NIRPL

Reference guide

File	Prepared	Date	Revised by	Rev date	Rev no	Approved
NIRPL.DOC	MT	24-03-99	MT		0	PA

Contents

NIRPL Reference guide

This document provides a reference on the NIRPL language as implemented with the NIRPL compile.

Comments:

Anything following the semicolon ';', is treated as a comment by the compile.

Negation of the conditional command:

For all the conditional command (these command begin with "?") the programmer can put the character "/" after "?" for negation of the command.

Example:

?KeyOn(Label) : If key ON flag then continue, otherwise jump to Label.

?/KeyOn(Label) : If **NOT** key ON flag then continue, otherwise jump to Label.

HEX number:

Hex number begin with '$'.

Example:

```
OrVarB($0F)          ; Or the current var with 0F hex
```

Syntax for writing code for Tone System:

- Alle commands not begin with '?' must start with the character '%' .
- Label start with character ':' and then label name.

1.1 ?AllEntry

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?AllEntry (Label)

Description If all digit entered then continue. Otherwise, jump to Label

1.2 ?AndB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?AndB (Address, DataByte, Label)

Description If the contents of the memory location referenced by the Address AND with DataByte, not equal 0 then continue. Otherwise jump to the Label.

Example:

```
 RetNoKey                          ; If key on flag then continue, otherwise exit
?AndB(FrontStat, 1, DisplayOffTextLabel)        ; If light On flag set ?
Branch(DisplayOnTextLabel)         ; Yes, jump to label DisplayOnTextLabel

DisplayOffTextLabel:
Binfo('Light is Off')              ; Write text to bottom line
Exit
DisplayOnTextLabel:
Binfo('Light is On')               ; Write text to bottom line
Exit
```

1.3 ?AndTmpB

Allow to use with :

Tone system	User function	System function
No	Yes	Yes

Syntax ?AndTmpB (DataByte, Label)
Description If the contents of the temporary variable AND with DataByte, not equal 0 then continue. Otherwise jump to the Label.

Example:

```
    RetNoKey                        ; If key on flag then continue, otherwise exit
    SetTmpPnt(ControlFlag1)         ; Tmp point = ControlFlag1
    ?AndTmpB(PaHFlag,NotHFlagLabel)     ; If Pa H flag set ?
    Binfo('PA equal H')             ; Yes, write ‘ Pa equal H’ to bottom line
    Exit
NotHFlagLabel:                      ; No, jump to here
    BInfo('PA not equal H')         ; Write ‘ Pa not equal H’ to bottom line
    Exit
```

1.4 ?AndVarB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?AndVarB (DataByte, Label)

Description If the contents of the Var variable AND with DataByte, not equal 0 then continue. Otherwise jump to the Label.

Example: Fejl! Bogmærke er ikke defineret.

```
    ?AndVarB($02, ZeroL)          ; Check Var's Bit1 = 1?
    .....                         ; Yes, continue
    .....
ZeroL:
    .....                         ; No, continue from here
    .....
```

1.5 ?AndW

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?AndW (Address, DataWord, Label)

Description If the contents of the memory location referenced by the Address AND with DataWord, not equal 0 then continue. Otherwise jump to the Label.

Warning: The Address parameter should pointer to a word variable (2 bytes long).

Example:

```
    ?AndW(UserBuf_V, $1234, ZeroLabel)   ; If the result not equal zero ?
    .....                                ; Yes, continue
    .....
ZeroLabel:
    .....                                ; No, continue here
    .....
```

1.6 ?Carr

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?Carr (Label)

Description If carrier then continue. Otherwise jump to the Label.

Example:

```
    ?Carr(L)        ; If carrier ?
    .............   ; Yes, continue
    .............
L:
    .............   ; No, continue here
    .............
```

1.7 ?CheckChNum

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?CheckChNum (Label)

Description Check channel in current variable, if valid then continue. Otherwise jump to Label.

Example: ?CheckChNum(NotValidL) ; Is the channel valid ?
..... ; Yes, continue
.....
NotValidL:
..... ; No, continue from here
.....

1.8 ?CmpBufDig

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?CmpBufDig (BufName, NibbleIndex, n, Label)

Description The contents of the nibble, reference by the NibbleIndex of the standard buffer BufName are compared for equality with n. If equal then continue. Otherwise jump to the Label.

The BufName describes in the table below. The buffer is 4 bytes long (8 digits).

Symbolic name	Description
V	Standard var buffer
W	Alternative var buffer
I	Primary ID var buffer
S	System digit var buffer
X	Tone system X buffer
J	Secondary ID var buffer
K	Alternative ID var buffer
L	Alternative ID var buffer
M	Alternative ID var buffer
T	Temporary buffer
Q	User temporary buffer
Ch	Current selected channel number
SCh	Current selected special channel number
ChC	Current channel tone buffer

Example: Check at digit number 4 in buffer V = 2

```
?CmpBufDig(V, 4, 2, Not2)
.....                    ; Yes, equal code
.....
Not2:
.....                    ; No, Not equal code
```

1.9 ?CmpDataN

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?CmpDataN (n, Address1, Address2, Label)
Description Compare the first n bytes of memory location Address1 and Address2. If equal then continue. Otherwise jump to Label.

Example: Toggle between org channel and special channel

```
    RetNoKey                          ; If key on flag then continue, otherwise exit
    ?CmpDataN(1,Channel,OrgChan,SetOrgCh)   ;Current channel = org channel ?
    MoveDataN(1,OrgChan,TB0)          ; Yes, save org channel
    MoveDataN(1,SpcChannel,Channel)   ; yes, set selected channel = special ch.
    ChSet(SetSel)                     ; current = selected channel
    MoveDataN(1,TB0,OrgChan)          ; Restore Org channel
    StdCue(Ill)                       ; gennerate special beep
    EndExit

SetOrgCh:
    MoveDataN(1,OrgChan,Channel)      ; No, set selected channel = org channel
    ChSet(SetSel)                     ; Current = selected channel
    EndExit
```

1.10 ?DecAdd

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?DecAdd (Address, Label)

Description Decrement the contents of the memory location reference by the Address and places the result back to the same location. If the result is NOT Zero then continue. Otherwise jump to the Label.

Example:

```
    ?DecAdd(UserBuf_T, ZeroLabel)      ; Result = 0 ?
    ..........                         ; No, continue
    ..........
ZeroLabel:
    ..........                         ; Yes, continue from here
    ..........
```

1.11 ?EmenuKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?EmenuKey (LabelA, LAbelB, LAbelC, LabelD)

Description If keycode equal extended menu key (A, B, C, D, Pu, Pd) jump to the Label for the key. Otherwise continue.
If KeyA pressed then Pu = KeyA.
If KeyB pressed then Pd = KeyB.

See also ?MenuKey.

Example: see example ?MenuKey.

1.12 ?FifoEmpty

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?FifoEmpty (Label)

Description If Tone Fifo empty continue. Otherwise jump to the Label.

1.13 ?FirstEntry

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?FirstEntry (Label)

Description If no digit entered then continue. Otherwise jump to the Label.

1.14 ?GDet

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?Gdet (Label)

Description If group tone detected then continue. Otherwise jump to the Label.

Example:

```
    ?GDet(L)      ; If group tone detected ?
    ..............      ; Yes, continue
    ..............
L:
    ..............      ; No, continue here
    ..............
```

1.15 ?Keycode

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?KeyCode (Key, Label)

Description If Keycode equal to Key then continue. Otherwise jump to Label

See Appendix C List of Key on page 213.

Example:

```
    RetNoKey
    KeyMask(M)          ; Mask key A - D
    NextKey
    ?KeyCode(B, L)      ; Is keycode equal key B ?
    Binfo('Key B')      ; Yes, display ‘Key B’
    EndExit

L:                      ; No, display ‘Not Key B’
    Binfo('Not Key B')
    EndExit
```

1.16 ?KeyDnPd

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?KeyDnPd (Label)

Description If Keycode equal KeyDown or KeyPd then continue. Otherwise jump to Label.

Example:

```
    RetNoKey
    KeyMask(AV)          ; Mask 0-F, Pu, Pd
    NextKey
    ?KeyDnPd(L)          ; Is keycode equal key down or key Pd ?
    Binfo('Key DnPd')    ; Yes, Key DnPd
    EndExit

L:                       ; No, write Not Key DnPd
    Binfo('Not Key DnPd')
    EndExit
```

1.17 ?KeyList

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?KeyList ((Key, Label) [, (Key, Label) [...]])

Description If key in list then jump to Label. Otherwise continue.

