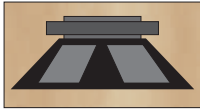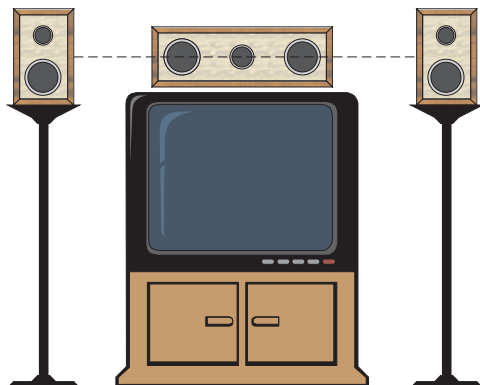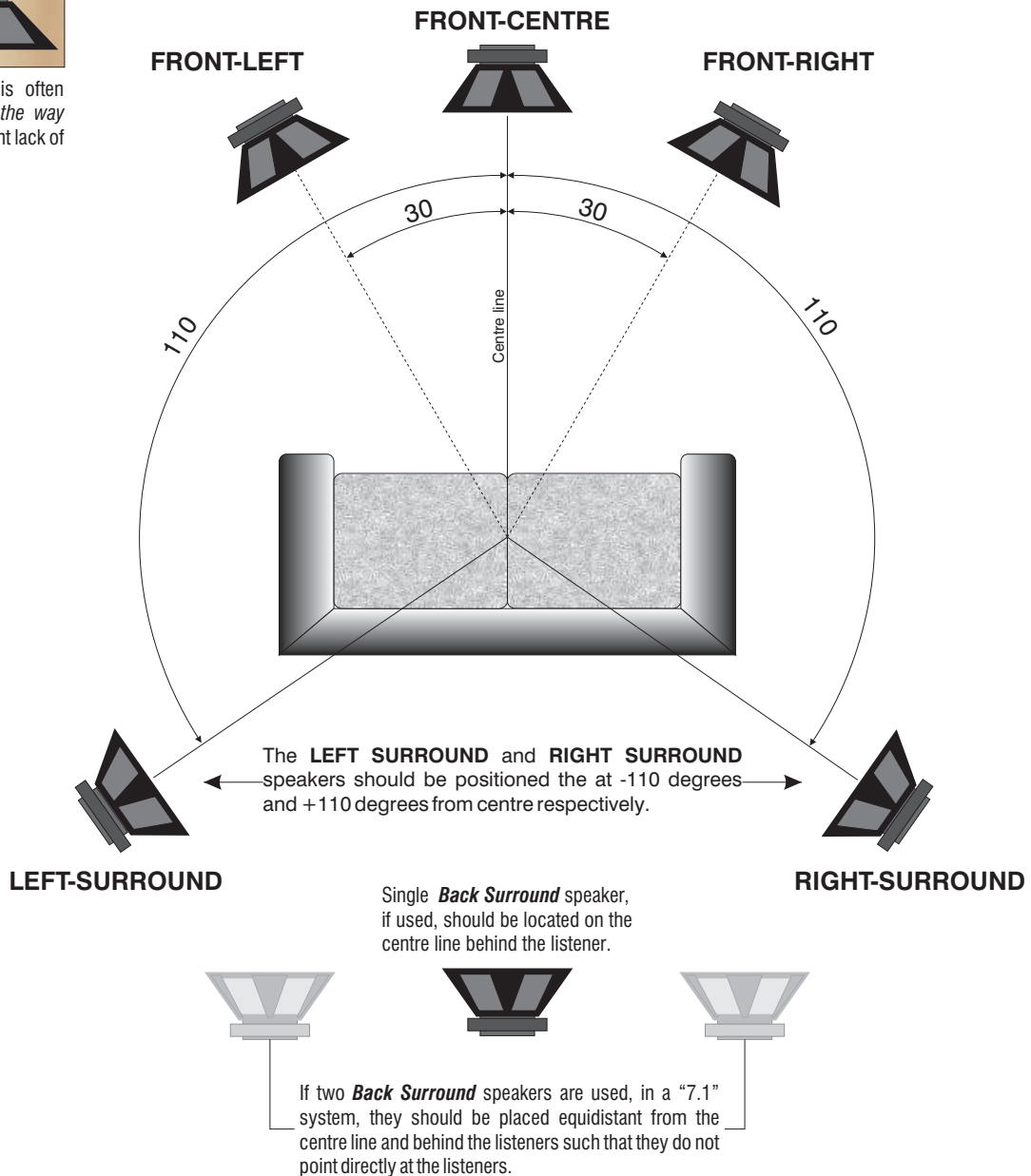# SUGGESTED SURROUND SOUND SPEAKER PLACEMENT

A **sub-woofer** is often located *out of the way* due to its inherent lack of directionality

FRONT-LEFT

FRONT-CENTRE

FRONT-RIGHT

30

30

Centre line

110

110

The **LEFT SURROUND** and **RIGHT SURROUND** speakers should be positioned the at -110 degrees and +110 degrees from centre respectively.

