

5-TONE CONFIGURATION GUIDE FOR MOTOTRBO™ RADIOS

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ASSUMPTION

It is assumed that the reader is familiar with Select-5 (a.k.a. 5-tone) signalling; radio communications systems and

INTRODUCTION

To illustrate the operation of Select-5 and to assist technicians with the configuration thereof, I have presented a configuration example that shows how PTT-ID; Radio Check; Selective Call; Stun/Unstun and Emergency work.

In this configuration example, the following numbering plan is used. Each sequence will consist of six digits (tones). The first two digits (XX) effectively differentiate between each function in the following ways. The remaining digits (YYYY) are used to identify the team/department and radio by means of a fleetmap.

Transmitted Sequence:	XX	YYYY
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Values for XX	Function
00	Auto-acknowledge (YYYY = 0000)
01	PTT-ID
02	Selective Call
03	Radio Check (a.k.a. Silent Interrogate)
04	Stun (Radio Disable)
05	Unstun (Radio Enable)
06	Emergency

Since it does not require to convey caller details, the auto-acknowledge contains all zeros – 000000.

PTT-ID

The first; most often used feature in Select-5 is PTT-ID. This causes the radio to send a unique identity every time a user transmits. This identity is decoded by all radios with a display and the name (or number) of the transmitting radio is shown on the screen (if present).

Note that this is only applicable to 5-Tone/Analogue and can only be achieved in radios which support this signalling format.

The Sequence must contain the digits to be transmitted. There are two options, either fixed, preconfigured numbers or a sequence containing the variable digits U1 to U8.

Sequence Name	Signaling System	Sequence	Pertime (ms)	Extended 1st T
PTT-ID	System 1	01(U1U2U3U4)	140	0

In this case, U1U2U3U4 is used which means that the actual numbers are derived from the corresponding digits from the 5-tone ID section in General Settings.

5 Tone ID

U1	9
U2	1
U3	8
U4	6

In this case, when transmitting the above sequence as shown, the radio will send 019186. The first two digits remain untouched as these would be used for the other functions described below but U1U2U3U4 come from the above.

The above sequence would be sent as part of a telegram. A telegram can consist of between one and three sequences - in this case, there is only one.

Telegram Name	Sequence 1	Sequence 2	Sequence 3	Acknowledge Expected
<i>Tel1</i>	PTT-ID	None	None	None

In order to send the above telegram on all voice transmissions, one needs to define whether it shall be sent at the beginning or end of a voice transmission (i.e. a call initiated by pressing the PTT). This is done in the 5-Tone channel set in the TX Section.

PTT Keyup Mode	Every PTT
PTT Keyup Encode	Tel1
PTT Dekey Encode	None

In this case, the PTT-ID is sent at the beginning of the transmission. It is also possible to have this sent at the end of the transmission (i.e. when the user releases the PTT button) but this will cause the other radios to only display the transmitting radio's ID when the user has finished talking (and while someone else is).

The above alone will be sufficient for the radio to send a PTT-ID, with every PTT-initiated voice transmission. To have a display model radio decode and display 01YYYY for example, there needs to be a Decoder Definition with the following settings.

Definition Name: PTT-ID

5 Tone Signaling System: System 1

Decoder Type: General

Group Type: Standard

Decoder Sequence 1: 01(A1A2A3A4)

Group Sequence 1: [1-19]

Decoder Sequence 2: [Empty]

Group Sequence 2: [1-19]

Decoder Sequence 3: [Empty]

Group Sequence 3: [1-19]

Call Forwarding Acknowledge: None

Telegram 1st Tone Duration (ms): 0

Auto Reset Start:

Call Answer Timer:

Call Back:

Auto Acknowledge: None

Matching Encode Telegram: Tel1

Private Call Tone: None

Group Call Tone: None

The Decoder Sequence here is 01(A1A2A3A4). Upon receiving 012123 for example, the radio will look for 2123 in the contact list. If no entry with those exact numbers is found, the receiving radio will simply display 2123 whenever this specific user transmits. If a matching contact list entry is found, the radio will display the name associated with that entry (in the below case: Shinwell Johnson).

Contact Name		Call Type	Call ID
Shinwell Johnson		5 Tone Calls	2123

The decoder definition also needs to be enabled (selected) for all channels where PTT-ID will be used, as shown below.