Example:

```
    RetNoKey
    KeyMask(AV)                    ;  Mask Key 0-F, Pu, Pd
    NextKey
    ?KeyList((0, L0), (A, LA), (Pu, LPu))
    EndExit

L0:                                ; Key 0 label
    Binfo('Key 0')
    EndExit

LA:                                ; Key A label
    Binfo('Key A')
    EndExit

LPu:                               ; Key Pu label
    Binfo('Key Pu')
    EndExit
```

1.18 ?KeyOn

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?KeyOn (Label)

Description If key On flag then continue. Otherwise jump to Label.

Example:

```
    ?KeyOn(LightFuncOff)    ; If key On flag ?
    Sys(LightOn)            ; Yes, turn light On
    Branch(LightFuncX)      ; Jump to label LightFuncX

LightFuncOff:               ; No, turn light off
    Sys(LightOff)

LightFuncX:
    Exit
```

1.19 ?KeyRep

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?KeyRep (Label)

Description If key rep flag then continue. Otherwise jump to Label.

Example:

```
    RetNoKey
    SetKeyRTim(200)        ; Preset key rep timer
    KeyMask(All)           ; Mask all keys
    NextKey                ; Wait for rep timeout
    ?KeyRep(L)
    Binfo('Key not repeat')
    EndExit
L:
    Binfo('Key repeat')
    EndExit
```

1.20 ?KeyUpPu

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?KeyUpPu (Label)

Description If keycode equal KeyUp or KeyPu then continue. Otherwise jump to Label

Example:

```
    RetNoKey
    KeyMask(AV)          ; Mask 0-F, Pu, Pd
    NextKey
    ?KeyUpPu(L)          ; Is keycode equal key up or key Pu ?
    Binfo('Key UpPu')    ; Yes, Key UpPu
    EndExit

L:                       ; No, write Not Key UpPu
    Binfo('Not Key UpPu')
    EndExit
```

1.21 ?LsOn

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?LsOn (Label)

Description If Ls On then continue. Otherwise jump to Label.

Example:

```
    RetNoKey
    NoFuncStb
    ?LsOn(Off)        ; Ls On ?
    Binfo('Ls On')    ; Yes, display Ls on
    Exit

Off:
    Binfo('Ls Off')   ; No, display Ls Off
    Exit
```

1.22 ?MenuKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?MenuKey (LabelA, LabelB, LabelC, LabelD)

Description If keycode equal menu key (A, B, C, D) jump to the Label for the key. Otherwise continue.

See also ?EmenuKey.

Example:

```
    RetNoKey
    KeyMask(M)
    NextKey
    ?menukey(LA, LB, LC, LD)
    EndExit                     ; If not menu key exit

LA:                             ; Label for key A
    Binfo('Key A')
    EndExit

LB:                             ; Label for key B
    Binfo('Key B')
    EndExit

LC:                             ; Label for key C
    Binfo('Key C')
    EndExit

LD:                             ; Label for key D
    Binfo('Key D')
    EndExit
```

1.23 ?MinToneLen

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?MinToneLen(TimeLength, Label)

Description Check current tone length, if > TimeLength then continue, Otherwise jump to Label

Example:

```
    %?MinToneLen(1000, L)       ; If Tone length > 1000 ms
    .....                       ; Yes, continue
    .....
:L
    .....                       ; No, continue here
    .....
```

?MptXData

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax MptXData (TimeLength, Label)

Description If MPT X Data received within TimeLength (milliseconds) then continue. Otherwise jump to Label.

1.24 ?NoKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?NoKey (Label)

Description If key equal No key then continue. Otherwise jump to the Label.

Example:

```
    ?NoKey(L)       ; If Key equal No key ?
    .............   ; Yes, continue
    .............
L:
    .............   ; No, continue here
    .............
```

1.25 ?NumKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ?NumKey (Label)

Description If number key then continue. Otherwise jump to the Label.

Example:

```
    RetNoKey
    KeyMask(AV)              ; Mask key 0-F, Pd, Pu
    NextKey
    ?NumKey(L)               ; If key is number key ?
    Binfo('Number key')      ; Yes, display 'Number key'
    EndExit

L:
    Binfo('Not number key')  ; No, display 'Not number key'
    EndExit
```

1.26 ?QDig

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?QDig (NibbleIndex|Data, Label)

Description The contents of the nibble, reference by the NibbleIndex of the memory location, reference by the Q tone buffer pointer are compared for equality with the Data.
If equal then continue. Otherwise jump to the Label.

See also ?XDig, SetBufPnt.

Example:

```
    ?QDig($24, NotLabel)        ; If nibble 2 equal 4 ?
    .............               ; Yes, continue
    .............
:NotLabel
    .............               ; No, continue from here
    .............
```

1.27 ?RepCnt

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?RepCnt (Label)

Description If repeat count NOT equal Zero then continue. Otherwise jump to the Label.

See also SetRepCnt.

Example:

```
    ?RepCnt(L)      ; If carrier ?
    ..............  ; Yes, continue
    ..............
:L
    ..............  ; No, continue here
    ..............
```

1.28 ?RxResp

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?RxResp (TimeLength, Label)

Description If RX responce within TimeLength (milliseconds) then continue. Otherwise jump to the Label.

Example:

```
    ?RxResp(100, NotLabel)        ; If RX response within 100 ms
    .............                 ; Yes, continue
    .............
:NotLabel
    .............                 ; No, continue from here
    .............
```

1.29 ?TextOk

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?TextOk (Label)

Description Received “tone text”, if Ok then continue. Otherwise jump to the Label.

1.30 ?Tst

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax ?Tst(BitFlag, Label)

Description If BitFlag=1 then continue. Otherwise jump to the label.

See Appendix G List of System flag on page 217.

Example:

```
    ?Tst(AutoStb, NotLabel)          ; If bit AutoStb = 1
    .............                    ; Yes, continue
    .............
:NotLabel
    .............                    ; No, continue from here
    .............
```

1.31 ?XDig

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ?XDig (NibbleIndex|Data, Label)

Description The contents of the nibble, reference by the NibbleIndex of the X buffer are compared for equality with the Data.
If equal then continue. Otherwise jump to the Label.

See also ?QDig.

Example:

```
    ?XDig($24, NotLabel)        ; If nibble 2 equal 4 ?
    .............               ; Yes, continue
    .............
:NotLabel
    .............               ; No, continue from here
    .............
```

1.32 AddBinKey

Allow to use with:

Tone system	User function	System function
No	Yes	No

Syntax AddBinKey

Description Add current key, binary to tempbuffer (word)

1.33 AndB

Allow to use with:

Tone system	User function	System function
Yes	Yes	Yes

Syntax AndB (Address, Data)

Description AND Data with the contents of the data memory location referenced by the Address.
The result is placed back in the data memory location referenced by the Address.

Example:

```
AndB(Channel, $0F)          ; Add the contents of the Channel with $0F
```

1.34 AndTmpB

Allow to use with:

Tone system	User function	System function
No	Yes	No

Syntax AndTmpB (DataByte)

Description AND current temporary variable with DataByte.

Example:

```
AndTmpB($12)        ; And the current temp with 12 Hex
```

1.35 AndVarB

Allow to use with:

Tone system	User function	System function
Yes	Yes	Yes

Syntax AndVarB (Data)

Description AND current Var with Data

Example:

```
AndVarB($12)        ; And the current Var with 12 Hex
```

1.36 AutoKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax AutoKey(TimeLength)

Description Generate a keypressed every TimeLength.

Example:

```
AutoKey(200)          ; Gennerate a keypress every 200 ms
```

1.37 BInfo

Allow to use with:

Tone system	User function	System function
Yes	No	No

Syntax BInfo (‘message’)

Description Write message to bottom line.

Example:

```
%Binfo('PA equal H')        ; Write ‘ Pa equal H’ to bottom line
```

1.38 BMsg

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax BMsg (‘message’)

Description Display message at bottom line and generate error cue.

Example:

```
RetNoKey
BMsg('Hello world')      ; Display ‘Hello world ‘
Exit
```

1.39 Branch

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax Branch (Label)

Description Jump to Label.

Example:

```
    RetNoKey                        ; If key on flag then continue, otherwise exit
    ?AndB(FrontStat, 1, OffLabel)   ; If light On flag set ?
    Branch(OnLabel)                 ; Yes, jump to OnLabel

OffLabel:
    Binfo('Light is Off')           ; Write text to bottom line
    Exit

OnLabel:
    Binfo('Light is On')            ; Write text to bottom line
    Exit
```

1.40 BScrollKey

Allow to use with

Tone system	User function	System function
No	Yes	No

Syntax BScrollKey

Description Back scroll key to var buffer

1.41 CallStack

Allow to use with

Tone system	User function	System function
Yes	No	No

Syntax CallStack(CallStackType)

Description Call stack function

The CallStackType is describes in the table below.

