# How to turn your PRM8020(10703) into a Ham Radio for 2m.

This manual gives you an idea how to reprogram the PRM8020 type 9525 001 10703 into a Ham Radio for 2m without going into all the possibilities of this fine radio. With the settings in this manual you can program the radio and use it as a standard 2-way radio on a simplex frequency or via a repeater that uses a CTCSS and 1750Hz tone to activate. The software I used for the HW an SW configuration was the FPP PRM80 V4.0

FPP PRM80 U4.00 4313 327 80273

Please keep in mind that I'm not responsible for any damages to your radio if something goes wrong. I programmed 100 PRM8020 type 10703 without any problems but you never know.

Before reprogramming please make a back-up of the original settings, see further down this manual point 4.1.

Keeping all this in mind and enjoy our hobby and your new reprogrammed PRM8020.

# 1. <u>How to determine the type of PRM8020 you have.</u>

Turn your radio upside down en check the label on the radio.



The 10703 series are programmed in de range of 146MHz to 174MHz so it should by fairly easy to program a couple of MHz down without having to change al lot on the main board. The radio's I used reprogrammed were used in the 148MHz., so the RX / TX settings are acceptable for our Ham Frequencies 144 to 146MHz.

The PRM8020 is a radio with 64 channels to program so quit useful for our hobby.

2. <u>How to setup the new hardware configuration for the PRM8020</u>

Start the Hardware program by clicking on the following icon if you created an



icon for the PRM80HW.exe otherwise click on the executable file in the software folder from your FPP software.

The startup screen looks something like this



Fill in all the fields one by one, you can find all the options for each field by tapping the return button on your keyboard, and navigation between the different field by using de up and down & left & right arrows.

The next screenshots give you an idea of all the possible options for each field and the ones I used to program the PRM8020

If you want more information about the field you're about to modify just click the **F1 Help** button and you will get more info.

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Marketing Country Manufacturer Frequency Band Freq Stability CTCSS Hardware Noise Blanker Control Head Installation Kit Speaker Type	Tech England France Germany Spain Canada Australia	Codeo cing quired dware h type abel				
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F1-Help F2-CODE F	4-EEPROM F5-FILE	F8-PRINT F10-VALID ESC-EXIT				



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F1-Help F2-CODE	F4-EEPROM	F5-FILE	F8-PRINT	F10-VALID	ESC-Exit





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F1-Help F2-CODE	F4-EEPROM F	5-FILE F	8-PRINT F	10-VALID	ESC-Exit

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F1-Help F2-CODE	F4-EEPROM F	5-FILE F8-P	RINT F10	D-VALID ESC-Exit

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Control Head Installation Kit Speaker Type Systems	Local Not require Standard	Equip Mute	ne type ment Label	PRM8020 Fist Microphone Simoco Label			
F1-Help F2-CODE	F4-EEPROM	F5-FILE	F8-PRINT	F10-VALID ESC-Exit			

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	Noise Blanker Control Head Installation Kit Speaker Type Systems	Fitted Local Not require Standard Not fitted	Fixed Equip Mute	ne type ment Label	Standard PRM8020 Fist Microphone Simoco Label		
	F1-Help F2-CODE	F4-EEPROM	F5-FILE	F8-PRINT	F10-VALID ESC-EXIT		



For this last option it is very important that you chose variable mute. This way you can select the squelch level as sensitive as you wish. If chosen fixed the standard squelch level is very high and you could miss important QSO's.

PRM80HW - 🗆 × ÷ R Auto A PRM80 Hardware Editor Marketing Country International Simoco 12NC 0000 000 00000 Manufacturer Simoco Tech Code 00 SB011 1232 011 100000 132 – 156 MHz Channel Spacing 5.0 ppm -10/+60 °C RF Power Required Enc/Dec & 180 RTB Selcall Hardware Fitted Power Switch Frequency Band Freq Stability CTCSS Hardware 12.5 kHz (S) 1 -25W Std VHF Encode/Decode Noise Blanker Standard Control Head Local Installation Kit Not required Speaker Type Standard Systems Not fitted Version PRM8020 Microphone type Equipment Label Fist Microphone Simoco Label Mute Variable F2-CODE F10-VALID F1-Help F4-EEPROM F5-FILE F8-PRINT ESC-Exit

If every field is filled it should look like this:

If you try to write this info to your PRM8020 you'll get this message:



As you can see there is no valid Simoco 12NC number. You can alter this by clicking on the F2 (code) button and you'll get the possibility to fill in a new NC12 code.



