

# SCP and MSA #defines for the SpeakJet



## ImportantNote:

**This file is currently under development and can change radically!**

**Maybe you want to wait some days until this note disappears to add your SJ-Definitions**

It can be used for your C-based MBHP\_IIC\_SpeakJet Project:

Feel free to edit and add defines!

```
/*
 * IIC_SpeakJetDefines.h
 * kII.2
 *
 * Created by Michael Markert, audiocommander.de on 20.05.06
 * Based on Speakjet control codes from July 27, 2004 version of Speakjet
Manual
 * and ASM-Version of Doug Elliott, VA3DAE
 *
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 */

#ifdef _IIC_SPEAKJETDEFINES_H
#define _IIC_SPEAKJETDEFINES_H

// ***** SPEAKJET SCP ***** //
// Serial Control Protocol
#ifdef _DEBUG_C
#pragma mark -
#pragma mark SCP
#endif

// escape character ('\') 0x5C to enter SCP Mode
#define SCP_ESCAPE          '\\\
#define SCP_SEL0           '0'
#define SCP_SEL1           '1'
#define SCP_SEL2           '2'
#define SCP_SEL3           '3'
#define SCP_SEL4           '4'
#define SCP_SEL5           '5'
#define SCP_SEL6           '6'
#define SCP_SEL7           '7'
#define SCP_EXIT           'X'
```

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#define SCP_READY          'V'
#define SCP_CLEAR_BUFFER  'R'
#define SCP_START         'T'
#define SCP_STOP          'S'

#define SCP_MEMTYPE       'H'
#define SCP_MEMADDR       'J'
#define SCP_MEMWRT        'N'

#define SCP_RESET         'W'

// ***** SPEAKJET SCP REGISTERS ***** //
// SCP Registers & MAX Values
#ifdef _DEBUG_C
    #pragma mark -
    #pragma mark SCP REGISTERS & MAX VALUES
#endif

// == SCP_MEMTYPE (H) ==
#define SCP_MEMTYPE_REGISTER '0'
#define SCP_MEMTYPE_EEPROM_H '3'
#define SCP_MEMTYPE_EEPROM_L '2'

// == SCP_MEMADDR (J) ==
// Envelope
#define SCP_ENV_FREQ          '0'
#define SCP_ENV_CTRL          '8'
/* Oscillator Frequency Register
#define SCP_OSC1_FREQ          '1'
#define SCP_OSC2_FREQ          '2'
#define SCP_OSC3_FREQ          '3'
#define SCP_OSC4_FREQ          '4'
#define SCP_OSC5_FREQ          '5' */
/* Oscillator Level Register
#define SCP_OSC1_LEVEL         11
#define SCP_OSC2_LEVEL         12
#define SCP_OSC3_LEVEL         13
#define SCP_OSC4_LEVEL         14
#define SCP_OSC5_LEVEL         15*/
// Distortion
#define SCP_DISTORTION         '6'
// Master
#define SCP_MASTER_VOLUME      '7'

// == SCP_MEMWRT (N) ==
// ENVType (send ENVType + ENVState!)
#define SCP_ENV_SAW            0x0
#define SCP_ENV_SINE           0x1
```

```
#define SCP_ENV_TRIANGLE      0x2
#define SCP_ENV_SQUARE       0x3
//   ENVState (send ENVType + ENVState!)
#define SCP_ENV_OSC123       0x40
#define SCP_ENV_OSC45       0x80
//   Default values
#define SCP_FREQ_DEFAULT     440
#define SCP_LEVEL_DEFAULT   20    // 63 MAX for Mixer 1: OSC 1, 2 & 3
//   Maximum accepted values
#define SCP_FREQ_MAX         3999
#define SCP_LEVEL_MAX       31
#define SCP_DISTORTION_MAX   255
#define SCP_MASTER_VOLUME_MAX 255

// ***** SPEAKJET MSA ***** //
// Mathematical Sound Architecture
#ifdef _DEBUG_C
    #pragma mark -
    #pragma mark MSA Control Codes
#endif

// 0 - 31 CONTROL CODES
#define MSA_PAUSE0          0
#define MSA_PAUSE1          1
#define MSA_PAUSE2          2
#define MSA_PAUSE3          3
#define MSA_PAUSE4          4
#define MSA_PAUSE5          5
#define MSA_PAUSE6          6

#define MSA_NEXTFAST        7
#define MSA_NEXTSLOW        8
#define MSA_NEXTHIGH       14
#define MSA_NEXTLOW        15

#define MSA_WAIT            16

#define MSA_VOLUME          20
#define MSA_SPEED           21
#define MSA_PITCH           22
#define MSA_BEND            23
```