Symbolic name	Description
Clr	Clear call stack
Del	Del current call stack
Up	Scroll call stack clockwise
Dn	Scroll call stack counter clockwise
Rcl	Recall current call stack
XMit	Transit current call stack

1.42 CalRcl

Allow to use with

Tone system	User function	System function
No	Yes	Yes

Syntax CalRcl

Description Recall calibration data

1.43 CalSto

Allow to use with

Tone system	User function	System function
No	Yes	Yes

Syntax CalSto

Description Store current calibration data.

1.44 ChannelCheck

Allow to use with

Tone system	User function	System function
Yes	No	No

Syntax ChannelCheck(Ctl)

Description Test for scan and Ls status.

1.45 ChSearch

Allow to use with

Tone system	User function	System function
Yes	No	No

Syntax ChSearch (Mode, Ctl, CallNo)

Description Init channel search.

1.46 ChSet

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax ChSet (ChannelNum | ChSetType)

Description Channel control.

ChannelNum : 0..99
The ChSetType is describes in the table below.

Symbolic name	Description
SaveCall	Save call channel number
PushCh	Push current to “stack”
PopCh	Pop current from “stack”
UpdCur	Update current channel
UpdSel	Update selected channel
SetSel	Set current selected channel
SelCur	Set current as selected
SetNext	Set next selected channel
SetPrev	Set previous selected channel
SetSpc	Set current selected special channel
SpcNext	Set next selected special channel
SpcPrev	Set previous selected special channel
NextTmp	Get next valid channel to temporary buffer
PrevTmp	Set previous valid channel to temporary buffer
SelTmp	Set Temp as current selected
SetBase	Set current base channel
SelKey	Set selected channel as current key

Example: Set current channel = special channel

```
RetNoKey                    ; If key on flag then continue, otherwise exit
MoveDataN(1,SpcChannel,Channel)    ;Set selected channel = special ch.
ChSet(SetSel)               ; current = selected channel
EndExit
```

1.47 Clr

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax Clr(BitFlag)

Description Clear the bit flag.

See Appendix G List of System flag on page 217.

Example:
Clr(AutoStb) ; Clr AutoStb bit

1.48 ClrDisBlock

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax ClrDisBlock

Description Clear display block flag.

1.49 ClrTag

Allow to use with

Tone system	User function	System function
Yes	No	No

Syntax ClrTag

Description Clear stardard error tag (tag 0).

1.50 CmpB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax CmpB (Address, DataByte, Label1, Label2)

Description Compare the contents of the memory location referenced by the Address with DataByte.
if contents of Address > DataByte then Label1.
if contents of Address = DataByte then continue.
if contents of Address < DataByte then Label2.

Example:

```
    RetNoKey
    ?CmpB(CallStackSize, 1, L1, L2)      ; Compare CallStackSize with 1
    Binfo('CStacksize = 1')              ; CallSatackSize = 1
    Exit

L1:
    Binfo('CStacksize > 1')              ; CallSatackSize > 1
    Exit
L2:
    Binfo('CStackZize < 1')              ; CallSatackSize < 1
    Exit
```

1.51 DecRepCnt

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax DecRepCnt

Description Decrement repeat counter.

1.52 DecTmp

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax DecTmp

Description Decrement current temporary var.

1.53 DecVar

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax DecVar

Description Decrement current var.

1.54 DefFuncDelay

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax DefFuncDelay

Description Set function standby delay = default.

1.55 DefToneLen

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax DefToneLen

Description Set default tone length.

1.56 DisBar

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax DisBar(BarType, BarVarType)

Description Select left bar, right bar, bar variable.

The BarType is describes in the table below.

Symbolic name	Description
L	Select left bar
R	Select right bar
LTim	Select left and start bar time
RTim	Select right and start bar time

The BarVarType is describes in the table below.

Symbolic name	Description
Def	Display default bar info
Vol	Current Volume
Batt	Battery level
Rssi	Current RSSI level
TVol	Current temporary volume level
8	@TempPnt bit 0-2 (8 step)
16	@TempPnt bit 0-3 (16 step)
32	@TempPnt bit 0-4 (32 step)
42	@TempPnt bit 0-42 (42 step)
64	@TempPnt bit 0-42 (8 step)
128	@TempPnt bit 0-42 (8 step)
256	@TempPnt bit 0-42 (8 step)

Example:

```
DisBar(R,Vol)        ; Select the right Bar for the Volume
```

1.57 Display

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax Display (Layer, Mask, L)

Description Write to display.

1.58 Dtmf

Allow to use with

Tone system	User function	System function
Yes	No	No

Syntax Dtmf (0/1)

Description Set/Clear DTMF mode (0 = Clear, 1 = Set).

1.59 End

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax End

Description Exit to main program.

1.60 EndExit

Allow to use with

Tone system	User function	System function
No	Yes	Yes

Syntax EndExit

Description Exit and jump to current standby function.

Example:

```
    RetNoKey
    KeyMask(M)
    NextKey
    ?KeyCode(B, L)       ; Is keycode equal key B ?
    Binfo('Key B')       ; Yes, display ‘Key B’
    EndExit

L:                       ; No, display ‘Not Key B’
    Binfo('Not Key B')
    EndExit
```

1.61 EndStb

Allow to use with

Tone system	User function	System function
No	Yes	Yes

Syntax EndStb
Description Exit and set standby function.

1.62 EntryCnt

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax EntryCnt (BufName, Cmd)

Description Entry counter control.

Cmd: Get, Set, Inc, Dec.

The BufName describes in the table below. The buffer is 4 bytes long (8 digits).

Symbolic name	Description
V	Standard var buffer
W	Alternative var buffer
I	Primary ID var buffer
S	System digit var buffer
X	Tone system X buffer
J	Secondary ID var buffer
K	Alternative ID var buffer
L	Alternative ID var buffer
M	Alternative ID var buffer
T	Temporary buffer
Q	User temporary buffer
Ch	Current selected channel number
SCh	Current selected special channel number
ChC	Current channel tone buffer

1.63 FifoIn

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax FifoIn

Description Put current key into fifo buffer.

1.64 FifoOut

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax FifoOut

Description Remove tone from FiFo buffer.

1.65 FillBuf

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax FillBuf (Data)

Description Fill buffer with Data.

1.66 FuncL

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax FuncL (*"Display Command"*)

Description Setup function string display.

Appendix A Display command on page 182 shows how to use this command.

1.67 FuncLock

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax FuncLock

Description Lock current function as Standby function.

1.68 IllExit

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax IllExit

Description Generate illegal cue and exit.

1.69 IncTmp

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax IncTmp

Description Increment current temporary variable.

1.70 IncVar

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax IncVar

Description Increment current variable.

1.71 InitEntry

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax InitEntry

Description Initiate entry digit counter.

1.72 JumpFunc

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax JumpFunc (FunctionName)

Description Jump to function FunctionName with current key.

See Appendix B List of Function name on page 210.

Example:
JumpFunc(ChStepDn) ; Jump to function channel step down

1.73 JumpP

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax JumpP (Ptr)

Description Reserved sys 3.

1.74 KbBlock

Allow to use with :

Tone system	User function	System function
Yes	Yes	No

Syntax KbBlock (KbBlockType)

Description Keyboard block control.

The KbBlockType used with tone system is describes in the table below. When the tone system terminated, the keyboard will automatic unblocked.

Symbolic name	Description
TonClr	Unblock all keys
TonSet	Block 16-keys
ETonSet	Block extended keys
ATonSet	Block all keys

The KbBlockType used with user function is describes in the table below.

Symbolic name	Description
FunClr	Unblock all keys
FunSet	Block 16-keys
EFunSet	Block extended keys
AFunSet	Block all keys

Example:

```
KbBlock(ATonSet)        ; Block all keys
```

1.75 KeyMask

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax KeyMask (KeyMaskType)

Description Set standard key redirect mask.

The KeyMaskType is describes in the table below.

Symbolic name	Description
Clr	Clear key mask
N	Redirect key 0 – 9
M	Redirect key A – D
MN	Redirect key 0 - 9, A- D
A	Redirect key 0 – F
ASM	Redirect key 0 – F, S and M
All	Redirect all keys
AV	Redirect key 0 – F, Vol (Pu, Pd)
Def	Get redirected mask from “DefKeyMask”
Alt	Get redirected mask from “AltKeyMask”
Det+PTT	
AUX+PTT	

Example:

```
    RetNoKey
    KeyMask(M)          ; Mask key A - D
    NextKey
    ?KeyCode(B, L)      ; Is keycode equal key B ?
    Binfo('Key B')      ; Yes, display ‘Key B’
    EndExit
L:                      ; No, display ‘Not Key B’
    Binfo('Not Key B')
    EndExit
```

1.76 LoadP

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax LoadP (Label)

Description Load function tab pointer.