The NC12 code that works fine for me are:

**9525 001 10224 (my preference)** 9525 001 10604 9525 001 10504

By using the 9525 001 10504 you cannot use the selcall. Selcall Hardware is not fitted as you can see in the screenshot bellow

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	Marketing Country Manufacturer	England Simoco	Simoco 12NC Tech Code 01 SB05	9525 001 10504 1 1130 111 000000
	Frequency Band Freq Stability CTCSS Hardware Noise Blanker	132 - 156 MHz 5.0 ppm -30/+60 °C Enc/Dec & 180 RTB Not Fitted	Channel Spacing RF Power Required Selcall Hardware Power Switch	12.5 kHz (S) 1 -25W Std VHF Not Fitted Standard
	Control Head Installation Kit Speaker Type Systems	Local Swivel Bracket Standard Not fitted	Version Microphone type Equipment Label Mute	PRM8010 Fist Microphone Simoco Label Variable
E	F1-Help F2-CODE	F4-EEPROM F5-F	ILE F8-PRINT F	10-VALID ESC-Exit

Code 9525 001 10604 is identical to the 9525 001 10224 as far as hardware is concerned

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		PRM80 Hard	ware Editor	
	Marketing Country Manufacturer	England Simoco	Simoco 12NC Tech Code 01 SB051	9525 001 10604 1232 111 000100
	Frequency Band Freq Stability CTCSS Hardware Noise Blanker	132 - 156 MHz 5.0 ppm -30/+60 °C Enc/Dec & 180 RTB Not Fitted	Channel Spacing RF Power Required Selcall Hardware Power Switch	12.5 kHz (S) 1 -25W Std VHF Encode/Decode Standard
	Control Head Installation Kit Speaker Type Systems	Local Swivel Bracket Standard Fitted	Version Microphone type Equipment Label Mute	PRM8020 Fist Microphone Simoco Label Vaniable
F		F4-EEPROM F5-F	ILE F8-PRINT F10	D-VALID ESC-Exit

#### 3. <u>How to Wipe/Reprogram the new hardware configuration into the PRM8020</u>

Once your hardware setup is ok, you can wipe the existing settings by reprogramming your radio with the new hardware settings.

This you can do by clicking on the **F4** (**EEPROM**) programming button. During the programming you'll get a little pop up screen "please wait"

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	Frequency Band Freq Stability CTCSS Hardware Noise Blanker	132 - 156 MHz 5.0 ppm -10 Enc/Dec & 18 Not Fitted	Channe lease Wait	l Spacing r Required Hardware witch	12.5 kHz 1 -25W S1 Encode/De Standard	(S) td VHF code
	Control Head Installation Kit Speaker Type Systems	Local Swivel Bracket Standard Not fitted	Versio Microp Equipm Mute	] n hone type ent Label 	PRM8020 Fist Mic Simoco La Variable	rophone abel
	F1-Help F2-CODE	F4-EEPROM	F5-FILE	F8-PRINT	F10-VALID	ESC-Exit

If the little pop up screen has disappeared, your radio hardware has been programmed successfully and you'll get this screen again:

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		PRM80 Hard	ware Editor	
	Marketing Country Manufacturer	England Simoco	Simoco 12NC Tech Code O1 SB011	9525 001 10224 1232 111 000000
	Frequency Band Freq Stability CTCSS Hardware Noise Blanker	132 - 156 MHz 5.0 ppm -10/+60 *C Enc/Dec & 180 RTB Not Fitted	Channel Spacing RF Power Required Selcall Hardware Power Switch	12.5 kHz (S) 1 -25W Std VHF Encode/Decode Standard
	Control Head Installation Kit Speaker Type Systems	Local Swi∨el Bracket Standard Not fitted	Version Microphone type Equipment Label Mute	PRM8020 Fist Microphone Simoco Label Variable
		F4-EEPROM F5-F	ILE F8-PRINT F1	0-VALID ESC-Exit

You can save these setting by clicking on the F5 FILE button and giving a name for this job.

Now you can close this application by clicking on the **ESC-EXIT** button on your keyboard and chose Yes.

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		Exit Hardware Selector PMR80	
		NO	
F1-Help	F2-CODE	F4-EEPROM F5-FILE F8-PRINT	F10-VALID ESC-EXIT

4. <u>How to setup the new software settings for 2m</u>

Start the Software program by clicking on the following icon if you created one



for of the PRM80SW.exe otherwise click on the executable file in the software folder from your FPP software.

# 4.1 Back-up Instructions

This is the startup screen:

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FPP PRM80 04.00 4313 327 80273	Tuesday 16 December 2008	16:49
Initial Men	nu	
Read EEPROM data fro Read Hardware Order	om Mobile / Job File	

With this program you can make a back-up of the existing software / hardware configuration. This you can do by selecting the first option displayed on the screen.

### "Read EEPROM data from Mobile"

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FPP PRM80 U4.00 4313 327 80273	Tuesday	16 December 2008	16:49
Please Vait			

Once the data has been read you get this screen:

#### 🔓 PRM80SW - 🗆 × J 🗌 🖻 🖻 🗗 🗗 A Auto **Key Function Selection** Are key beeps required No Key Number 1 Function Scan Key Number 2 Function Monitor/Reset Key Number 3 Function Scan Add/Delete Key Number 4 Function Nothing F1-Help F2-S.Plan F4-EEPROM F5-File F8-Print F10-Info. Esc-Exit

Now save these original settings by clicking the F5 - File button and give a name to this JOB.

Once this is done, you can reprogram the hardware settings and if something gets wrong you can always reprogram your radio with the old settings and start again. Remember to take your time to discover and learn how your radio has been programmed before starting to reprogram and ending up with a non functional radio.

### 4.2 Nice to know

You can navigate between the different programming pages by using the **Page UP** and **Page Down** buttons of your keyboard.

For each field there is a very good help function integrated in the FPP 4.0 software. Just highlight the field and click on the **F1 Help** button. A green pop up help screen will appear and gives you the information you need.