LEFT-SURROUND

RIGHT-SURROUND

Single *Back Surround* speaker, if used, should be located on the centre line behind the listener.

If two *Back Surround* speakers are used, in a "7.1" system, they should be placed equidistant from the centre line and behind the listeners such that they do not point directly at the listeners.

VERTICAL PLACEMENT OF SPEAKERS

The front speakers are normally placed at ear level, but where the front-centre speaker is placed on top of the television or video monitor the front-left and front-right speakers should be elevated to be in-line with the centre speaker

Surr-snd-spkr-placement-1.cdr

SP1.7 SOFTWARE VERSION 44A
2003 NOV 20
Author: Shane Parfitt

Digital Force

The SP1.7 has always automatically locked-on to the digital signal, and automatically implemented the correct decoding. When the digital bitstream is lost, the SP1.7 has always defaulted to the analog input. This is useful for source material that can have a mix of digital and analog outputs, such as digital cable boxes. We have discovered that there exists a few digital source components that will temporarily turn off their digital outputs under switching conditions. This is mainly a problem with certain satellite receivers while changing channels. This temporary break in the digital bitstream causes the SP1.7 to lose lock on the digital signal and default to the analog input. When the new channel kicks in the SP1.7 will automatically go back to the digital input and implement the correct decoding. The problem is that this operation of switching to analog and back to digital takes some time in the SP1.7 causing an interruption in the audio, and sometimes some transient noises.

The Digital Force feature is a way to stop the SP1.7 from defaulting to the analog input when the digital bitstream is interrupted. When the digital force feature is on, the SP1.7 will simply mute it's output when the bitstream is lost, and it will not default to the analog input. This results in a better response when changing channels on digital satellite receivers.

To enable or disable this feature, a 'hidden' IR code is used. The codes to turn this feature on and off are as follows:

Digital Force On: 061
Digital Force Off: 062

So, to enable this feature from the IR remote control, you would press CODE – MUTE – STEREO - THX. A message on the LCD display will appear to verify that the operation has been completed. Please see the SP1.7 user manual and our website for more information on hidden IR codes. www.bryston.ca

This feature is also 'Saved per Input' which means that you have to press the SAVE button on the IR remote control if you want this feature to be associated with the currently selected input. This operation must be repeated **for each input** that you want the feature to be enabled for.

Xtra Bass Level Control

The Xtra Bass mode can be activated when there is a 2-channel input signal and the Front Speakers are defined as Large. This causes a Low-Pass-Filtered, summed L+R signal to be sent the subwoofer output. The Xtra Bass Level control allows you to control the level of this signal, independently from the Subwoofer level control. This means that the Xtra Bass Level control takes over as the Subwoofer Level control, but only when the Xtra Bass mode is activated. This allows for much smoother Bass blending with full range speakers. The Xtra Bass Level Control is found as the 'XB' item in the 'Other Settings' Menu.

Dolby Digital EX

With previous versions of the SP1.7 software, the only way to get 6.1 or 7.1 operation with a Dolby Digital signal was to engage THX Surround EX. We have extended our license with Dolby to allow Dolby Digital EX, in the absence of any THX post processing. To engage this mode of operation, four conditions must be satisfied.

1. The Back Speakers must be enabled in the 'Speaker Config' Menu as 'ONE' or 'TWO'
2. The EX Control variable in the 'Other Settings' Menu must be set to 'AUTO' or 'ON'
3. The Surround listening mode must be engaged from the front panel or IR remote control.
4. A 5.1 channel Dolby Digital signal must be present at the input. If EX_Control=AUTO, the bitstream must contain the EX flag for Dolby Digital EX decoding to engage. If EX_Control=ON, the Dolby Digital EX decoding will be forced on for all 5.1 channel Dolby Digital signals.