1.77 LsCtl

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax Lsctl (LsCtlType)

Description Ls control

The LsctlType is describes in the table below.

Symbolic name	Description
Off	Ls off
On	Ls on
Stb	Ls standby
Carr	Carrier Ls on
A	A Sub Ls on
B	B Sub Ls on
C	C Sub Ls on

Example:
LsCtl(Stb) ; Ls standby

1.78 MenuL

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax MenuL ([A][B][C][D][menu A],[menu B],[menu C],[menu B])

Description Write to menu line and menu arrows.

Example:
MenuL((‘ABC’),(‘XYZ’),(’123’),(’:-)’)) ; Write simple menu text, arrow = OFF

MenuL(ABCD(‘ABC’),(‘XYZ’),(’123’),(’:-)’)) ; With arrow = ON

MenuL(BD(‘ABC’),(‘XYZ’),(’123’),(’:-)’)) ; Only arrow BD = ON

MenuL(ACD(‘ABC’),,(’123’),(’:-)’)) ; Skipping B

MenuL(ABCD({“house”}),(‘XYZ’),({“car”}),(’:-)’)) ; Combined text and icons

MenuL(ABCD({@0}),({@1}),({@6}),({@8})) ; Using “standard” icons

MenuL(, , ,) ; Clear menu line and all arrows

1.79 MoveBufN

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax MoveBufN (BufName_S, BufName_D, n)

Description Move n bytes from BufName_S (source) to BufName_D (destination).

The BufName describes in the table below. The buffer is 4 bytes long (8 digits).

Symbolic name	Description
V	Standard var buffer
W	Alternative var buffer
I	Primary ID var buffer
S	System digit var buffer
X	Tone system X buffer
J	Secondary ID var buffer
K	Alternative ID var buffer
L	Alternative ID var buffer
M	Alternative ID var buffer
T	Temporary buffer
Q	User temporary buffer
Ch	Current selected channel number
SCh	Current selected special channel number
ChC	Current channel tone buffer

Example:

```
MoveBufN(V, T, 2)       ; Move 2 bytes from buffer V to buffer T
```

1.80 MoveDataN

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax MoveDataN (n, Source, Destination)

Description Move n bytes from source to destination.

Example: Toggle between org channel and special channel

```
    RetNoKey          ; If key on flag then continue, otherwise exit
    ?CmpDataN(1,Channel,OrgChan,SetOrgCh)  ; Current channel = org channel ?
    MoveDataN(1,OrgChan,TB0)          ; Yes, save org channel
    MoveDataN(1,SpcChannel,Channel)   ; yes, set selected channel = special ch.
    ChSet(SetSel)                     ; current = selected channel
    MoveDataN(1,TB0,OrgChan)          ; Restore Org channel
    StdCue(Ill)                       ; gennerate special beep
    EndExit

SetOrgCh:
    MoveDataN(1,OrgChan,Channel)      ; No, set selected channel = org channel
    ChSet(SetSel)                     ; Current = selected channel
    EndExit
```

1.81 MptCmd

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax MptCmd (Command)

Description Execute MPT command.

1.82 MptWait

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax MptWait (Time, Ofs)

Description Wait time for MPT command to end.

1.83 NextKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax NextKey

Description Save pointer and exit.

Example:

```
    RetNoKey
    KeyMask(M)          ; Mask key A - D
    NextKey
    ?KeyCode(B, L)      ; Is keycode equal key B ?
    Binfo('Key B')      ; Yes, display ‘Key B’
    EndExit

L:                      ; No, display ‘Not Key B’
    Binfo('Not Key B')
    EndExit
```

1.84 NoAutoStb

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax NoAutoStb

Description Disable auto standby timer for this key.

Example: Turn down volume

```
RetNoKey
Sys(VolDn)      ; Turn down volume
NoCue           ; Disable cue
NoFuncStb       ; Don't preset function standby timer
NoAutoStb       ; Disable auto standby timer
Exit
```

1.85 NoCue

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax NoCue

Description Disable cue for this key.

Example: Turn down volume

```
RetNoKey
Sys(VolDn)      ; Turn down volume
NoCue           ; Disable cue
NoFuncStb       ; Don't preset function standby timer
NoAutoStb       ; Disable auto standby timer
Exit
```

1.86 NoFuncStb

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax NoFuncStb

Description Don't preset function standby timer for this key.

Example: Turn down volume

```
RetNoKey
Sys(VolDn)      ; Turn down volume
NoCue           ; Disable cue
NoFuncStb       ; Don't preset function standby timer
NoAutoStb       ; Disable auto standby timer
Exit
```

1.87 OrB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax OrB(Address, DataByte)

Description OR the DataByte with the contents of the memory location referenced by the Address.

Example:

```
OrB(DispMode, $01)        ; Or the contents of DispMode with 1
```

1.88 OrTmpB

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax OrTmpB (DataByte)

Description OR the current temporary variable with DataByte.

Example:

```
OrTmpB($01)          ; Or the current temp with 1
```

1.89 OrVarB

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax OrVarB (DataByte)

Description OR the current variable with DataByte.

Example:

```
OrVarB($01)          ; Or the current Var with 1
```

1.90 PaLev

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax PaLev (PaLevelType)

Description Set Pa level.

The PaLevelType used with tone system is describes in the table below. When the tone system is terminated, the Pa level will automatic reset.

Symbolic name	Description
TonL	Low level
TonM	Medium level
TonH	High level

The PaLevelType used with user function is describes in the table below.

Symbolic name	Description
L	Low level
M	Medium level
H	High level

Example:

%PaLev(TonH) ; Set Pa level to high in tone system

PaLev(M) ; Set Pa level to medium in user function

1.91 Pause

Allow to use with :

Tone system	User function	System function
No	Yes	Yes

Syntax Pause (TimeLength)

Description Pause for the time specified by TimeLength (milliseconds).

Example:

```
Pause(100)        ; Pause for 100 ms
```

1.92 PushCall

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax PushCall (Mask)

Description Push current call to callstack.

1.93 PushP

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax PushP

Description Set function tab pointer equal current.

1.94 PushReset

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax PushReset (Label)

Description Push tonesystem reset vector.

1.95 QuickSekvIni

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax QuickSekvIni

Description Init current quick setup sequence no.

1.96 QuickSet

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax QuickSet (QNo, Mask)

Description Read or process function marco.

1.97 ReadSetup

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax ReadSetup (SetupNo)

Description Read setup data set.

1.98 RetNoKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax RetNoKey

Description If key on flag then continue, otherwise exit.

Example:

```
    RetNoKey                          ; If key on flag then continue, otherwise exit
    ?AndB(FrontStat, 1, DisplayOffTextLabel)          ; If light On flag set ?
    Branch(DisplayOnTextLabel)        ; Yes, jump to label DisplayOnTextLabel

DisplayOffTextLabel:
    Binfo('Light is Off')             ; Write text to bottom line
    Exit
DisplayOnTextLabel:
    Binfo('Light is On')              ; Write text to bottom line
    Exit
```

1.99 RotNib

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax RotNib(NibbleNo, Address, Dir)

Description Rotate once nibble 1-NibbleNo of buffer at 'Address'.
If Dir <> 0 rotate backward.
If Dir = 0 rotate forward.

Example:

```
; Rotate nibble 1 – nibble 5 in buffer V once
RotNib(5, UserBuf_V, 0)          ; n1 = n2, n2 = n3, ..... , n5 = n1
```

1.100 RTag

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax RTag (Label)

Description Set standard error tag.

1.101 RxGEna

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax RxGEna

Description Enable group tone for next tone.

1.102 SaveX

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax SaveX

Description Save current X digits.

1.103 ScnStop

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ScnStop (0/1)

Description Set/Clear scan tone stop. (0 = Clear, 1 = Set).

Example:
ScnStop(1) ; Set scan tone stop

1.104 ScrollKey

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax ScrollKey

Description Scrollkey to var buffer.

1.105 SearchNxt

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax SearchNxt

Description Next channel in channel search.

1.106 SelTabLink

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SelTabLink (TabType, LinkNo)

Description Set linked tab no.

1.107 Set

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax Set(BitFlag)

Description Set the bit flag.

See Appendix G List of System flag on page 217.

Example:
Set(AutoStb) ; Set AutoStb bit

1.108 SetBufPnt

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax SetBufPnt (LongAddress)

Description Set special Q tone buffer pointer. The Address must be 32 bits.