If it is a multi page help file, you can go to the next help screen by using the page up and page down buttons of the keyboard.

Expl.:

# TRANSMIT CICSS.

This option selects what frequency will be used as a CTCSS (sub-audible) tone on this channel for TRANSMIT ONLY. The following table shows the valid CTCSS tone selection options.

Page 1 of 3.

	CTCS	S TONE TABLE	CALPHABETICAL OF	RDER).	
Select.	Frequency.	Select.	Frequency.	Select.	Frequency.
1.1	(disabled)	2 M 2	118.8 Hz	° Ø*	167.9 Hz
'A'	88.5 Hz	'N'	127.3 Hz	217	173.8 Hz
' B'	100.0 Hz	<b>'0'</b>	136.5 Hz	'2'	179.9 Hz
'C'	107.2 Hz	· P ·	146.2 Hz	'3'	186.2 Hz
, D,	114.8 Hz	· Q ·	67.0 Hz	141	192.8 Hz
»E,	123.0 Hz	× Ř,	71.9 Hz	*5*	203.5 Hz
' F'	131.8 Hz	'S'	74.4 Hz	<b>'6'</b>	210.7 Hz
' G'	141.3 Hz	· T ·	77.0 Hz	171	218.1 Hz
2 H 2	151.4 Hz	× U ×	79.7 Hz	·8·	225.7 Hz
111	82.5 Hz	2 U 2	85.4 Hz	· 9 ·	233.6 Hz
* J*	94.8 Hz	× 0 ×	91.5 Hz	· * ·	241.8 Hz
2 K2	103.5 Hz	'8'	156.7 Hz	2.11	250.3 Hz
, L,	110.9 Hz	· ¥ ·	162.2 Hz	*=*	97.4 Hz
					age 2 of 3

#### 4.3 <u>Setting up the new software parameters</u>

#### 4.3.1 Programming the 4 Function Keys

What I wanted is the possibility to scan, add and remove scan channels and remove the squelch value to 0 and no beeps

The first screen is the "Key Function Selection" you can program the 4 function buttons under the display.

These are my settings for the Key Function Seletion:

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		Key Function	Selection		
	Are	key beeps required	No		
	Кеу	Number 1 Function	Scan		
	Кеу	Number 2 Function	Monitor/Reset		
	Кеу	Number 3 Function	Scan Add/Delete		
	Key	Number 4 Function	Nothing		
F1-Help	F2-S.Plan	F4-EEPROM F5-F	ile F8-Print	F10-Info.	Esc-Exit

If you select a field, click the ENTER button from your Keyboard you get all the possible settings for the selected field. By using the up & down arrow you can scroll trough the menu

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		Key Fu	nction Sele	ction		
	Are k Key N Key N Key N Key N	key beeps req lumbe lumbe lumbe lumbe lumbe lumbe ▼ Prior	uired No 1 1 or/Reset ch Defeat •ity Channel			
F1-Help	F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

If you want an explanation for the selected field just click the F1 Help button.

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		Key Fu	nction Sele	ection		
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F1-Help	F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

# 4.3.2 <u>Programming the Frequency Table</u>

You can navigate between the different windows by using the page up and page down buttons of your keyboard the "Channel Tabel." window.

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General S		Options
Is Third Tone Res		ired No.
Is Open Selcall R		No
Allowable Decode		ype None
5+1 Encoding (Aus		Only)No
Extended First To		le No
Send-1 Key Actions Unmute Selcall Inhibited on Carrier Inhibited on PTT De-queue on Re-press Individual Identity Use French Encoding Start Timed Reset	rier ress ity ing	Send-2 Key Actions Unmute Selcall Inhibited on Carrier Inhibited on PTT De-queue on Re-press Individual Identity Use French Encoding Start Timed Reset
F1-Help F2-S.Plan F4-EEPROM	0-Info. Esc-Exit	F8-Print F10-Info.

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	Encode Si	gnalling Opt	ions		
Encode Type		Identit	y Tone	Period G	ueueing
Individual Identity (1 Individual Identity (2 Individual Identity (2) Emergency Identity (1) Emergency Identity (2) Individual Call Acknow Reset Call Acknowledge Signalling Options	L) 2) 3) ) vledge e			40 ms 40 ms 40 ms 40 ms 40 ms 40 ms 40 ms	No No No No No No
Encode Tone Set Lead in Delay Lead in Tone Required Lead in Tone Lead out Delay	CML CCIR 600 mSec No 100 mSec	Specia Repeat Group Reset	1 No-Tone Tone Tone Tone	No E A Ø	
F1-Help F2-S.Plan J	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

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Decode Signalling Options								
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	Decode Decode	Tone Period Tone Set	40 ms CML CCIR					
Indiv. Decode Resp	onses	Group Decode Re	sponses	Reset Decode Respo	nses			
Continuous Alert	No	Normal Alert	No	Urgent decode 1	No			
Urgent Hiert	NO	Group Hiert	NO No	Mute Selcall	No			
limed Keset	No	Colled India		Colled India Off	No			
Delayed Ook	No	Timed Pecet	UN NO	Acknowledge	No			
Ext O/P On	No	Inhibit PTT	No	Novmal Alevt	No			
Ext O/P Timed	No	Acknowledge	No	Ext output off	No			
Ext O/P Urgent	No		1923					
Called Indic On	No	Group	Remote Re	set Responses :				
		Mute Selcall	No	Cancel Alerts	No			
		Called Indic O	ff No	Ext output off	No			
1-Help F2-S.Plan	F4-	EEPROM F5-F11	e F8-P	rint F10-Info.	Esc-Exi			

