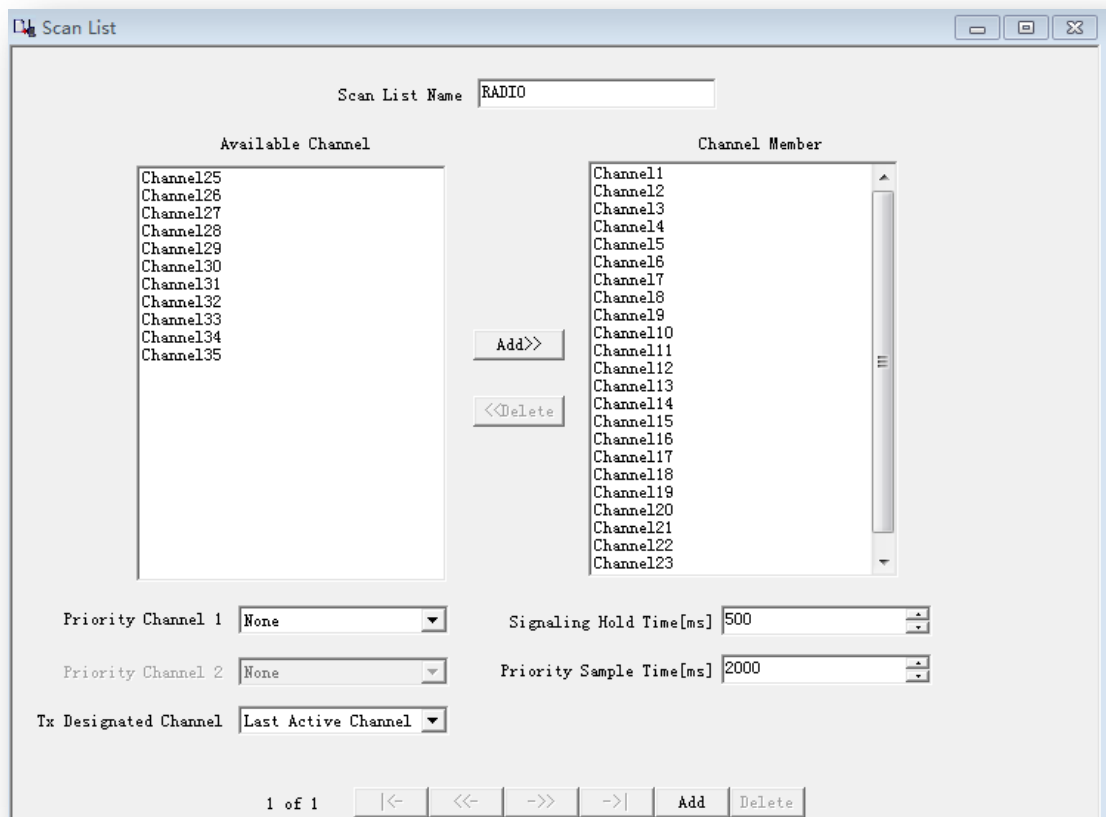
Picture 24: Zone Information

15 Scan List

A 'Scan List' is a group of channels to be monitored when the 'Scan'-function is been activated using one of the programmable function keys. The DM-1701 has the capability of storing multiple scan lists per channel.

1. Select Scan List from the left column
2. Double click on the first open line
3. Enter a name for the new Scan List
4. Highlight the channel name you want to appear in the list and press 'Add>>'.

Up to 31 channels can be loaded into an individual list. You also have the ability to sort or rearrange the channels in this list. The scan list will later be assigned to a channel of your choice during the setup of a channel (see section on channels).



Picture 25: Scan List

| | |
|--------------------------------|--|
| Scan List Name | Name given to group of scanned channels |
| Available Channels | Will list the channels available to scan |
| Scan Channel Member | List of channels to be scanned |
| Priority Channel select | Select the priority channel or 'off' |
| Priority Channel 1 | Sets which channel is priority 1 |
| Priority Channel 2 | Sets which channel is priority 2 |
| Signaling hold time | Sets the amount of time that the radio waits on an analog scan list channel when a carrier signal of sufficient amplitude is detected on the channel. This pause allows the radio to decode the analog system signaling data. If the decoded information is incorrect, the radio reverts to scan. |
| Priority sample time | Sets the duration that the radio waits, when in a call, before scanning the priority channels. If the call is taking place on a Priority 1 Channel, no scanning will take place. When scanning priority channels, the radio briefly mutes the current transmission. Increasing this interval improves the audio quality of the current transmission as fewer checks are done, but this also increases the chance of the radio missing out priority channel activity. |
| TX designated channel | This feature defines the conventional channel/trunking personality on which the radio will transmit if the user presses the Push-to-Talk (PTT) button while the radio is scanning. |

Note:

You can add the same channel to multiple scan lists.

16 write data to radio

After you have completed all the above steps, you can write the data to the DN-1701 radio.