See also ?QDig, SetStdPnt.

Example:

```
SetBufPnt(UserBuf_T)          ; Q tone buffer pointer to Temporary buffer
```

1.109 SetFunc

Allow to use with :

Tone system	User function	System function
Yes	Yes	No

Syntax SetFunc (FunctionName)

Description Set standard function with KeySys.

See Appendix B List of Function name on page 210.

Example:
SetFunc(Alarm) ; Set Alarm function with KeySys

1.110 SetFuncDelay

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetFuncDelay (TimeLength)

Description Set function standard delay equal TimeLength (milliseconds).

Example:
SetFuncDelay(100) ; Set function standard delay equal 100 ms

1.111 SetKeyCode

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetKeyCode(Key)

Description Set current keycode.

See Appendix C List of Key on page 213.

Example:
SetKeyCode(A) ; Current key code = Key A

1.112 SetKeyRTim

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetKeyRTim (TimeLength)

Description Set repeat timer equal TimeLength (milliseconds).

Example:

```
    RetNoKey
    SetKeyRTim(200)        ; Preset key rep timer
    KeyMask(All)           ; Mask all keys
    NextKey                ; Wait for rep timeout
    ?KeyRep(L)
    Binfo('Key not repeat')
    EndExit
L:
    Binfo('Key repeat')
    EndExit
```

1.113 SetOff

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax SetOff

Description Turn radio Off.

Example:

```
RetNoKey
StoUserSetup        ; Store current user setting
SetOff              ; Turn radio off
Exit
```

1.114 SetRepCnt

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax SetRepCnt (Counter)

Description Preset repeat counter.

See also ?RepCnt.

1.115 SetScanList

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetScanList (n)

Description Set scan list number n.

Example:
SetScanList(2) ; Scan list number = 2

1.116 SetStbFn

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetStbFn (FunctionName)

Description Set current standby function equal FunctionName.

See Appendix B List of Function name on page 210.

Example:
SetStbFn(MENU_0) ; Current standby function = User menu function 0

1.117 SetStbTim

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetStbTim (TimeLength)

Description Set standby timer equal TimeLength (milliseconds).

Example:

```
SetStbTim(100)      ; Set standby timer to 100 ms
```

1.118 SetStdPnt

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax SetStdPnt (BufName)

Description Set standard Q tone buffer equal BufName.

The BufName describes in the table below. The buffer is 4 bytes long (8 digits).

Symbolic name	Description
V	Standard var buffer
W	Alternative var buffer
I	Primary ID var buffer
S	System digit var buffer
X	Tone system X buffer
J	Secondary ID var buffer
K	Alternative ID var buffer
L	Alternative ID var buffer
M	Alternative ID var buffer
T	Temporary buffer
Q	User temporary buffer
Ch	Current selected channel number
SCh	Current selected special channel number
ChC	Current channel tone buffer

Example:
%SetStdPnt(V) ; Set Q buffer = standard var buffer

1.119 SetStdVarForm

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetStdVarFrom (Format, Type, Offset)

Description Set var data format to standard var.

1.120 SetTabPnt

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetTabPnt (TabType, Address)

Description Set tab pointer.

1.121 SetTmpPnt

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetTmpPnt (Address)

Description Set “temp pointer” with Address.

Example:

```
SetTmpPnt(UserBuf_V)          ; Temp pointer = buffer V
```

1.122 SetTone1

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetTone1 (Count)

Description Set Tone generator 1 equal Count.

Example:
SetTone1(2000)

1.123 SetTone2

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetTone2 (Count)

Description Set tone generator 2 equal Count.

Example:
SetTone2(1000)

1.124 SetUserText

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetUserText (Code)

Description Set User text number.

1.125 SetVarPnt

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetVarPnt (Address)

Description Load var pointer with Address.

Example:

```
SetVarPnt(UserBuf_V)      ; Var pointer to buffer V
```

1.126 SetVarS

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SetVarS (Pos, , Address)

Description Setup current var string and display it.

1.127 SpcVarForm

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SpcVarForm (Format, Address)

Description Set current var data format.

1.128 SpecKeyMask

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SpecKeyMask (Keymask, EKeymask)

Description Set spec key redirect mask.

Keymask or EKeymask is stored in a word (16 bits), where bit0 in the KeyMask is used to mask Key 0, bit 2 mask Key 2 eg. Bit0 in the EKeyMask is used to mask Key M, bit 2 mask Key T2 eg. See Appendix C List of Key on page 213.

1.129 SpcTxTone

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax SpcTxTone (Tone1, Tone2)

Description Transmit special tone.

1.130 StbReq

Allow to use with :

Tone system	User function	System function
Yes	Yes	No

Syntax StbReq

Description Set function standby request flag.

1.131 StdCue

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax StdCue (StdCueType)

Description Generate standard cue.

StdCueType is decribes in the table below.

Symbolic name	Description	Symbolic name	Description
Clr	Clear cue	Al2	Standard alarm 2
Init	Init cue	Al3	Standard alarm 3
Key	Key cue	Al0M	Std. Alarm 0 max vol.
Ill	Ill key cue	Al1M	Std. Alarm 1 max vol.
Err	Error cue	Al2M	Std. Alarm 2 max vol.
Ok	OK cue	Al3M	Std. Alarm 3 max vol.
Att	Attention cue	User0	Special user alarm 0
Wait	Wait cue	User1	Special user alarm 1
Occ	Occupied cue	User2	Special user alarm 2
Discard	Discard cue	User3	Special user alarm 3
Critical	Critical error cue	User4	Special user alarm 4
AlClr	Alarm clear	User5	Special user alarm 5
Ack	Acknowledge cue	User6	Special user alarm 6
Al0	Standard alarm 0	User7	Special user alarm 7
Al1	Standard alarm 1		

Example:

```
RetNoKey
StdCue(Ok)      ;   Generate Ok cue
Exit
```

1.132 StdFunc

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax StdFunc (FunctionName, Key)

Description Do function number.

See Appendix B List of Function name on page 210.
See Appendix C List of Key on page 213.

Example:

```
RetNoKey
StdFunc(Battery)      ; Display battery level
Exit
```

1.133 StdInfoT

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax StdInfoT(MessageNumber)

Description Write standard tone message with MessageNumber to top line.

Example:
%StdInfoT(2) ; Write standard message no. 2 to top line

1.134 StdMenu

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax StdMenu (MenuNumber)

Description Setup standard menu string and display.

1.135 StdMsgB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax StdMsgB (MsgGroup+offset)

Description Display standard error message and error cue.

Example:

```
RetNoKey
StdMsgB(InfoString+6)      ; Display message no. 6 of InfoString
Exit
```

1.136 StdMsgT

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax StdMsgT (MsgGroup + offset)

Description Display standard message at top line.

Example:

```
RetNoKey
StdMsgT(InfoString+6)      ; Display message no. 6 in InfoString
Exit
```

1.137 StoUserSetup

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax StoUserSetup

Description Store the user setup.

Example:

```
RetNoKey
StoUserSetup        ; Store current user setting
SetOff              ; Turn radio off
Exit
```

1.138 StoVar

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax StoVar (Num, Address)

Description Store Num byte from the current var buffer to Address.

1.139 Sys

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax Sys (SysFuncType)

Description System function call.

SysFuncType is decribes in the table below.

Symbolic name	Description
VolUp	Volume level up
VolDn	Volume level down
SqUp	Squelch level up
SqDn	Squelch level down
SqHyUp	Squelch hysteresis level up
SqHyDn	Squelch hysteresis level down
PaUp	Pa level up
PaDn	Pa level down
RefUp	Reference oscillator up
RefDn	Reference oscillator down
LightOn	Keyboard/display light on
LightOff	Keyboard/display light off
UpdAf	Update AF mode
DisOff	Disable all display update
DisOn	Enable display update

Example:

```
RetNoKey
Sys(VolUp)      ; Turn volume up
Exit
```

1.140 SysTx

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax SysTx (0/1)

Description Set/Clear system TX request (0 = Clear, 1 = Set).

1.141 Tgl

Allow to use with

Tone system	User function	System function
Yes	Yes	Yes

Syntax Tgl(BitFlag)

Description Toggle bit flag.

See Appendix G List of System flag on page 217.

Example:
Tgl(AutoStb) ; Toggle AutoStb bit

1.142 Timer

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax Timer (TimerAddress, TimeLength)

Description Load the timer referenced by the TimerAddress with TimeLength (milliseconds).

Example:
Timer(TimFunc, 1000) ; Set TimFunc = 1000 ms

1.143 TInfo

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax TInfo (‘message’)

Description Write tone message to top line.