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French Signalling	Options		
Enable French Decoding	No		
Caller Identity First	No		
Encode Repeater Identity	No		
Default Power-On Repeater			
Encode Type	Identity	Tone Period	Ú .
Repeater Identity (1) Repeater Identity (2)			
Encode Galled Party Identit	y Only		
French Decode Ignore Timer	0	Secs	
L-Help F2-S.Plan F4-EEPROM F5-File	F8-Print	F10-Info.	Esc-Ex:

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	Mi	crophone	Operations		
Enable TX Inhibit	No		Timed ANI Timer	Ø	Secs
Tx Limit Timer Re-PTT Limit Timer	0 0	Secs Secs	Conversation Timer Re-Conversation Time:	e 0	Secs Secs
Remove Cradle Response	s		Replace Cradle Respo	nses	
Send Cradle ANI	Disa	bled	Send Cradle ANI	No	
Individual Encode	Ma		Muto CTCSS	No	
Unmute Selcall	No		Mute Selcall	No	
Disable Timed Reset	No		Enable Timed Reset	No	
Set On-Call Indic	No		Clear On-Call Indi	c No	
PTT On Responses			PTT Off Responses		
Unmute Selcall	No				
Send ANI	Disa	bled	Send ANI	Dis	abled

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		Timed Reset	t & Kill Op	erations		
		Timed Reset Timed Reset Mute CTCSS Mute Selca Clear Cal Stop Aler Re-enable External O	Wait Time Actions all led Indic PTT's D/P Off	3 Secs No No No No No No No		
		Enable Kill Kill Timer V	Feature Jalue	No Secs		
F1-Help	F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

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	CHANNEL TABLE										
Ch		Valid	Frequency	Lockout	CTCSS 1	Per Chan	nel Op	tions			
1	R× T×	Yes Yes	145.20000 145.20000	No No	1	Selcall: Power :	No High	Comm. Valid	Repea Scan	ter: Ch :	Yes
2	R× T×	Yes Yes	145.21250 145.21250	No No		Selcall: Power :	No High	Comm. Valid	Repea Scan	ter: Ch :	Yes
3	R× T×	Yes Yes	145.22500 145.22500	No No		Selcall: Power :	No High	Comm. Valid	Repea Scan	ter: Ch :	Yes
4	R× T×	Yes Yes	145.23750 145.23750	No No		Selcall: Power :	No High	Comm. Valid	Repea Scan	ter: Ch :	Yes
5	R× T×	Yes Yes	145.25000 145.25000	No No	ł	Selcall: Power :	No High	Comm. Valid	Repea Scan	ter: Ch :	Yes
6	R× T×	Yes Yes	145.26250 145.26250	No No		Selcall: Power :	No High	Comm. Valid	Repea Scan	ter: Ch :	Yes
F1-He	lp	F2-S	.Plan F4-	EEPROM	F5-File	F8-P	rint	F10-I	nfo.	Esc	-Exit

In this screen you have the possibility to put in all channel and frequency data you like.

These are the columns we need:

= channel 1
= activate the channel or delete channel settings
= Frequency
= Yes deactivate channel without loss of data
= selects the sub tone you want to use.
= Yes to activate the 1750 Hz tone on this channel
= High or Low power output for this channel
= Yes so we can select this channel to be scanned
= receive data
= transmit data

MS PR	M80S	w								
Au	to	•	🖻 🛍 🔛 (	S A						
	CHANNEL TABLE									
Ch		Valid	Frequency	Lockout	CTCSS	Per Channel Op	tions			
59	R× T×	No				Selcall: Power :	Comm. Repeater: Valid Scan Ch :			
60	R× T×	Yes Yes	145.63750 145.03750	No No	Q	Selcall: No Power : High	Comm. Repeater: Valid Scan Ch : Yes			
61	R× T×	Yes Yes	145.66250 145.06250	No No		Selcall: No Power : High	Comm. Repeater: Valid Scan Ch : Yes			
62	R× T×	Yes Yes	145.65000 145.05000	No No	S	Selcall: No Power : High	Comm. Repeater: Valid Scan Ch : Yes			
63	R× T×	Yes Yes	145.71250 145.11250	No No	Q	Selcall: No Power : High	Comm. Repeater: Valid Scan Ch : Yes			
64	R× T×	Yes Yes	145.77500 145.17500	No No	F	Selcall: No Power : High	Comm. Repeater: Valid Scan Ch : Yes			
F1-He	lp	F2-S	.Plan F4-	-EEPROM	F5-Fi	le F8-Print	F10-Info. Esc-Exit			

The PRM 8020 has up to 64 channels you can use.

As you can see in the window above I programmed a few repeater frequencies. Unfortunately in a standard PRM8020 there is no 1750 Hz tone but fortunately the radio I use has the selcall option witch I use for 1750Hz see point 9.

Most of our repeaters can be activated by using a CTCSS tone. We need the CTCSS tone on our transmit signal so we must apply this in the Tx

line.

