

# ATARI 2600 HARDWARE REFERENCE GUIDE

## Colour Palette Quick Reference

### NTSC

128 Unique Colours

		COLOUR (HUE) (High Nybble)																
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
LUMINANCE (LUM) (Low Nybble)	0-1	#000000	#444400	#702800	#841800	#880000	#78005C	#480078	#140084	#000088	#00187C	#002C5C	#003C2C	#003C00	#143800	#2C3000	#442800	0-1
	2-3	#404040	#646410	#844414	#983418	#9C2020	#8C2074	#602090	#302098	#1C209C	#1C3890	#1C4C78	#1C5C48	#205C20	#345C1C	#4C501C	#644818	2-3
	4-5	#6C6C6C	#848424	#985C28	#AC5030	#B03C3C	#A03C88	#783CA4	#4C3CAC	#3840B0	#3854A8	#386890	#387C64	#407C40	#507C38	#687034	#846830	4-5
	6-7	#909090	#A0A034	#AC783C	#C06848	#C05858	#B0589C	#8C58B8	#6858C0	#505CC0	#5070BC	#5084AC	#509C80	#5C9C5C	#6C9850	#848C4C	#A08444	6-7
	8-9	#B0B0B0	#B8B840	#BC8C4C	#D0805C	#D07070	#C070B0	#A070CC	#7C70D0	#6874D0	#6888CC	#689CC0	#68B494	#74B474	#84B468	#9CA864	#B89C58	8-9
	A-B	#C8C8C8	#D0D050	#CCA05C	#E09470	#E08888	#D084C0	#B484DC	#9488E0	#7C8CE0	#7C9CDC	#7CB4D4	#7CD0AC	#8CD08C	#9CCC7C	#B4C078	#D0B46C	A-B
	C-D	#DCDCDC	#E8E85C	#DCB468	#ECA880	#ECA0A0	#DC9CD0	#C49CEC	#A8A0EC	#90A4EC	#90B4EC	#90CCE8	#90E4C0	#A4E4A4	#B4E490	#CCD488	#E8CC7C	C-D
	E-F	#ECECEC	#FCFC68	#ECC878	#FCB8C4	#FCB4B4	#ECB0E0	#D4B0FC	#BCB4FC	#A4B8FC	#A4C8FC	#A4E0FC	#A4FCD4	#B8F8CB	#C8FCA4	#E0EC9C	#FCE08C	E-F

### PAL

104 Unique Colours

		COLOUR (HUE) (High Nybble)																
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
LUMINANCE (LUM) (Low Nybble)	0-1	#000000	#000000	#805800	#445C00	#703400	#006414	#700014	#005C5C	#70005C	#003C70	#580070	#002070	#3C0080	#000088	#000000	#000000	0-1
	2-3	#282828	#282828	#947020	#5C7820	#885020	#208034	#882034	#207474	#842074	#1C5888	#6C2088	#1C3C88	#542094	#20209C	#282828	#282828	2-3
	4-5	#505050	#505050	#A8843C	#74903C	#A0683C	#3C9850	#A03C50	#3C8C8C	#943C88	#3874A0	#803CA0	#3858A0	#6C3CA8	#3C3CB0	#505050	#505050	4-5
	6-7	#747474	#747474	#BC9C58	#8CAC58	#B48458	#58B06C	#B4586C	#58A4A4	#A8589C	#508CB4	#9458B4	#5074B4	#8058BC	#5858C0	#747474	#747474	6-7
	8-9	#949494	#949494	#CCAC70	#A0C070	#C89870	#70C484	#C87084	#70B8B8	#B470B0	#68A4C8	#A470C8	#6888C8	#9470CC	#7070D0	#949494	#949494	8-9
	A-B	#B4B4B4	#B4B4B4	#DCC084	#B0D484	#DCAC84	#84D89C	#DC849C	#84C8C8	#C484C0	#7CB8DC	#B484DC	#7CA0DC	#A884DC	#8484E0	#B4B4B4	#B4B4B4	A-B
	C-D	#D0D0D0	#D0D0D0	#ECD09C	#C4E89C	#ECC09C	#9CE8B4	#EC9CB4	#9CDDCC	#D09CD0	#90CCEC	#C49CEC	#90B4EC	#B89CEC	#9C9CEC	#D0D0D0	#D0D0D0	C-D
	E-F	#ECECEC	#ECECEC	#FCE0B0	#D4FCB0	#FCD4B0	#B0FC8C	#FCB0C8	#B0ECEC	#E0B0E0	#A4E0FC	#D4B0FC	#A4C8FC	#C8B0FC	#B0B0FC	#ECECEC	#ECECEC	E-F