5 Tone Decode

Decode Telegrams

PTT-ID

It is important that Auto Reset Start is disabled (unticked) in this case. It is also important that the Private Call Tone and Group Call Tone are also disabled (set to None) as enabling them will make the radio beep unnecessarily whenever another radio user speaks. All other settings should be left as is.

SELECTIVE CALL

Using the PTT-ID configuration example as a basis, to send a selective call to another radio, there needs to be two sequences added. One containing the identity of the target radio (in this case, SelCall1) and the other containing the identity of the calling radio (in this case: Selcall2).

Sequence Name	Signaling System	Sequence	Pertime (ms)	Extended 1st T
PTT-ID	System 1	01(U1U2U3U4)	140	0
SelCall1	System 1	02(A1A2A3A4)	140	0
SelCall2	System 1	02(U1U2U3U4)	140	0
Auto-Ack	System 1	000000	140	0
Stun	System 1	04(A1A2A3A4)	140	0
Unstun	System 1	05(A1A2A3A4)	140	0
Emergency	System 1	06(U1U2U3U4)	140	0
Radio Check	System 1	03(A1A2A3A4)	140	0

Note that the first two digits in this case are now 02 - this is to differentiate it from 01, which is used for PTT-ID.

The Selcall1 and SelCall2 sequences are sent in Tel2.

Telegram Name	Sequence 1	Sequence 2	Sequence 3	Acknowledge Expected
Tel1	PTT-ID	None	None	None
Tel2	SelCall1	SelCall2	None	ACK1
Tel3	Auto-Ack	None	None	None
Tel4	Radio Check	None	None	ACK1
Tel5	Stun	None	None	ACK1
Tel6	Unstun	None	None	ACK1
Tel7	Emergency	None	None	None

ACK1 means that an auto-acknowledge is needed for the call to complete - this is optional. The auto-acknowledge will come from the target radio.

There also needs to be two Decoder Definitions, one for the radio to decode an incoming selective call and the other to decode the auto-acknowledge coming back from a called radio.

Definition Name	SelCall
5 Tone Signaling System	System 1
Decoder Type	General
Group Type	Standard
Decoder Sequence 1	02(U1U2U3U4)
Group Sequence 1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Decoder Sequence 2	02(A1A2A3A4)
Group Sequence 2	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Decoder Sequence 3	
Group Sequence 3	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Call Forwarding Acknowledge	None
Telegram 1st Tone Duration (ms)	0
Auto Reset Start	<input checked="" type="checkbox"/>
Call Answer Timer	<input type="checkbox"/>
Call Back	<input type="checkbox"/>
Auto Acknowledge	Auto-Ack1
Matching Encode Telegram	Tel1
Private Call Tone	Ringer 1
Group Call Tone	Ringer 1

Note that:

1. Decoder Sequence 1 in SelCall is 02(U1U2U3U4). This will cause this radio to sound an alert whenever 029186 (or whatever is entered into 5-Tone User ID) is received.
2. Positions 2-6 of Group Sequence 1 are selected. This will allow the radio to receive a group selective call. Note that if auto-acknowledge is used, the radio will not send this if receiving a group call.
3. Decoder Sequence 2 is 01(A1A2A3A4). This will make the radio look for those digits in the contact list and either display the name or whatever number was sent in the second sequence.
4. Decoder Sequence 2 can be omitted on a radio without display. When another radio calls a non-display radio, it (the receiving radio) simply "ignores" the 2nd sequence transmitted by the other radio.
5. Auto Reset Start can be ticked but requires some additional configuration in order to work nicely. This is described below.
6. Auto Acknowledge is set to Ack1. This is also described below.
7. In this case, Private and Group Call Tones are both enabled. This causes the radio to sound an alert whenever 029186 02YYYY are received in this sequence and together. YYYY would be the number of the calling radio. 9186 comes from the U1 to U4 fields in General Settings.
8. Also note that since all radios on this system will send 02(A1A2A3A4) 02(U1U2U3U4) when calling another radio, 02(A1A2A3A4) needs to be the second sequence received, as the radio sending a selective call, will send its own identity as the second sequence in the transmitted telegram.