DTS-ES operation is unaffected by these changes, and functions as before on DTS signals governed by the ES_Control variable in the 'Other Settings' Menu.

More 'Saved per Input' Variables

The following are settings that are stored "**WITH EACH INPUT"** when the SAVE button is pressed on the IR remote control instead of the current "GLOBAL" save.

New Saved Settings:

• Center Channel Level
• Back Channel Levels
• Crossover Frequency
• Bass Peak Level Manger (BPLM)
• Digital Force
• Xtra Bass Level

Current Saved Settings are Retained:

• Rear Channel Levels
• Subwoofer Level
• OSD Assignment (for SPV-1)
• OSD Enable (for SPV-1)
• Digital
• Listening Mode
• Surround Mode for THX listening mode
• Surround Mode for Surround listening mode
• EX Control
• ES Control
• PLII Panorama
• PLII Center Width
• PLII Dimension
• Bypass Mode
• Speaker Configuration
• Xtra Bass Enable

BRYSTON SP1.7 RS-232 PROTOCOL   (REV 5 – MARCH 2003)

For Version 43C Firmware and later.

Source Switching		**Autofeedback Returns**
SAT↵	switch to SAT input	"SAT"
DVD↵	switch to DVD input	"DVD"
CD↵	switch to CD input	"CD"
AUX↵	switch to AUX input	"AUX"
VCR↵	switch to VCR input	"VCR"
TP↵	switch to TAPE input	"TP"
DI↵	toggle DIGITAL on/off	"ON" or "OFF"
DIN↵	force DIGITAL on	"ON"
DIF↵	force DIGITAL off	"OFF"

Listening Modes

THX↵	THX Surround listening mode	"THX"
SUR↵	Surround listening mode	"SUR"
ST↵	Stereo listening mode	"ST"
MN↵	Mono listening mode	"MN"
SV↵	Save mode settings for current input	

Bypass Modes

BP↵	cycle Bypass Modes 2ch/5.1ch/off	"BP2","BP6" or Listening Mode
BP2↵	force Bypass Mode Stereo	"BP2"
BP6↵	force Bypass Mode 5.1 channel	"BP6"
BPF↵	force Bypass Mode off	Listening Mode

Surround Modes (submodes of THX and Surround listening modes for 2ch input)

SM↵	cycle through Surround Modes	"EF00" to "EF13"
EF00↵	No Effect	"EF00"
EF01↵	Pro Logic	"EF01"
EF02↵	PLII Music	"EF02"
EF03↵	PLII Movie	"EF03"
EF04↵	Neo:6 Music	"EF04"
EF05↵	Neo:6 Movie	"EF05"
EF06↵	Stereo5	"EF06"
EF07↵	Party	"EF07"
EF08↵	Hall	"EF08"
EF09↵	Church	"EF09"
EF10↵	Stadium	"EF10"
EF11↵	Club	"EF11"
EF12↵	Theatre	"EF12"
EF13↵	Natural	"EF13"

Extended Surround Options

```
EXN↵        THX Surround EX 'On'
EXF↵        THX Surround EX 'Off'
EXA↵        THX Surround EX 'Auto'
ESN↵        DTS-ES 'On'
ESF↵        DTS-ES 'Off'
ESA↵        DTS-ES 'Auto'
```

Volume Commands

```
GVxx↵ where xx is -(desired_volume)+12    range: 0 (highest) to 80 (mute)
                                          Note: accurate within 3dB
VU↵    volume up                          "XXX.X" from -80.0 to 11.5
VD↵    volume down                        "XXX.X" from -80.0 to 11.5
MT↵    mute Toggle                        "MUTE" or "UNMUTE"
MTN↵   mute ON                            "MUTE"
MTF↵   mute OFF                           "UNMUTE"
```

Preset Speaker Configurations

```
SC1↵  S/S/S/Y
SC2↵  L/S/S/N
SC3↵  L/L/L/N
SC4↵  L/N/N/N
```

Status Query

```
SS1↵  returns listening mode         "THX","SUR","ST","MN","BP2","BP6"
SS2↵  returns input signal type      see below
SS3↵  returns source                 "SAT","DVD","CD","AUX","VCR","TP"
SS4↵  returns Digital                    "ON" or "OFF"
SS5↵  returns Effect/Surround mode       "EF00" to "EF12"
SS6↵  returns LCD decoding mode strings  see SP1.7 Manual Appendix A
SS7↵  returns Master Volume              "-35.5"
QSN↵  returns serial number
```

Power

```
PU↵    Power Up                      "SP1 OS v43C" and initial volume
PD↵    Power Down
```

Automatic Feedback

```
AFY↵  enables automatic feedback
AFN↵  disables automatic feedback
```

Whenever any change is made from the Front Panel, IR, or RS232, the change
will be reported through the RS232 port if the Automatic Feedback mode is
engaged.