```
#define MSA_PORTCTR          24
#define MSA_PORT            25

#define MSA_REPEAT          26

#define MSA_CALLPHRASE      28
#define MSA_GOTOPHRASE      29

#define MSA_DELAY           30
#define MSA_RESET           31

// 32 - 127 (Reserved)
#ifdef _DEBUG_C
    #pragma mark MSA (Reserved)
#endif

// 128 - 254 SOUND_CODES
#ifdef _DEBUG_C
    #pragma mark MSA Sound Codes
#endif

// MSA Sound Codes: Phonemes
#define MSAPH_IY            128
#define MSAPH_IH            129
#define MSAPH_EY            130
#define MSAPH_EH            131
#define MSAPH_AY            132
#define MSAPH_AX            133
#define MSAPH_UX            134
#define MSAPH_OH            135
#define MSAPH_AW            136
#define MSAPH_OW            137
#define MSAPH_UH            138
#define MSAPH_UW            139
#define MSAPH_MM            140
#define MSAPH_NE            141
#define MSAPH_NO            142
#define MSAPH_NGE           143
#define MSAPH_NGO           144
#define MSAPH_LE            145
#define MSAPH_LO            146
#define MSAPH_WW            147
#define MSAPH_RR            148
#define MSAPH_IYRR          149
#define MSAPH_EYRR          150
#define MSAPH_AXRR          151
#define MSAPH_AWRR          152
#define MSAPH_OWRR          153
#define MSAPH_EYIY          154
#define MSAPH_OHIY          155
```

```
#define MSAPH_OWIY          156
#define MSAPH_OHIH          157
#define MSAPH_IYEH          158
#define MSAPH_EHLL          159
#define MSAPH_IYUW          160
#define MSAPH_AXUW          161
#define MSAPH_IHWW          162
#define MSAPH_AYWW          163
#define MSAPH_OWWW          164
#define MSAPH_JH            165
#define MSAPH_VV            166
#define MSAPH_ZZ            167
#define MSAPH_ZH            168
#define MSAPH_DH            169
#define MSAPH_BE            170
#define MSAPH_BO            171
#define MSAPH_EB            172
#define MSAPH_OB            173
#define MSAPH_DE            174
#define MSAPH_DO            175
#define MSAPH_ED            176
#define MSAPH_OD            177
#define MSAPH_GE            178
#define MSAPH_GO            179
#define MSAPH_EG            180
#define MSAPH_OG            181
#define MSAPH_CH            182
#define MSAPH_HE            183
#define MSAPH_HO            184
#define MSAPH_WH            185
#define MSAPH_FF            186
#define MSAPH_SE            187
#define MSAPH_SO            188
#define MSAPH_SH            189
#define MSAPH_TH            190
#define MSAPH_TT            191
#define MSAPH_TU            192
#define MSAPH_TS            193
#define MSAPH_KE            194
#define MSAPH_KO            195
#define MSAPH_EK            196
#define MSAPH_OK            197
#define MSAPH_PE            198
#define MSAPH_PO            199

// MSA Sound Codes: Robot
#define MSAFX_ROBOT_0       200
#define MSAFX_ROBOT_1       201
#define MSAFX_ROBOT_2       202
#define MSAFX_ROBOT_3       203
#define MSAFX_ROBOT_4       204
```

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#define MSAFX_ROBOT_5      205
#define MSAFX_ROBOT_6      206
#define MSAFX_ROBOT_7      207
#define MSAFX_ROBOT_8      208
#define MSAFX_ROBOT_9      209

// MSA Sound Codes: Alarms
#define MSAFX_ALARM_0      210
#define MSAFX_ALARM_1      211
#define MSAFX_ALARM_2      212
#define MSAFX_ALARM_3      213
#define MSAFX_ALARM_4      214
#define MSAFX_ALARM_5      215
#define MSAFX_ALARM_6      216
#define MSAFX_ALARM_7      217
#define MSAFX_ALARM_8      218
#define MSAFX_ALARM_9      219

// MSA Sound Codes: Beeps
#define MSAFX_BEEP_0       220
#define MSAFX_BEEP_1       221
#define MSAFX_BEEP_2       222
#define MSAFX_BEEP_3       223
#define MSAFX_BEEP_4       224
#define MSAFX_BEEP_5       225
#define MSAFX_BEEP_6       226
#define MSAFX_BEEP_7       227
#define MSAFX_BEEP_8       228
#define MSAFX_BEEP_9       229

// MSA Sound Codes: Biological
#define MSAFX_BIO_0        230
#define MSAFX_BIO_1        231
#define MSAFX_BIO_2        232
#define MSAFX_BIO_3        233
#define MSAFX_BIO_4        234
#define MSAFX_BIO_5        235
#define MSAFX_BIO_6        236
#define MSAFX_BIO_7        237
#define MSAFX_BIO_8        238
#define MSAFX_BIO_9        239

// MSA Sound Codes: DTMF
#define MSAFX_DTMF_0       240
#define MSAFX_DTMF_1       241
#define MSAFX_DTMF_2       242
#define MSAFX_DTMF_3       243
#define MSAFX_DTMF_4       244
#define MSAFX_DTMF_5       245
#define MSAFX_DTMF_6       246
```

```
#define MSAFX_DTMF_7      247
#define MSAFX_DTMF_8      248
#define MSAFX_DTMF_9      249
#define MSAFX_DTMF_S      250
#define MSAFX_DTMF_R      251

// MSA Sound Codes: Misc
#define MSAFX_SONAR_PING  252
#define MSAFX_PISTOLSHOT  253
#define MSAFX_WOW         254

// 255: End of Phrase
#ifdef _DEBUG_C
    #pragma mark MSA EOP
#endif

#define MSA_EOP           255

#endif /* _IIC_SPEAKJETDEFINES_H */
```

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