Ref Frequency (MHz)

Unmute Rule *Std Unmute, Mute*

Squelch Mode

PL Override

Auto Reset Mode

5 Tone Encode

Call 1	Tel2
Call 2	Tel4
Call 3	Tel5
Call 4	Tel6
Call 5	None
Call 6	None
Disconnect Telegram	None
Sidetone	<input type="checkbox"/>

The following needs to be configured in each of the 5-Tone channel(s):

1. The channel type must be 5 Tone. This is chosen when adding the channel to the zone. If there is no 5 tone channel option, then the radio does not support Select-5.
2. Squelch Mode should be Tone (or Tone & PL) if Auto Reset Start is selected. Tone in this case means Select 5 and if chosen, a matching select-5 telegram must be received in order to open (unmute) the radio's squelch.
3. Auto Reset Mode needs to be set to anything other than None, if tone squelch is used and Auto Reset Start is enabled. Auto reset is important as it will close the radio's squelch after a certain amount of time or certain criteria are met.
4. Call 1 Encode is set to Tel2. This will make the radio send telegram 2 whenever the Call 1 button is pressed. The button itself is set up in Control Buttons.
5. The SelCall decoder definition (shown above) must be enabled (selected) in this channel. Note the PTT-ID decoder definition (described above) is also enabled here from the previous example.

If Auto Reset Mode (above) is set to Carrier Independent, one needs to ensure that the Auto Reset Timer is set to a reasonable value.

Analog

Call Alert Encode	<input checked="" type="checkbox"/>
Sel Call Encode	<input checked="" type="checkbox"/>
Sel Call Tone/ID	Always
Sel Call Hang Time (ms)	4000
Auto Reset Timer (sec)	60
5 Tone Call Answer Timer (sec)	5
5 Tone Authorization Request Monitor Time (sec)	0
5 Tone Authorization Request Button Function	5 Tone Call 1
5 Tone Emergency Alarm Type	Disabled

Lastly, a button needs to be assigned to allow the selective call to be sent. In the MOTOTRBO radio configuration, this is done by assigning a programmable button to a One Touch Call function and associating that with Call1.

One Touch Access	Mode	Channel Zone	Channel	Call	Call Type	5 Tone Call
1	Digital	None	None	Nobody	Group Call	Call 1
2	Digital	None	None	Nobody	Group Call	Call 2
3	Digital	None	None	Nobody	Group Call	Call 3
4	Digital	None	None	Nobody	Group Call	Call 4
5	Digital	None	None	Nobody	Group Call	None
6	Digital	None	None	Nobody	Group Call	None

P1 P1 Button

P2 P2 Button

One Touch Access 1	One Touch Access 3
One Touch Access 2	One Touch Access 4

Call1 is defined in the channel.

AUTO ACKNOWLEDGE (OPTIONAL)

If ACK1 is selected in Tel2, the radio needs to be setup with another telegram to send an automatic acknowledgement back to the calling (call source) radio. This has the following advantages:

1. If the channel is busy, the radio can be configured to wait for the channel to become free. If the channel is permanently busy, it's probably better for the call not to go ahead and the calling user will eventually get a call failed indication.
2. If the target radio is turned off there will be no acknowledge and this will give the calling user an indication the user is not there. The same would be true if the target radio is outside of RF range.
3. If the auto-acknowledge is indeed received but there is no response, the calling user can assume the called user is busy; truant or may need help - depending on the use case.

To setup auto acknowledgement in the above configuration, the following is needed:

1. A fourth (in this case) sequence is added which will send 000000.
2. The sequence is sent as Tel3. Note that Tel3 must not expect an acknowledge.
3. Ack1 - which is referred to in the Decoder Definition - is set up to send Tel3 when the channel is busy and after waiting for 200ms.
4. Another decoder definition needs to be added. The decoder type needs to be set to Ack1/Ringing or Ack1/Authorisation and the decode sequence (only one) is 000000.
5. The below decoder definition is enabled (selected) in the channels where this feature is used.

Acknowledge Name	Auto-Ack1
Telegram	Tel3
Channel Free	<input checked="" type="checkbox"/>
Sidetones	<input type="checkbox"/>
Acknowledge Delay (ms)	0
Revert Channel Zone	None
Revert Channel	Selected

Definition Name: Auto-Ack
 5 Tone Signaling System: System 1
 Decoder Type: ACK1/Authorization
 Group Type: Standard
 Decoder Sequence 1: 000000
 Group Sequence 1: [1-19]
 Decoder Sequence 2: [1-19]
 Group Sequence 2: [1-19]
 Decoder Sequence 3: [1-19]
 Group Sequence 3: [1-19]
 Call Forwarding Acknowledge: None
 Telegram 1st Tone Duration (ms): 0
 Auto Reset Start: Yes
 Call Answer Timer: No
 Call Back: No
 Auto Acknowledge: None
 Matching Encode Telegram: Tel1
 Private Call Tone: None
 Group Call Tone: None