Example:
%TInfo('Hello world') ; Write ‘Hello world’ to top line

1.144 TMsg

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax TMsg (‘message’)

Description Display Message.

Example:
RetNoKey
Tmsg('Hello world')
Exit

1.145 ToneLen

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ToneLen (TimeLength)

Description Set current tone length equal TimeLength (milliseconds).

1.146 ToneMonitor

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax ToneMonitor

Description Enable tone monitor.

1.147 ToneSysClr

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax TonSysClr

Description Clear tone system.

1.148 TPause

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax TPause (TimeLength)

Description Set tone system pause for the time specified by TimeLength (milliseconds).

1.149 TReset

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax TReset

Description End and reset tone system.

1.150 TStdFunc

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax TStdFunc (FunctionName, Key)

Description Do function number.

See Appendix B List of Function name on page 210.
See Appendix C List of Key on page 213.

1.151 TxEnd

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax TxEnd

Description End transmission of Tx tone.

1.152 TxPreAmb

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax TxPreAmb (TimeLength)

Description Transmit preamble for TimeLength (milliseconds).

1.153 TxSekvIni

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax TxSekvIni (SequenceNo)

Description Initiate TX tone sequence with sequence number.

1.154 TxStart

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax TxStart

Description Start TX tone transmit.

1.155 UpdDisB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax UpdDisB

Description Update menu line.

1.156 UpdDisT

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax UpdDisT

Description Update function line.

1.157 UpdOptShift

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax UpdOptShift

Description Update option shift registers.

1.158 UpdShift

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax UpdShift

Description Opdate shift register.

1.159 UserText

Allow to use with :

Tone system	User function	System function
Yes	Yes	No

Syntax UserText (n/control.w)

Description Set display user text.

1.160 VarAdj

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax VarAdj (VarAdjType)

Description Control current var buffer.

The VarAdjType is describes in the table below.

Symbolic name	Description
Get	Get var count for current var type
Set	Set var count for current var type
Inc	Increment var
Dec	Decrement var

1.161 Volume

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax Volume (LevelNo, CmdNo)

Description Select or set volume level or temporary volume level.

The LevelNo is describes in the table below.

LevelNo	Description
0	Set level to current volume
1	Set level to temporary volume
2-21	Set level

The CmdNo is describes in the table below.

CmdNo	Description
0	Set current equal level and select current
1	Set Temp equal level and select Temp until next key
2	Set Temp equal level and select until cleared.
3	Set M[6,7] = Temp
4	Set Temp = M[6,7]

Example:

```
RetNoKey
Volume(15,0)     ; Select and set current level equal 15
Exit
```

1.162 WaitCarr

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax WaitCarr (TimeLength, Label)

Description If carrier detected within the TimeLength (milliseconds) then continue. Otherwise jump to Label.

Example:

```
    %WaitCarr(1000,NotDetectLabel) ; If carrier detected within 1 second ?
    .....                          ; Yes, continue
    .....
:NotDetectLabel
    .....                          ; No, continue from here
    .....
```

1.163 WaitNoCarr

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax WaitNoCarr(TimeLength, Label)

Description If NO carrier detected within the TimeLength (milliseconds) then continue. Otherwise jump to Label.

Example:

```
    %WaitNoCarr(1000, DetectLabel)      ; If no carrier detected within 1 second ?
    ..........                          ; No carrier detected, continue
    ..........
:DetectLabel
    ..........                          ; Carrier detected, continue from here
    ..........
```

1.164 WrB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax WrB (Address, Databyte)

Description Write DataByte to the memory location referenced by the Address.

Example:

```
WrB(UserBuf_T, 5)       ; Write 5 to temporary buffer
```

1.165 WrW

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax WrW (Address, DataWord)

Description Write DataWord to the memory location referenced by the Address.

Example:

```
WrW(UserBuf_T, $0102)        ; Write $0102 to the Temporary buffer
```

1.166 WrI2C

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax WrI2C (Address, n, DataByte, DataByte, ...)

Description Write n bytes to the I2C at Address

1.167 XBufToBin

Allow to use with :

Tone system	User function	System function
Yes	No	No

Syntax XBufToBin (ctl.b)

Description Convert current X dig to bin

1.168 XorB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax XorB (Address, DataByte)

Description XOR DataByte with the contents of memory location referenced by the Address.

Example:

```
XorB(UserBuf_V, $01)          ; XOR buffer V with $01
```

1.169 XorTmpB

Allow to use with :

Tone system	User function	System function
Yes	Yes	Yes

Syntax XorTmpB (DataByte)

Description XOR current temporary variable with DataByte.

Example:

```
XorTmpB($01)        ; XOR the current Temporary buffer with $01
```

1.170 XorVarB

Allow to use with :

Tone system	User function	System function
No	Yes	No

Syntax XorVarB (DataByte)

Description XOR current var with DataByte.

Example:

```
XorVarB($01)          ; XOR the current var with $01
```

2 Appendix A Display commands

The display commands are sub commands and used as parameter in FuncL and Display command.

The parameter DisplayString used in these commands: WrT, ClrWrT eg. is defined as:

- A string: ‘ABC’, ‘123’, ‘#%!12aAZX’, ‘This is a text’.
- An icon: {“house”}, {“car”}.
- Direct graphic: {1,3,7,F,1F,3F,7F}.
- Standard icon: {@0}, {@2}.
- Combined of the above types:
  ‘This is a text’ + {“house”} + {1,3,7,F,1F,3F,7F} + {@1}.

The display commands is describes below.

2.1 Arr

Syntax Arr (ArrowBitmask)

Description Write these arrow if its bit mask is set.

Bit 0 = Arrow A; Bit 1 = Arrow B; Bit 2 = Arrow C; Bit 3 = Arrow D

Example:

```
FuncL(Arr($01))        ; Display arrow A

FuncL(Arr($05))        ; Display arrow A and C

FuncL(Arr($0F))        ; Display arrow A, B, C and D
```

2.2 BClear

Syntax BClear

Description Clear bottom line.

Example:
FuncL(BClear)

2.3 BufB

Syntax BufB

Description Write current buffer to bottom line

Example:
FuncL (BufB)

2.4 BufT

Syntax BufT

Description Write current buffer to top line.

Example:
FuncL(BufT)

2.5 BufVarT

Syntax BufVarT (Address)

Description Write specified buffer to top line.

Example: Write the contents of the Temporay buffer to top of line.
FuncL (BufVarT (UserBuf_T))

2.6 ChName

Syntax ChName (ChannelType, PosType/DotPos)

Description Write channel name of ChannelType at position PosType/DotPos.

The ChannelType is describes in the table below.

ChannelType	Description
Cur	Current channel
Sel	Current selected channel
Spc	Current selected special channel
Tmp	Temporary buffer channel
Call	Current call channel number
CallG	Current call group channel number
CallGR	Current call group channel number or relay

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

Example:

```
FuncL(ChName(Cur, Ch5))      ; Display current channel name at position 5

FuncL(ChName(Sel, 10))       ; Display current selected ch. name at dot pos. 10
```

2.7 ChNo

Syntax ChNo(ChannelType, PosType/DotPos)

Description Write channel number of ChannelType at position PosType/DotPos.

The ChannelType is describes in the table below.

ChannelType	Description
Cur	Current channel
Sel	Current selected channel
Spc	Current selected special channel
Tmp	Temporary buffer channel
Call	Current call channel number
CallG	Current call group channel number
CallGR	Current call group channel number or relay

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

Example:

```
FuncL(ChNo(Cur, Ch5))     ; Display current channel number at position 5
FuncL(ChNo(Sel, 10))      ; Display current selected channel num at dot pos. 10
```

2.8 Clear

Syntax Clear

Description Clear top and bottom line.

Example:
FuncL(Clear)

2.9 ClrWrB

Syntax ClrWrB(DisplayString)

Description Clear and write to bottom line.

Example:

```
FuncL(ClrWrB('This is a text'))          ; Clear & write simple text to bottom line

FuncL(ClrWrB({"house"}))                 ; Clear & write house icon to bottom line

FuncL(ClrWrB({1,3,7,F,1F,3F,7F}))  ; Clear & write direct graphic to bottom line

FuncL(ClrWrB({@1}))       ; Clear and write standard icon 1 to bottom line

; Clear and write all to bottom line
FuncL(ClrWrB('This is a text' + {"house"} + {1,3,7,F,1F,3F,7F} + {@1}))
```

2.10 ClrWrT

Syntax ClrWrT(DisplayString)

Description Clear and write to top line.