Each letter stands for a specific CTCSS sub tone. To find out what each letter stands for use the **F1 Help** function and you'll get this:

🕌 PRI	M80S	W						_ 🗆 ×		
Aut	0	•	B 🔁 🛃							
				C	HANNEL T	ABLE				
Ch		Valid	Frequency	Lockout	CTCSS	Per Channel (	Options			
59	R× T×	No		2	09911000.9	Selcall: Power :	Comm. Valid	Repeater: Scan Ch :		
60	R× T×	Yes Yes	This on	TRANSMIT CTCSS.						
61	R× T×	Yes Yes	used as channel	a CTCSS for TRA	(sub-au NSMIT ON	dible) tone on LY. The follow:	this ing	Repeater: Scan Ch : Yes		
62	R× T×	Yes Yes	UNIT S	nows the	options	· Page 1	l of 3.	Repeater: Scan Ch : Yes		
63	R× T×	Yes Yes	145.11250	No	Q	Power : Hig	h Valid	Repeater: Scan Ch : Yes		
64	Rx Tx	Yes Yes	145.77500 145.17500	No No	F	Selcall: No Power : Higl	Comm. h Valid	Repeater: Scan Ch : Yes		
F1-He	lp	F2-S	.Plan F4	-EEPROM	F5-Fi	le F8-Print	F10-	Info. Esc-Exit		

	CTCSS	TONE TABLE	CALPHABETICAL	ORDER).	
Select.	Frequency.	Select.	Frequency.	Select.	Frequency.
	(disabled)	2 M2	118.8 Hz	· Ø·	167.9 Hz
*A*	88.5 Hz	* N*	127.3 Hz	<b>'</b> 1'	173.8 Hz
<b>у В</b> ,	100.0 Hz	<b>'0'</b>	136.5 Hz	·2·	179.9 Hz
'C'	107.2 Hz	'P'	146.2 Hz	*3*	186.2 Hz
, D,	114.8 Hz	'9'	67.0 Hz	'4'	192.8 Hz
» E.	123.0 Hz	' R'	71.9 Hz	·5·	203.5 Hz
' F'	131.8 Hz	<b>'S'</b>	74.4 Hz	·6·	210.7 Hz
' G'	141.3 Hz	°Т'	77.0 Hz	'?'	218.1 Hz
282	151.4 Hz	× U ×	79.7 Hz	.8,	225.7 Hz
· I ·	82.5 Hz	×0 ×	85.4 Hz	·9·	233.6 Hz
· J·	94.8 Hz	*W*	91.5 Hz	****	241.8 Hz
· K ·	103.5 Hz	'8'	156.7 Hz	141	250.3 Hz
<b>,</b> Г,	110.9 Hz	·¥,	162.2 Hz	× = *	97.4 Hz
				10	Page 2 of 3.

requency.	Select.	Frequency.	Select.	Frequency.	Select
67.0 Hz	· Q ·	107.2 Hz	· C·	167.9 Hz	.0.
71.9 Hz	'R'	110.9 Hz	·L'	173.8 Hz	111
74.4 Hz	'S'	114.8 Hz	' D'	179.9 Hz	2'
77.0 Hz	* T *	118.8 Hz	* M*	186.2 Hz	131
79.7 Hz	102	123.0 Hz	* E2	192.8 Hz	141
82.5 Hz	1.11	127.3 Hz	2N <sup>2</sup>	203 5 Hz	151
85.4 Hz	202	131.8 Hz	1 F 1	210.7 Hz	161
88.5 Hz	181	136.5 Hz	101	218.1 Hz	1.71
91 5 Hz	2 UP	141 3 Hz	'G'	225 7 Hz	181
94.8 Hz	2.32	146 2 Hz	· p·	233 6 Hz	191
97 4 Hz	1 _1	151 4 Hz	្រអ្នំរ	241 8 Hz	1 10
100 0 H2	* B*	156 7 Hz	19.1	250 3 Hz	1.81
103.5 Hz	Ϋ́κ,	162.2 Hz	, ñ,	(disabled)	17

Once you have found the sub tone you need, close the help window by using the **ESC** button of your keyboard.

Put the right symbol in the CTCSS column of the Tx line. There is no more to it then this.

# 4.3.3 <u>Programming the scan function</u>

There are 2 ways of programming the scan function:

- Input in the software
- Using the Scan Add / Delete Function Key.

You can program up to 10 channels to be scanned

- Programming the 10 channels using the Scan Group selection window:

MS PRM80SV	v					_ 🗆 ×
Auto	J 🛄 🖻 🛍		3			
		Scan	Group Select	ion		
		Initial Prior 1st Channel 2nd Channel 3rd Channel 4th Channel 5th Channel 6th Channel 7th Channel 9th Channel 10th Channel	ity Channel in Scan Group in Scan Group	7 10 64 63 62 61 60		
F1-Heln	F2-S-Plan	E4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

Fill in the channel number(s) you want to be scanned just as shown in the above window.