Sequence Name	Signaling System	Sequence	Pertime (ms)	Extended 1st T
PTT-ID	System 1	01(U1U2U3U4)	140	0
SelCall1	System 1	02(A1A2A3A4)	140	0
SelCall2	System 1	02(U1U2U3U4)	140	0
Auto-Ack	System 1	000000	140	0
Stun	System 1	04(A1A2A3A4)	140	0
Unstun	System 1	05(A1A2A3A4)	140	0
Emergency	System 1	06(U1U2U3U4)	140	0
Radio Check	System 1	03(A1A2A3A4)	140	0

Telegram Name	Sequence 1	Sequence 2	Sequence 3	Acknowledge Expected
Tel1	PTT-ID	None	None	None
Tel2	SelCall1	SelCall2	None	ACK1
Tel3	Auto-Ack	None	None	None
Tel4	Radio Check	None	None	ACK1
Tel5	Stun	None	None	ACK1
Tel6	Unstun	None	None	ACK1
Tel7	Emergency	None	None	None

Decode Telegrams

PTT-ID
SelCall
Auto-Ack
StunMe
UnstunMe
RadioCheck
Inc. Emerg.

RADIO CHECK / SILENT INTERROGATE

As the name suggests, Silent Interrogate allows a radio to send a telegram to another radio and receive an acknowledgement if the telegram was received. This allows a radio user to determine if the target radio is within RF range and functional.

To set this up, the following is needed:

1. A decoder definition that has Decoder Type set to Silent Interrogate. The sequence to be decoded is 03(U1U2U3U4) – essentially 03 plus the ID of this radio. When setting Decoder Type set to Silent Interrogate, Auto-Acknowledge becomes compulsory. The auto-acknowledge used for selective call can be reused.
2. An encode sequence and telegram that will send 03(A1A2A3A4). In this case, Radio Check and Telegram 4.
3. The telegram is assigned to a call button in the channel. In this case, Call 2.
4. Auto-Ack1 is reused from the Selective Call configuration above.

Remember that if selective call is not used, a decoder definition that processes the auto-acknowledge, must still be present.

Definition Name: RadioCheck

5 Tone Signaling System: System 1

Decoder Type: Silent Interrogate

Group Type: Standard

Decoder Sequence 1: 03(U1U2U3U4)

Group Sequence 1: [1-19]

Decoder Sequence 2: []

Group Sequence 2: [1-19]

Decoder Sequence 3: []

Group Sequence 3: [1-19]

Call Forwarding Acknowledge: None

Telegram 1st Tone Duration (ms): 0

Auto Reset Start: No

Call Answer Timer: No

Call Back: No

Auto Acknowledge: Auto-Ack1

Matching Encode Telegram: Tel1

Private Call Tone: None

Group Call Tone: None

Sequence Name	Signaling System	Sequence	Pretime (ms)	Extended 1st T
PTT-ID	System 1	01(U1U2U3U4)	140	0
SelCall1	System 1	02(A1A2A3A4)	140	0
SelCall2	System 1	02(U1U2U3U4)	140	0
Auto-Ack	System 1	000000	140	0
Stun	System 1	04(A1A2A3A4)	140	0
Unstun	System 1	05(A1A2A3A4)	140	0
Emergency	System 1	06(U1U2U3U4)	140	0
Radio Check	System 1	03(A1A2A3A4)	140	0

Telegram Name	Sequence 1	Sequence 2	Sequence 3	Acknowledge Expected
Tel1	PTT-ID	None	None	None
Tel2	SelCall1	SelCall2	None	ACK1
Tel3	Auto-Ack	None	None	None
Tel4	Radio Check	None	None	ACK1
Tel5	Stun	None	None	ACK1
Tel6	Unstun	None	None	ACK1
Tel7	Emergency	None	None	None

One Touch Access	Mode	Channel Zone	Channel	Call	Call Type	5 Tone Call
1	Digital	None	None	Nobody	Group Call	Call 1
2	Digital	None	None	Nobody	Group Call	Call 2
3	Digital	None	None	Nobody	Group Call	Call 3
4	Digital	None	None	Nobody	Group Call	Call 4
5	Digital	None	None	Nobody	Group Call	None
6	Digital	None	None	Nobody	Group Call	None

5 Tone Encode

Call 1	Tel2	▼
Call 2	Tel4	▼
Call 3	Tel5	▼
Call 4	Tel6	▼
Call 5	None	▼
Call 6	None	▼
Disconnect Telegram	None	▼
Sidetone	<input type="checkbox"/>	

STUN AND UNSTUN

If you are going to use stun, you must also configure unstun. I strongly recommend using this together with auto-acknowledge as this provides confirmation to the sender that the target radios was indeed stunned or unstunned.