Example:

```
FuncL(ClrWrT('This is a text'))          ; Clear and write simple text to top line

FuncL(ClrWrT({"house"}))                 ; Clear and write house icon to top line

FuncL(ClrWrT({1,3,7,F,1F,3F,7F}))        ; Clear and write direct graphic to top line

; Clear and write all to top line
FuncL(ClrWrT('This is a text' + {"house"} + {1,3,7,F,1F,3F,7F}))
```

2.11 ErrTimer

Syntax ErrTimer(TimeLength)

Description Preset error message timer to TimeLength (millisecond).

Example:
FuncL(ErrTimer(3000)) ; Preset error message timer to 3 seconds.

2.12 MsgTimer

Syntax MsgTimer(TimeLength)

Description Preset message timer to TimeLength (millisecond).

Example:

```
FuncL(MsgTimer(3000))        ; Preset message timer to 3 seconds.
```

2.13 PtrStr

Syntax PtrStr(ChPos/DotPos, DispFormatCtrl, Address, Off)

Description Write string from Address

DispFormatCtrl : See Appendix E Display Format Control on page 215

Example:

2.14 PtrVar

Syntax PtrVar(ChPos/DotPos, BufFormatCtrl, Address, Off)

Description Write variable from address.

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

BufFormatCtrl : See Appendix F Buffer Format Controlon page 216

Example:
FuncL(PtrVar(Ch0,0,UserBuf_V,0)) ; Write Buffer V at position 0

2.15 SpcVar

Syntax SpcVar(ChPos/DotPos, BufFormatCtrl, Address)

Description Write variable to display.

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

BufFormatCtrl : See Appendix F Buffer Format Control on page 216

Example:
FuncL(SpcVar(Ch0,0,UserBuf_V)) ; Write Buffer V at position 0

2.16 SpcVarSet

Syntax SpcVarSet(ChPos/DotPos, BufFormatCtrl, Address)

Description Write variable and set current var info

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

BufFormatCtrl : See Appendix F Buffer Format Control on page 216

Example:
FuncL(SpcVarSet(Ch0,0,UserBuf_V)) ; Write Buffer V at position 0

2.17 StdStrB

Syntax StdStrB(StringNo)

Description Write standard system string with StringNo to bottom line.

Example:

```
FuncL(StdStrB(3))       ; Write standard system string number 3 to bottom line
```

2.18 StdStrPos

Syntax StdStrPos(ChPos/DotPos, StringNo)

Description Write standard string to position ChPos/DotPos.

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

Example:

2.19 StdStrT

Syntax StdStrT(StringNo)

Description Write standard system string with StringNo to top line.

Example:

```
FuncL(StdStrT(3))        ; Write standard system string number 3 to top line
```

2.20 StdVar

Syntax StdVar(ChPos/DotPos, BufFormatCtrl, BufName, Off)

Description Write variable reference by BufName to display

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

BufFormatCtrl : See Appendix F Buffer Format Control on page 216

The BufName describes in the table below. The buffer is 4 bytes long (8 digits).

Symbolic name	Description
V	Standard var buffer
W	Alternative var buffer
I	Primary ID var buffer
S	System digit var buffer
X	Tone system X buffer
J	Secondary ID var buffer
K	Alternative ID var buffer
L	Alternative ID var buffer
M	Alternative ID var buffer
T	Temporary buffer
Q	User temporary buffer
Ch	Current selected channel number
SCh	Current selected special channel number
ChC	Current channel tone buffer

Example:
FuncL(StdVar(Ch0, 0, V, 0) ; Write buffer V at position 0

2.21 StdVarSet

Syntax StdVarSet(ChPos/DotPos, BufFormatCtrl, BufName, Off)

Description Write and set standard variable

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

BufFormatCtrl : See Appendix F Buffer Format Control on page 216

The BufName describes in the table below. The buffer is 4 bytes long (8 digits).

Symbolic name	Description
V	Standard var buffer
W	Alternative var buffer
I	Primary ID var buffer
S	System digit var buffer
X	Tone system X buffer
J	Secondary ID var buffer
K	Alternative ID var buffer
L	Alternative ID var buffer
M	Alternative ID var buffer
T	Temporary buffer
Q	User temporary buffer
Ch	Current selected channel number
SCh	Current selected special channel number
ChC	Current channel tone buffer

Example:
FuncL(StdVarSet(Ch6, 3, I, 0)) ; Write 3 digits of buffer I starting at character position 6

2.22 TClear

Syntax Tclear

Description Clear top line.

Example:
FuncL(TClear);

2.23 UserText

Syntax UserText(ControlType/Num)

Description Display user text.

ControlType is describes in the table below.

ControlType	Description
0-FFF	Display text number xxx
8000	Current user text with u/d arrow
8001	Current user text to top line
8002	Current user text to bottom line
8003	Current user text to top/bottom line
8011	CurXBin to top line
8012	CurXBin to bottom line
8013	CurXBin to top/bottom line
8021	TStack XBin to top line
8022	TStack XBin to bottom line
8023	TStack XBin to top/bottom line

Example:
FuncL(UserText(8001)) ; Display current user text to top line

2.24 WrB

Syntax WrB(DisplayString)

Description Write to bottom line without clear.

Example:

```
FuncL(WrB('This is a text'))          ; Write simple text to bottom line

FuncL(WrB({"house"}))                 ; Write house icon to bottom line

FuncL(WrB({1,3,7,F,1F,3F,7F}))        ; Write direct graphic to bottom line

; Write all to bottom line
FuncL(WrB('This is a text' + {"house"} + {1,3,7,F,1F,3F,7F}))
```

2.25 WrForm

Syntax WrForm(ChPos/DotPos, DispFormatCtrl, DisplayString)

Description Write formatted string to display.

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

DispFormatCtrl : See Appendix E Display Format Control on page 215

Example:
; Write simple text at dot position 5 and used default setting
FuncL(WrForm(5,0,'This is a text'))

; Write simple text at haracter position 5 and with character pitch 8
FuncL(WrForm(Ch2,$0800,'This is a text'))

2.26 WrFormP

Syntax	WrFormP(ChPos/DotPos, DispFormatCtrl, StringPnt)
Description	This command is the same as WrForm except it uses a string pointer instead of the DisplayString parameter.
See also	See also WrForm command on page 207.

ChPos is Ch0..Ch27 indicates the characters position. DotPos is a number indicates the dots position.

DispFormatCtrl : See Appendix E Display Format Control on page 215

Example:

; Write simple text at dot position 5 and used default setting
FuncL(WrFormP(5,0,))

2.27 WrT

Syntax WrT(DisplayString)

Description Write to top line without clear.

Example:

```
FuncL(WrT('This is a text'))          ; Write simple text to top line

FuncL(WrT({"house"}))                 ; Write house icon to top line

FuncL(WrT({1,3,7,F,1F,3F,7F}))        ; Write direct graphic to top line

; Write all to top line
FuncL(WrT('This is a text' + {"house"} + {1,3,7,F,1F,3F,7F}))
```

3 Appendix B List of Function name

These functions describes in the table below is used as a parameter (FunctionName) in these command JumpFunc, SetFunc, StdFunc or TstdFunc.

Name	Description
Alarm	Activate "Quick/Alm" if long/dual press within X time (Alarm)
Alarm_1	Transmit Tx tone code 1 if long/dual press within 1 sec
Alarm_2	Transmit Tx tone code 2 if long/dual press within 2 sec
Alarm_3	Transmit Tx tone code 3 if long/dual press within 3 sec
Battery	Battery level display
Call_0	Transmit Tx tone code 0
Call_1	Transmit Tx tone code 1
Call_2	Transmit Tx tone code 2
Call_3	Transmit Tx tone code 3
Call_4	Transmit Tx tone code 4
Call_5	Transmit Tx tone code 5
Call_6	Transmit Tx tone code 6
Call_7	Transmit Tx tone code 7
Call_X	Transmit current channel call or current quick call sekv
CallStc	Callstack display, delete and transmit function
Ch_Scan	Channel select with scan
Ch_Sel	Channel select
ChStep	Channel step up
ChStepDn	Channel step down
Del_Off	Turn off with 2 seconds delay
Dial	“Dial” current display variable
DisCon	Disconnection function. Transmit call code 8 at Key (D)
DisStand	Set function standby, and clear display
Dtmf	Standard DTMF dial function (0-9, *, #)
DtmfDir	Direct DTMF transmit with occupied channel check and auto ls open
DtmfDis	Standard DTMF dial function (0-9,*,#) with call code 9 on exit
DtmfDisX	Extended DTMF dial function (0-9,*,#) with call code 9 on exit
DtmfX	Standard DTMF dial function (0-9, A, B, C, D, *, #)
EAl_Tgl	External alarm On/Off toggle
Ext	Internal mic,ls, arial
I/E_Sel	Internal/External mic,ls, arial select
I/E_Tgl	Toggle Internal/External mic,ls, arial
Int	Internal mic,ls, arial
KeyLock	Keyboard lock function
Long_Off	Long keypress (1 sec.) turn off function
Ls_Off	LS Off
Ls_On	LS On