### SECAM

8 Unique Colours

		COLOUR (HUE) (High Nybble)																
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
LUMINANCE (LUM) (Low Nybble)	0-1	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	#000000	0-1
	2-3	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	#2121FF	2-3
	4-5	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	#F03C79	4-5
	6-7	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	#FF50FF	6-7
	8-9	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	#7FFF00	8-9
	A-B	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	#7FFFFFFF	A-B
	C-D	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	#FFFFFF3F	C-D
	E-F	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	#FFFFFF	E-F

## COMMON PALETTES

SECAM->NTSC and PAL (S->N+P)

MACRO CONSTANT	COLOUR	NAME	NTSC	PAL	SECAM
COL_BLACK	\$00	Black	#000000	#000000	#000000
COL_BLUE	\$92	Blue	#1C3890	#1C5888	#2121FF
COL_RED	\$44	Red	#B03C3C	#A0683C	#F03C79
COL_MAGENTA	\$66	Magenta	#8C58B8	#B4586C	#FF50FF
COL_GREEN	\$78	Green	#7C70D0	#70B8B8	#7FFF00
COL_CYAN	\$9A	Cyan	#7C9CDC	#7CB8DC	#7FFFFFFF
COL_YELLOW	\$2C	Yellow	#DCB468	#ECD09C	#FFFF3F
COL_WHITE	\$0E	White	#ECECEC	#ECECEC	#FFFFFF

Best all round portable approximations of SECAM colours for NTSC and PAL.  
Brightness is aligned for all 3 TV standards and increases from dark to light when in B&W mode.

SECAM->NTSC,PAL (S->N,P)

COLOUR	NTSC	PAL	SECAM
\$00-\$01	#000000	#000000	#000000
\$92-\$93	#1C3890	#1C5888	#2121FF
\$44-\$45	#B03C3C	#A0683C	#F03C79
\$66-\$67	#8C58B8	#B4586C	#FF50FF
\$D8-\$D9	#84B468	#7070D0	#7FFF00
\$AA-\$AB	#7CB4D4	#B484DC	#7FFFFFFF
\$1C-\$1D	#E8E85C	#D0D0D0	#FFFF3F
\$0E-\$0F	#ECECEC	#ECECEC	#FFFFFF

SECAM mapped to NTSC (preferred) and then PAL.  
Brightness is aligned for B&W mode.

SECAM->PAL,NTSC (S->P,N)

COLOUR	NTSC	PAL	SECAM
\$00-\$01	#000000	#000000	#000000
\$92-\$93	#1C3890	#1C5888	#2121FF
\$64-\$65	#783CA4	#A03C50	#F03C79
\$A6-\$A7	#5084AC	#9458B4	#FF50FF
\$58-\$59	#C070B0	#70C484	#7FFF00
\$9A-\$9B	#7C9CDC	#7CB8DC	#7FFFFFFF
\$2C-\$2D	#DCB468	#ECD09C	#FFFF3F
\$0E-\$0F	#ECECEC	#ECECEC	#FFFFFF

SECAM map to PAL (preferred) and then NTSC.  
Brightness is aligned for B&W mode.

LUM.

B & W
#000000
#2121FF
#F03C79
#FF50FF
#7FFF00
#7FFFFFFF
#FFFF3F
#FFFFFF

## TIA COLOUR REGISTERS

TIA - Write

Addr	Name	Hi-Nybble	Lo-Nybble	Function
\$06	COLUP0	C C C C	L L L X	Colour / Luminance player 0, playfield (PF) score left
\$07	COLUP1	C C C C	L L L X	Colour / Luminance player 1, playfield (PF) score right
\$08	COLUPF	C C C C	L L L X	Colour / Luminance playfield (PF), ball (BL)
\$09	COLUBK	C C C C	L L L X	Colour / Luminance background

## DOCUMENT INFORMATION

Author: Justin Lane  
Revision: 2025-09-04 19:26:00  
Licence: CC0 1.0 Universal  
Location: GitHub  
Reference: RGB Values

<mailto:atari2600@jigglesoft.co.uk>  
<https://creativecommons.org/publicdomain/zero/1.0/>  
<https://github.com/JiggleSoft/atari2600-reference-guide>  
[https://www.qotile.net/mindig/docs/tia\\_color.html](https://www.qotile.net/mindig/docs/tia_color.html)