# - Using the Scan Add / Delete function key ( the easy way)

If a channel is already programmed to be scanned, you will be able to see a "V"-marker appear above the Scan Add / Delete function key (3<sup>rd</sup> key from the left)



The "V"-marker above the  $2^{nd}$  function key, MONITOR indicates that the squelch level is at 0 (zero) and you monitor this channel

To remove channel 64 from the scan list just push the Scan Ad / Delete function key once and the "V"-marker disappears



4.3.4 General channel settings

MS PRM80SW			_ 🗆 🗙
Auto 💽 🛄 🖻 健			
	General Channel Options		
	Default Power-On Channel Default Power-On Status	2	
	Channel Change Options		
	Mute Squelch Defeat Mute Selcall	No No	
	Mute CICSS Reset Called Status Reset On-Call Status	No No No	
	Execute pending Timed Reset Remove Queued Encodes	No No	

The only parameter I changed was the default Power-on channel or Home channels as it is called on other radio's. In the above window it is Channel 7.

The next screen is not of use to use at this time.

NRM80SV	4	
Auto	• <u>• • • • • • • •</u>	
	Alarm Operation	
	What is the Alarm Channel Number	3
	Emergency Identity Encode Count	0
	Use French Encoding	No
	Alarm Display Mode	Normal
	Open selcall on Alarm sequence	No
	Is a covert microphone fitted	No
	Send an Emergency Identity Every	30 secs
	Is Alarm Mode Initiated Externally	No
	Exit Alarm Mode on Power Off/On	No
F1-Help	F2-S.Plan F4-EEPROM F5-File F8-P	rint F10-Info. Esc-Exit

This is the last of the software settings windows.

# 5. How to program your PRM8020 with the new software settings

PRM80SW \_ 🗆 × -Auto []] 🖻 🛍 A -**Key Function Selection** Are key beeps required No Key Number 1 Function Scan Monitor/Reset Key Number 2 Function Scan Add/Delete Key Number 3 Function Key Number 4 Function Nothing F1-Help F2-S.Plan F4-EEPROM F5-File F8-Print F10-Info. Esc-Exit

Go back to the first window. (Key Function Selection)

To program you PRM8020 with the new software settings click on the **F5-File** button to save you new software settings into a job. Once you've made de back-up click on the **F4-EEPROM** button.

PRM80SV	V.					- 🗆 ×
Auto	• 🗌 🖻 🖻 🛃		]			
		Key Fu	nction Sele	ction		
	Are kej Key Nur Key Nur Key Nur Key Nur	y beeps req nb EEPROM nb Read E Mrite nber 4 Func	uired No Function r EPROM data EEPROM data tion Noti	enu et lete bing		
F1-Help	F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

Chose Write EEPROM data and push the RETURN button of the keyboard and wait.

BRM80SW	_ 🗆 ×
Key Function Selection	
Are key beeps required No	
Key Number 1 F	
Key Number 2 F Please Wait or/Reset	
Key Number 3 F Add/Delete	
Key Number 4 Function Nothing	
F1-Help F2-S.Plan F4-EEPROM F5-File F8-Print F10-Info.	Esc-Exit

Once the "Please Wait" pop up screen has disappeared, you radio is programmed and ready to use.

## 6. How to program other PRM8020 with the same Hardware and Software

It is very easy, just connect your programming cable to the  $2^{nd}$  radio and repeat the steps in point 5.

MS PRM80SW		
Auto 💽 🛄 🖻 🔂 🖆		
	Key Function Selection	
Are key bo Key Numb Key Numb Key Numb Key Number	EEPROM Function menu Read EEPROM data Write EEPROM data Iete r 4 Function Nothing	
F1-Help F2-S.Plan F4-D	EEPROM F5-File F8-Print	F10-Info. Esc-Exit

Chose Write EEPROM data and push the RETURN button of the keyboard and wait.

Mage PRM80SV	N					_ 🗆 ×
Auto	• 🔅 🖻 🛍	🔁 🖻 🖪 🔺	]			
		Key Fu	unction Sele	ction		
	Are Key Key Key Key	key beeps req Number 1 F Number 2 F Number 3 F Number 4 Func	uired No Please Wait tion <u>Not</u>	or/Reset Add/Delete hing		
F1-Help	F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

Once the "Please Wait" pop up screen has disappeared, you radio is programmed and ready to use.

#### 7. Buttons on the PRM8020



- 1. Power ON / OFF Volume Squelch button
- 2. 1<sup>st</sup> Function Key : Scan
- 2<sup>nd</sup> Function Key : Scan
  3<sup>rd</sup> Function Key : Monitor (Squelch on / off)
  3<sup>rd</sup> Function Key : Scan Add / Delete
- 5. 4<sup>th</sup> Function Key : 1750Hz tone
- 6. Channel up & down buttons
- 7. RJ45 Microphone / Programming connector

#### 8. <u>Scan problem</u>

When you have the original microphone from Philips connected, it is possible that the scanning isn't working.

Check if scanning works if you disconnect the microphone or if the microphone hangs in the original microphone holder.

If so the problem will be solved in 10 minutes.

In some original hand microphones one has build in a safety to prevent the radio from scanning if the microphone is in use (read of the hook). This is done by building a very little magnetic switch in the microphone at the back.





Magnet

At the back of the original microphone holder you can find a little round magnet that closes the scan switch in the microphone if it hangs in the microphone holder.



Little switch that controls the scan options.