Ls_Tgl	L.S. On/Off toggle
M_Light	Keyboard/display light on when key is pressed
MENU	Standby menu function. (Actual function defined in STANDBY/MENU)
MENU_0	USER MENUFUNCTION 0. (Actual function defined in "Special menu")
MENU_1	USER MENUFUNCTION 1. (Actual function defined in "Special menu")
MENU_2	USER MENUFUNCTION 2. (Actual function defined in "Special
MENU_3	USER MENUFUNCTION 3. (Actual function defined in "Special
MENU_4	USER MENUFUNCTION 4. (Actual function defined in "Special
MENU_5	USER MENUFUNCTION 5. (Actual function defined in "Special
MENU_6	USER MENUFUNCTION 6. (Actual function defined in "Special menu")
MENU_7	USER MENUFUNCTION 7. (Actual function defined in "Special menu")
No_Func	No function
Off	Turn off
PA_HL	PA power H/L toggle
PA_HML	PA power H/M/L toggle
PA_Sel	PA power SELECT
PagerT	Pager mode togglegl
Pilot	Transmit tonesekvens 1 or/and 2 when key is pressed (pilot tone)
PinCode	Enter PIN code to continue or turn off (uses 4 ms “M” dig as PIN code)
Quick100	Direct Quick call 100 select, with dial if not complete
Quick101	Direct Quick call 101 select, with dial if not complete
Quick102	Direct Quick call 102 select, with dial if not complete
Quick103	Direct Quick call 103 select, with dial if not complete
Quick104	Direct Quick call 104 select, with dial if not complete
Quick105	Direct Quick call 105 select, with dial if not complete
Quick106	Direct Quick call 106 select, with dial if not complete
Quick107	Direct Quick call 107 select, with dial if not complete
Quick108	Direct Quick call 108 select, with dial if not complete
Quick109	Direct Quick call 109 select, with dial if not complete
Quick110	Direct Quick call 110 select, with dial if not complete
QuickNr	Select special Quick "Nr". Dial and transmit
QuickR	Quick redial
QuickSel	Quick call select, with dial and redial
Rev_Off	Channel reserve Off
Rev_On	Channel reserve On
Rev_Tgl	Channel reserve toggle
Rf_Meter	RF (RSSI) signal display
Scan_Off	Scan Off
Scan_On	Scan On
Scan_Tgl	Scan On/Off toggle
SetupDef	Read default setup
SetupIni	Read Init setup
SetupPUR	Read PUR setup

SetupSel	Select user setup. For key 0-9 : Read setup N
SetupStb	Read Standby setup (setup 0)
SpcChSel	Select special channel
SpcChStp	Step special channel
SPEC_0	SPECIAL FUNCTION 0. (Actual function is application specific)
SPEC_1	SPECIAL FUNCTION 1. (Actual function is application specific)
SPEC_2	SPECIAL FUNCTION 2. (Actual function is application specific)
SPEC_3	SPECIAL FUNCTION 3. (Actual function is application specific)
SPEC_4	SPECIAL FUNCTION 4. (Actual function is application specific)
SPEC_5	SPECIAL FUNCTION 5. (Actual function is application specific)
SPEC_6	SPECIAL FUNCTION 6. (Actual function is application specific)
SPEC_7	SPECIAL FUNCTION 7. (Actual function is application specific)
Sq_Off	Squelch Off
Sq_On	Squelch On
Sq_Tgl	Squelch On/Off toggle
Standby	Standby mode
Status	Status select function
StepSetup	Step and read setup 0-9 (Key B = reverse step)
StoreSet	Store current data to usersetup
T_Light	Keyboard/display light on/off with auto timeout
Text	Display current "TEXT"
TextSel	Select “TEXT” number and display
TimFunc	Timer function. Start timer and activate "User Sound 7" on timeout
ToneText	Display current "tone/FFSK" text
Tx_Auto	PTT with carrier check and auto L.S. open
Tx_Key	Unconditional PTT
Tx_Ls	PTT with L.S. open and occupied channel check
TxCarrLs	PTT with auto ls on, but only if no carrier
U_On	USER ON FUNCTION
U_Stb	USER STANDBY FUNCTION
USER_0	Undefined function
USER_1	Undefined function
USER_2	Undefined function
USER_3	Undefined function
USER_4	Undefined function
USER_5	Undefined function
USER_6	Undefined function
USER_7	Undefined function
Vol_-	Volume down
Vol_+	Volume up
Volume	Volume control

4 Appendix C List of Key

The symbolic name and the bit mask of the keys is describes in the table below.

Key			Extended Key		
SymName	Description	Bit mask	SymName	Description	Bit mask
0	Key 0	0	M	Key M	0
1	Key 1	1	T2	Key T2	1
2	Key 2	2	S	Key S	2
3	Key 3	3	T1	Key T1	3
4	Key 4	4	Al	Key Al	4
5	Key 5	5	P	Key P	5
6	Key 6	6	On	Key On	6
7	Key 7	7	X	Key X	7
8	Key 8	8	Sw	Key Sw	8
9	Key 9	9	Pu	Key Pu	9
A	Key A	10	Pd	Key Pd	10
B	Key B	11	Et	Key Et	11
C	Key C	12	Ep	Key Ep	12
D	Key D	13	EAl	Key EAl	13
E	Key E	14	Pause	Key Pause	14
F	Key F	15	Sys	Key Sys	15

5 Appendix D System Address

The buffer address is describes in the table below.

BufAddressName	Description
UserBuf_V	Standard var buffer
UserBuf_W	Alternative var buffer
UserBuf_I	Primary ID var buffer
UserBuf_S	System digit var buffer
UserBuf_X	Tone system X buffer
UserBuf_J	Secondary ID var buffer
UserBuf_K	Alternative ID var buffer
UserBuf_L	Alternative ID var buffer
UserBuf_M	Alternative ID var buffer
UserBuf_T	Temporary buffer
Channel	Current selected channel number
SpcChannel	Current selected special channel number

6 Appendix E Display Format Control

The display format control (DispFormatCtrl) is used to control character pitch, wrap to next line, write overlap eg.

The DispFormatCtrl is 16 bits long and decribes below.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Function	ov	ns	wr	hl	char pitch					cp	ce	n				

Length: Write n character.
ce: If this bit is set then clear to end of line.
cp: Write to current position (the Pos parameter has no effect).
char pitch: Set character pitch (1-15).
hl: Stop writting when position = end of half line.
wr: Wrap to next line.
ns: Don’t clear character spacing.
ov: Write overlap.

Note: If DispFormatCtrl = 0 then the command used the default setting (6 character pitch, write to string terminated, clear character space ...).

7 Appendix F Buffer Format Control

The buffer format control (BufFormatCtrl) is 16 bits long and used to control how the digits in the buffer.

The BufFormatCtrl is 16 bits long and decribes below.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Function	VCnt			Le	Ra	Sd	Bf	Cs	Dt	Dm	Fm	Hm	Dig Cnt			

Dig Cnt: Digit count.
Hm: Display A – F as ‘F’ digit.
Fm: Mask F digit.
Dm: Display masked char as ‘_’.
Dt: Display E/F as # and *.
Cs: Clear digit spacing.
Bf: Byte format.
Sd: Single digit inc/dec.
Ra: Right align.
Le: Left entry mode.
VCnt: Use current variable count as digit count.

8 Appendix G List of System flag

Flag name	Description	Flag name	Description
AlEna	Alarm enable	User04	
AutoStb	Auto standby	User05	
ChRev		User06	
Crypt		User07	
CueEna	Cue enable	User10	
ExtAl	External alarm	User11	
KeyLock	Lock keyboard	User12	
LocTx	Lock Tx	User13	
Ls		User14	
LsA	A Sub Ls On	User15	
LsB	B Sub Ls On	User16	
LsC	C Sub Ls On	User17	
LsCarr	Carrier Ls On	User20	
OptTx	Opt. Tx request	User21	
PaH	Pa High	User22	
PaL	Pa Low	User23	
PaM	Pa Medium	User24	
PostAni		User25	
PreAni		User26	
Scan		User27	
Sq	Squelch	User30	
SysTx	System Tx request	User31	
TestTx		User32	
ToneTx		User33	
User00	User flag	User34	
User01		User35	
User02		User36	
User03		User37	

9 INDEX

G

I

J

K

L

M

N

O

P

R

S

T

U

V