Only give this feature to users who are responsible!

To set this feature up, you will need two decoder definitions. One for stun and one for unstun.

You will also need two encoder sequences and two encoder telegrams. Both telegrams must be configured to expect an auto-acknowledge.

If you have configured selective call and/or silent interrogate like I have it above, you can reuse the auto-acknowledge configured for these. If not, you will need to configure auto-acknowledge and will need an additional encoder telegram and sequence.

Definition Name	StunMe																			
5 Tone Signaling System	System 1																			
Decoder Type	Stun																			
Group Type	Standard																			
Decoder Sequence 1	04(U1U2U3U4)																			
Group Sequence 1	<table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Decoder Sequence 2																				
Group Sequence 2	<table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Decoder Sequence 3																				
Group Sequence 3	<table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td></tr></table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Call Forwarding Acknowledge	None																			
Telegram 1st Tone Duration (ms)	0																			
Auto Reset Start	No																			
Call Answer Timer	No																			
Call Back	No																			
Auto Acknowledge	Auto-Ack1																			
Matching Encode Telegram	Tel1																			
Private Call Tone	None																			
Group Call Tone	None																			

Definition Name: UnstunMe
 5 Tone Signaling System: System 1
 Decoder Type: Unstun
 Group Type: Standard
 Decoder Sequence 1: 05(U1U2U3U4)
 Group Sequence 1: [1-19]
 Decoder Sequence 2: []
 Group Sequence 2: [1-19]
 Decoder Sequence 3: []
 Group Sequence 3: [1-19]
 Call Forwarding Acknowledge: None
 Telegram 1st Tone Duration (ms): 0
 Auto Reset Start:
 Call Answer Timer: No
 Call Back:
 Auto Acknowledge: Auto-Ack1
 Matching Encode Telegram: Tel1
 Private Call Tone: Ringer 10
 Group Call Tone: None

	Sequence Name	Signaling Syst	Sequence	Pertime (ms)	Extended 1st T
>	PTT-ID	System 1	01(U1U2U3U4)	140	0
>	SelCall1	System 1	02(A1A2A3A4)	140	0
>	SelCall2	System 1	02(U1U2U3U4)	140	0
>	Auto-Ack	System 1	000000	140	0
>	Stun	System 1	04(A1A2A3A4)	140	0
>	Unstun	System 1	05(A1A2A3A4)	140	0
>	Emergency	System 1	06(U1U2U3U4)	140	0
>	Radio Check	System 1	03(A1A2A3A4)	140	0

	Telegram Name	Sequence 1	Sequence 2	Sequence 3	Acknowledge Expected	Telegram Repeat
>	Tel1	PTT-ID	None	None	None	<input type="checkbox"/>
>	Tel2	SelCall1	SelCall2	None	ACK1	<input type="checkbox"/>
>	Tel3	Auto-Ack	None	None	None	<input type="checkbox"/>
>	Tel4	Radio Check	None	None	ACK1	<input type="checkbox"/>
>	Tel5	Stun	None	None	ACK1	<input type="checkbox"/>
>	Tel6	Unstun	None	None	ACK1	<input type="checkbox"/>
>	Tel7	Emergency	None	None	None	<input type="checkbox"/>

Call 1

Call 2

Call 3

Call 4

Call 5

Call 6

Disconnect Telegram

Sidetone

Decode Telegrams

PTT-ID

Inc. Emerg.

Redial Check

UnstunMe

StunMe

SetCall

Auto-Ack

Add

Remove

P1 P1 Button

P2 P2 Button

	One Touch Access	Mode	Channel Zone	Channel	Call	Call Type	5 Tone Call
>	1	Digital	None	None	None	Group Call	Call 1
>	2	Digital	None	None	None	Group Call	Call 2
▶	3	Digital	None	None	None	Group Call	Call 3
	4	Digital	None	None	None	Group Call	Call 4

EMERGENCY

The emergency feature in select-5 allows a user to send an emergency telegram when they are in trouble. In addition to sending the telegram, the radio can also be configured to periodically PTT, allowing other users to hear what is going on.