There are at least 3 possible solutions:

- 1. Put the microphone in the original holder before you start scanning
- 2. Remove or close the little switch in the microphone, this has no influence on the audio of the microphone
- 3. Connect another microphone to the radio.

When the radio is scanning the display looks like this:



This indicates that the scanning function is activated by push the first Function Key.

### 9. <u>Setting Up the 1750Hz tone</u>

First of all I need a Function Key to be programmed for the activation of the 1750Hz tone. I still have the 4<sup>th</sup> function key and I program it to run the send-1 option.

Because I will be using the selcall option to generate the 1750Hz tone I will need to program the right options.

The following windows will give you an idea on how I did that.

MS PRM80SW	PRM80SW				- 🗆 ×
Auto 💌	] 🛄 🖻 🛍				
		Key Function	Selection		
	Are	key beeps required	No		
	Кеу	Number 1 Function	Scan		
	Ke y	Number 2 Function	Monitor/Reset		
	Ке у	Number 3 Function	Scan Add/Delete		
	Кеу	Number 4 Function	Send-1		
F1-Help	F2-S.Plan	F4-EEPROM F5-F	ile F8-Print	F10-Info.	Esc-Exit

SPRM80SW - PRM80SW				_ 🗆 ×
Auto 🔽 🛄 🖻 🔂 🖪	97 A			
	General Selcall	Options		
Is Thir	d Tone Reset Requ	ired No		
Is Open	Selcall Required	Yes		
Allowab	le Decode Group T	ype None		
5+1 Enc	oding (Austrailia	Only>No		
Extende	d First Tone Deco	de No		
Send-1 Key Actions Unmute Selcall Inhibited on Carrier Inhibited on PTT De-queue on Re-press Individual Identity Use French Encoding Start Timed Reset	Yes No No 1 No No	Send-2 Key Act Unmute Selcal Inhibited on Inhibited on De-queue on F Individual Id Use French En Start Timed F	cions 1 Carrier PTT Re-press lentity coding Reset	
71-Help F2-S.Plan F4-	EEPROM F5-File	F8-Print	F10-Info.	Esc-Exit

Open Selcall Required= YesUnmute Selcall= YesIndividual Identity= 1

🐕 PRM80SW - PRM80SW					_ 🗆 🗙
Auto 💽 🛄 🖻 健	🔁 🖆 A				
	Encode Sig	ynalling Oy	otions		
Encode Type		Identi	ity Ton	e Period Qu	eueing
Individual Identit Individual Identit Individual Identit Emergency Identity Emergency Identity Individual Call Ac Reset Call Acknowl	y (1) y (2) y (3) (1) (2) knowledge edge	8	_	40 ms 40 ms 40 ms 40 ms 40 ms 40 ms 40 ms 40 ms	No No No No No No No
Signalling Options					
Encode Tone Set	CML CCIR				
Lead in Delay Lead in Tone Requi Lead in Tone Lead out Delay	1000 mSec red Yes 8 20 mSec	Spect Repea Group Reset	ial No-Tone at Tone 5 Tone 5 Tone	No E A Ø	
F1-Help F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit
Individual Identity Lead in Delay Lead in tone Requir Lead in Tone Lead out Delay	= 8 = 1000mse ed = yes = 8 = 20	°C			
Auto	🔁 🖻 🗗 A				
	Decode Si	gnalling Oj	ptions		
	Indiv Decode Id Group Decode Id Reset Decode Id	entity entity entity			
	Decode Tone Per Decode Tone Set	iod 40 CMI	ð ms L CCIR		
Indiv. Decode Respo Continuous Alert Urgent Alert Timed Reset Acknowledge Delayed Ack Ext O/P On Ext O/P Timed Ext O/P Urgent Called Indic On	No Group De No Normal No Group No Unmute No Called No Inhibi No Acknow No No Mute Se Called	code Respor Alert Alert Selcall Indic On Reset t PTT ledge Group Remu Icall Indic Off	nses Reset No Urg No Mut No Sto No Cal No Ack No Ack No Ext Dite Reset Re No Can No Ext	Decode Respo ent decode 1 e Selcall p alerts led Indic Off nowledge mal Alert output off sponses : cel Alerts output off	NSES No No No No No No No No
F1-Help F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

Nothing to change

MS PRM80	SW - PRM80SW			_ 🗆 ×
Auto				
	French Signalling (	Options		
6. 	Enable French Decoding	No		
	Caller Identity First	No		
	Encode Repeater Identity	No		
	Default Power-On Repeater			
	Encode Type	Identity	Tone Period	
	Repeater Identity (1) Repeater Identity (2)			
	Encode Called Party Identity	y Only		
	French Decode Ignore Timer	Ø	Secs	
F1-Help	F2-S.Plan F4-EEPROM F5-File	F8-Print	F10-Info.	Esc-Exit

Nothing to change

PRM80SW - PRM80SW			
Auto 💽 🛄 🛍 🔀	P A		
	Microph	one Operations	
Enable TX Inhibit	No	Timed ANI Timer	Ø Secs
Tx Limit Timer Re-PTT Limit Timer	0 Secs 0 Secs	Conversation Timer Re-Conversation Timer	Ø Secs Ø Secs
Remove Cradle Response	s	Replace Cradle Response	s
Send Cradle ANI Individual Encode	Disabled	Send Cradle ANI Individual Encode	No
Unmute CTCSS Unmute Selcall	No No	Mute CTCSS Mute Selcall	No No
Disable Timed Reset Set On-Call Indic	No No	Enable Timed Reset Clear On-Call Indic	No No
PTT On Responses		PTT Off Responses	
Unmute Selcall Send ANI	No Disabled	Send ANI	Disabled
-Help F2-S.Plan F	4-EEPROM	F5-File F8-Print F10-Inf	o. Esc-Ex