Communication

For SP1.7 with S/N lower than 000398
    Pin 2 Receive Data (Rx)
    Pin 3 Transmit Data (Tx)
    Pin 5 Ground
    *requires a NULL MODEM DB9 Cable for most applications

For SP1.7 with S/N greater than (or equal) to 000398
    Pin 2 Transmit Data (Tx)
    Pin 3 Receive Data (Rx)
    Pin 5 Ground

Communication: 9600, 8, N, 1

Software Flow Control:
    After the SP1.7 receives a command, interrupts must be disabled while
    the main microcontroller communicates with the DSP module. In this
    state, the SP1.7 is not ready to receive the next command. When the
    current command is completed, the SP1.7 will return a '>' character
    feedback. This indicates that the SP1.7 is ready to receive the next
    command. The host system should wait for this character before sending
    the next command. Also, when an illegal/unknown command is received at
    the RS232 port, the SP1.7 will return a '!' character.

Input Signal Strings

"UNKNOWN"
"PCM"
"Analog"
"DL D x/x.x"   eg. "DL D 3/2.1" (front/rear/sub)
"DTS x/x.x"

APPENDIX C - SP1.7 IR-CODES

Function	Code	Function	Code	Function	Code	Function	Code
Power Off	000	Mode None	064		128		192
TV/SAT	001	Pro-Logic	065		129		193
DVD	002	PLII Music	066		130		194
CD	003	PLII Movie	067		131		195
AUX	004	Neo-6 Music	068		132		196
VCR	005	Neo-6 Movie	069		133		197
TAPE	006	Stereo 5	070		134		198
Volume Up	007	Party	071		135		199
Volume Down	008	Hall	072		136		200
Mute	009	Church	073		137		201
Test	010	Stadium	074		138		202
Digital	011	Club	075		139		203
Dolby	012	Theatre	076		140		204
Stereo	013	Natural	077		141		205
THX	014		078		142		206
Power On/Off	015		079		143		207
DTS	016		080		144		208
Surround	017		081		145		209
Mode	018		082		146		210
Menu Up	019		083		147		211
Menu Down	020		084		148		212
Select	021		085		149		213
Centre	022		086		150		214
Rear	023		087		151		215
Back	024		088		152		216
Subwoofer	025		089		153		217
Save	026		090		154		218
2-Ch Bypass On/Off	027		091		155		219
6-Ch Bypass On/Off	028		092		156		220
Power On	029		093		157		221
SPV-1 Reserved	030		094		158		222
SPV-1 Reserved	031		095		159		223
SPV-1 Reserved	032		096		160		224
SPV-1 Reserved	033		097		161		225
SPV-1 Reserved	034		098		162		226
SPV-1 Reserved	035		099		163		227
SPV-1 Reserved	036		100		164		228
SPV-1 Reserved	037		101		165		229
SPV-1 Reserved	038		102		166		230
SPV-1 Reserved	039		103		167		231
SPV-1 Reserved	040		104		168		232
SPV-1 Reserved	041		105		169		233
SPV-1 Reserved	042		106		170		234
SPV-1 Reserved	043		107		171		235
SPV-1 Reserved	044		108		172		236
SPV-1 Reserved	045		109		173		237
SPV-1 Reserved	046		110		174		238
SPV-1 Reserved	047		111		175		239
SPV-1 Reserved	048		112		176		240
OSD On/Off	049		113		177		241
OSD Off	050		114		178		242
OSD On	051		115		179		243
Mono	052		116		180		244
2-Ch Bypass On	053		117		181		245
6-Ch Bypass On	054		118		182		246
Bypass Off	055		119		183		247
Digital On	056		120		184		248
Digital Off	057		121		185		249
Mute On	058		122		186	Auto Save On/Off	250
Mute Off	059		123		187	X-Over On/Off	251
Bypass Sub On/Off	060		124		188		252
	061		125		189		253
	062		126		190		254
	063		127		191		255