This section will only focus on the 5-tone configuration.

There are three ways a portable radio user can trigger emergency:

1. Pressing the configured button (usually the top orange button).
2. Ignoring the lone worker alert – if configured.
3. Triggering via the mandown function (angle exceeded or no movement).

Mandown is not available in a mobile radio. It is also possible to fit an external emergency switch to the mobile via the accessory connector.

To set up emergency, you will need:

1. An encoder sequence and telegram that will be sent when emergency is triggered.
2. A decoder definition that will be used to decode an incoming emergency from another radio.
3. Some configuration of the 5-tone emergency settings in Signalling Systems.
4. Configure a button to press in case of an emergency.

The screenshot shows a configuration menu for emergency settings. The following items are highlighted with red boxes:

- Definition Name: EmergencyIn
- Decoder Type: Incoming Emergency
- Decoder Sequence 1: 06(A1A2A3A4)
- Auto Reset Start:
- Private Call Tone: Repetitive

Other visible settings include:

- 5 Tone Signaling System: System 1
- Group Type: Standard
- Group Sequence 1: (empty)
- Decoder Sequence 2: (empty)
- Group Sequence 2: (empty)
- Decoder Sequence 3: (empty)
- Group Sequence 3: (empty)
- Call Forwarding Acknowledge: None
- Telegram 1st Tone Duration (ms): 0
- Call Answer Timer:
- Call Back:
- Auto Acknowledge: None
- Matching Encode Telegram: Tel1
- Group Call Tone: None

Sequence Name	Signaling System	Sequence	Preamble (ms)	Extended 1st T
PTT-ID	System 1	01(U1U2U3U4)	140	0
SelCall1	System 1	02(A1A2A3A4)	140	0
SelCall2	System 1	02(U1U2U3U4)	140	0
Auto-Ack	System 1	000000	140	0
Stun	System 1	04(A1A2A3A4)	140	0
Unstun	System 1	05(A1A2A3A4)	140	0
EmergencyOut	System 1	06(U1U2U3U4)	140	0
Radio Check	System 1	03(A1A2A3A4)	140	0

Telegram Name	Sequence 1	Sequence 2	Sequence 3	Acknowledge Expected	Telegram Repeat
Tel1	PTT-ID	None	None	None	<input type="checkbox"/>
Tel2	SelCall1	SelCall2	None	ACK1	<input type="checkbox"/>
Tel3	Auto-Ack	None	None	None	<input type="checkbox"/>
Tel4	Radio Check	None	None	ACK1	<input type="checkbox"/>
Tel5	Stun	None	None	ACK1	<input type="checkbox"/>
Tel6	Unstun	None	None	ACK1	<input type="checkbox"/>
Tel7	EmergencyOut	None	None	None	<input type="checkbox"/>

5 Tone Emergency Alarm Type: Regular

5 Tone Emergency Revert Channel Zone: None

5 Tone Emergency Revert Channel: Selected

5 Tone Emergency Cycles: 5

5 Tone Emergency TX Tone:

5 Tone Emergency TX Cycle Time (sec): 10

5 Tone Emergency RX Cycle Time (sec): 10

5 Tone Emergency Encoder Telegram: Tel7

Numeric Keypad: Disabled

Emergency Short Press Duration (ms): 100

Long Press Duration (ms): 1000

Keypad Lock Options: Lock Keypad

	Short Press	Long Press
Orange Button	Emergency Off	Emergency On
Side Button 1	Monitor	Permanent Monitor
Side Button 2	Scan On/Off	Nuisance Delete
Side Button 3	High/Low Power	Repeater/Talkaround
P1 Button	One Touch Access 1	One Touch Access 3
P2 Button	One Touch Access 2	One Touch Access 4

SOME ADDITIONAL NOTES

	Position	Channel Type	Channel Name	RX: Squelch Mode
▶	1	5 Tone	Channel 1	Tone
▶	2	5 Tone	Channel2	CSQ

Configuring the radio with two almost identical channels – with the exception of the RX Squelch Mode setting – allows the user to choose between an open channel, where all calls can be heard, and a standby channel where the radio will only make noise when someone sends it a selective call.



Sample Codeplug