

# SCP and MSA #defines for the SpeakJet

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/*
 * 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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 *
 */

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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'
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#define SCP_SEL3          '3'
#define SCP_SEL4          '4'
#define SCP_SEL5          '5'
#define SCP_SEL6          '6'
#define SCP_SEL7          '7'
#define SCP_EXIT          'X'

#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 (not used, calculated)
#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 (not used, calculated)
#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'
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// == SCP_MEMWRT (N) ==
//   ENVType (send ENVType + ENVState!)
#define SCP_ENV_SAW          '2'
#define SCP_ENV_SINE        '3'
#define SCP_ENV_TRIANGLE    '4'
#define SCP_ENV_SQUARE      '5'
//   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      // 0ms
#define MSA_PAUSE1          1      // 100ms
#define MSA_PAUSE2          2      // 200ms
#define MSA_PAUSE3          3      // 700ms
#define MSA_PAUSE4          4      // 30ms
#define MSA_PAUSE5          5      // 60ms
#define MSA_PAUSE6          6      // 90ms

#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 SOUNDCODES
#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
```

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

// <<--- Application related defines --->>

// SCP ControlTypes
// realtime announces single SCP messages like "Clear Buffer"
// register is used for 3-part-msgs: select register, select memtype and
// write value
#define SCP_CTRLTYPE_REALTIME    0x0
#define SCP_CTRLTYPE_REGISTER    0x1

// Articulation ControlTypes
#define ARTICULATION_JAW         0x1
#define ARTICULATION_TONGUE     0x2
#define ARTICULATION_GLOTTIS    0x3

// OSC Harmonic Waveshapes
#define OSCSYNTH_WAVE_TRIANGLE   0
#define OSCSYNTH_WAVE_SQUARE     1
#define OSCSYNTH_WAVE_SAW       2
```

```
#endif /* _IIC_SPEAKJETDEFINES_H */
```

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