Nothing to change

MS PRM80S	W - PRM80SW					_ 🗆 ×
Auto	. <u>O</u> <b>B B</b>	🔁 🖻 🖪 🔺	]			
		Timed Rese	t & Kill Op	erations		
		Timed Reset Timed Reset Mute CTCS Mute Selc Clear Cal Stop Aler Re-enable External	Wait Time Actions S all led Indic ts PTT's 0/P Off	Secs No No No No No No No		
		Enable Kill Kill Timer	Feature Value	No Secs		
F1-Help	F2-S.Plan	F4-EEPROM	F5-File	F8-Print	F10-Info.	Esc-Exit

Nothing to change

😤 PRM80SW - PRM80SW							
Alarm Operation							
What is the Alarm Channel Nu	unber and a state of the state						
Emergency Identity Encode Co	unt 0						
Use French Encoding	No						
Alarm Display Mode	Normal						
Open selcall on Alarm sequer	ice No						
Is a covert microphone fitte	ed No						
Send an Emergency Identity H	ivery 30 secs						
Is Alarm Mode Initiated Exte	ernally No						
Exit Alarm Mode on Power Off	°∕On No						
F1-Help F2-S.Plan F4-EEPROM F5-File	F8-Print F10-Info. Esc-Exit						

Nothing to change

Ľ	🔓 PRM80SW - PRM80SW 📃 🗖 🗵									
Г	Auto 💽 🖾 🖻 😰 🚰 🗛									
ſ	CHANNEL TABLE									
ľ	Ch Valid Frequency Lockout				Lockout	CTCSS	Per Channel Options			
	59	R× T×	No				Selcall: Power :	Comm. Repeate Valid Scan C	er: h :	
	60	R× T×	Yes Yes	145.63750 145.03750	No No	Q	Selcall: No Power : High	Comm. Repeat Valid Scan C	er: h : Yes	
	61	R× T×	Yes Yes	145.66250 145.06250	No No		Selcall: Yes Power : High	Comm. Repeat Valid Scan C	er: h : Yes	
	62	R× T×	Yes Yes	145.65000 145.05000	No No	S	Selcall: No Power : High	Comm. Repeat Valid Scan C	er: h : Yes	
	63	R× T×	Yes Yes	145.71250 145.11250	No No	Q	Selcall: No Power : High	Comm. Repeat Valid Scan C	er: h : Yes	
	64	R× T×	Yes Yes	145.77500 145.17500	No No	F	Selcall: No Power : High	Comm. Repeat Valid Scan C	er: h : Yes	
	1-He	lp	F2-S	.Plan F4	-EEPROM	F5-Fi	le F8-Print	F10-Info.	Esc-Exit	

The only thing that you need to change is the Selcall option needs to be on Yes if you want the 1750Hz tone to be activated. This you can see in the above screenshot for channel 61

# 10. Frequency list (ON4HP & ON6NU)

# PHILIPS PRM 8020

Frequentie	Chan	Frequentie	Chan
144,500	1	145,400	33
144,525	2	145,4125	34
144,550	3	145,425	35
144,575	4	145,4375	36
144,600	5	145,450	37
144,625	6	145,4625	38
144,700	7	145,475	39
144,725	8	145,4875	40
144,750	9	145,500	41
144,775	10	145,5125	42
144,800	11	145,525	43
144,825	12	145,5375	44
144,850	13	145,550	45
144,875	14	145,5625	46
144.900	15	145,575	47
144,9125	16	145,5875	48
144.950	17	145,600	49
145,2125	18	145,6125 79,7 ON0GB	50
145,225	19	145,625	51
145,2375	20	145,6375 <i>131,8</i> ON0ZK	52
145,250	21	145,650 74,4 ON0LG	53
145,2625	22	145,6625 (1750) ON0NL	54
145,275	23	145,675 <i>131,8</i> ON0BT	55
145,2875	24	145,6875 74,4 ON0LTV	56
145,300	25	145,700 ON0OV	57
145,3125	26	145,7125 <i>131,8</i> ON0DST	58
145,325	27	145,725 71,9 PI3ZLB	59
145,3375	28	145,7375 79,7 ON0KTK	60
145,350	29	145,750 ON0LU	61
145,3625	30	145,7625 67,0 ON0AN	62
145,375	31	145,775 <i>131,8</i> ON0LB	63
145,3875	32	145,7875 DB0WA	64

Versie 2

# 11. Display Lay-out



# 12. <u>Final</u>

I hope this manual is of use to you and lets you enjoy this radio on our 2m band. I know that this radio has a lot more options than can be used but the purpose of this manual was to reprogram this radio as simple as possible for simplex and repeater communications.

Feel free to experiment with the other options but please before changing anything, make a back-up of the existing configuration you never know. Best to be at the safe side.

> 73 Erwin (ON3BWE)