

SWTPC GT-6144 Graphics Diagnostic BARTST-1

The BARTST diagnostic program is designed to operate in a SWTPC 6800 computer and will help in locating problems in a GT-6144 graphics terminal. The program uses 00C9₁₆ words of memory and starts at location 0000₁₆ and may be stored on tape or loaded in from the terminal instruction by instruction using MIKBUG^R. When loading the program, the program counter locations A048 and A049 should be set to 0016. The program assumes that the parallel interface board in the computer is in the #3 interface slot.

The program itself has several test functions. After initiating the program the first thing done is to erase the terminal's memory. This can be verified if you have the screen in the UNBLANKED condition - going from left to right the screen should go black in a period of about 0.5 seconds. After the erase is over the screen should fill with 32 vertical bars starting at horizontal location 0. After the vertical bars appear the screen blanking/reversing functions can be checked by typing in the appropriate number from 1 - 6 on your keyboard.

- 1 ----- REVERSE SCREEN (black on white)
- 2 ----- NORMAL SCREEN (white on black)
- 3 ----- BLANK CT-1024 (if used)
- 4 ----- ENABLE CT-1024 (if used)
- 5 ----- ENABLE GRAPHICS
- 6 ----- BLANK GRAPHICS

The BARTST program can be modified to test odd numbered vertical bars and odd and even horizontal bars. When using the modifications below be sure to reload the program in its original form and then make the modifications. In all cases the program counter should be set to 0016.

	CHANGE	TO
ODD VERTICAL BARS	0058	41
	005D	81
EVEN HORIZONTAL BARS	0071	7C
	0072	00
	0073	59
	007D	01
	007E	01
	007F	01
ODD HORIZONTAL BARS	0071	7C
	0072	00
	0073	59
	007D	01
	007E	01
	007F	01
	0059	01
	0066	61
	0077	01

0000	00			0039	ED		JSR	OUTCH
0001	00			003A	00			
0002	00			003B	06			
0003	00			003C	7C		INC	EVPOS
0004	8C		PARADRMSB	003D	00			
0005	0C		PARADRLSB	003E	27			
0006	FE	OUTCH:	LDX PARADRLSB	003F	20		BRA	INCREM
0007	00			0040	FO			
0008	04			0041	86	SPEC:	LDA A	#\$00
0009	A7		STA A 0,X	0042	00		STA A	EVPOS
000A	00			0043	97			
000B	C6		LDA B #\$37	0044	27		INC	EHPOS
000C	37			0045	7C			
000D	E7		STA B 1,X	0046	00		BRA	OVER
000E	01			0047	26			
000F	E6		LDA B 0,X	0048	20			
0010	00			0049	DE	OUT:	LDA A	#\$00
0011	C6		LDA B #\$3F	004A	86		STA A	EHPOS
0012	3F			004B	00			
0013	E7		STA B 1,X	004C	97		STA A	EVPOS
0014	C1			004D	26			
0015	39		RTS	004E	97		LDA A	#\$E4
0016	86		LDA A #\$3C	004F	27		JSR	OUTCH
0017	3C			0050	86			
0018	B7		STA A #\$8007	0051	E4			
0019	80			0052	BD			
001A	07			0053	00		BRA	SKP
001B	FE		LDX PARADRMSB	0054	06			
001C	00			0055	20		NOP	
001D	04			0056	03		BHPOS	
001E	C6		LDA B #\$FF	0057	01		BVPOS	
001F	FF			0058	40		LDA A	BHPOS
0020	E7		STA B 0,X	0059	00	SKP:		
0021	00			005A	96		CMP	#\$40
0022	C6		LDA B #\$3F	005B	58		BEQ	OUT1
0023	3F			005C	81		JSR	OUTCH
0024	E7		STA B 1,X	005D	80			
0025	01			005E	27			
0026	00		EHPOS	005F	22			
0027	00		EVPOS	0060	BD			
0028	96	OVER:	LDA A EHPOS	0061	00			
0029	26			0062	06			
002A	81		CMP #\$40	0063	96	INCREM1:	LDA A	VPOS
002B	40			0064	59		CMP	#\$60
002C	27		BEQ OUT	0065	81		BEQ	SPEC1
002D	1C			0066	60			
002E	BD		JSR OUTCH	0067	27		ADD	#\$80
002F	00			0068	0D		JSR	OUTCH
0030	06			0069	8E			
0031	96	INCREM:	LDA A EVPOS	006A	80		INC	BVPOS
0032	27			006B	ED			
0033	81		CMP #\$60	006C	00			
0034	60			006D	06			
0035	27		BEQ SPEC	006E	7C			
0036	0A			006F	00			
0037	8E		ADD \$80	0070	59			
0038	80			0071	01		NOP	

0072 01		NOP		00AE 86	TWO:	LDA A #SE1
0073 01		NOP		00AC E1		
0074 20		BRA	INCREM1	00AD 20		BRA OUT1
0075 ED				00AE 16		
0076 86	SPEC1:	LDA A	#00	00AF 86	THREE:	LDA A #SE2
0077 00				00E0 E2		
0078 97		STA A	BHPOS	00E1 20		BRA OUT1
0079 59				00E2 12		
007A 7C		INC	BVPOS	00E3 86	FOUR:	LDA A #SE3
007B 00				00E4 E3		
007C 58				00E5 20		BRA OUT1
007D 7C		INC	BHPOS	00E6 0E		
007E 00				00E7 86	FIVE:	LDA A #SE4
007F 58				00E8 E4		
0080 20		BRA	SKP	00E9 20		BRA OUT1
0081 D8				00EA 0A		
0082 ED	OVER1:	JSR	INEEE	00EB 86	SIX:	LDA A #SE5
0083 E1				00EC E5		
0084 AC				00ED 20		BRA OUT1
0085 81		CMP A	#\$31	00EE 06		
0086 31				00EF 86	SEVEN:	LDA A #SE6
0087 27		BEQ	ONE	00C0 E6		
0088 1E				00C1 20		BRA OUT1
0089 81		CMP A	#\$32	00C2 02		
008A 32				00C3 86	EIGHT:	LDA A #SE7
008B 27		BEQ	TWO	00C4 E7		
008C 1E				00C5 ED	OUT1;	JSR OUTCH
008D 81		CMP A	#\$33	00C6 00		
008E 33				00C7 06		
008F 27		BEQ	THREE	00C8 20		BRA OVER1
0090 1E				00C9 D8		
0091 81		CMP A	#\$34			
0092 34						
0093 27		BEQ	FOUR			
0094 1E						
0095 81		CMP A	#\$35			
0096 35						
0097 27		BEQ	FIVE			
0098 1E						
0099 81		CMP A	#\$36			
009A 36						
009B 27		BEQ	SIX			
009C 1E						
009D 81		CMP A	#\$37			
009E 37						
009F 27		BEQ	SEVEN			
00A0 1E						
00A1 81		CMP A	#\$38			
00A2 38						
00A3 27		BEQ	EIGHT			
00A4 1E						
00A5 20		BRA	OVER			
00A6 DE						
00A7 86	ONE:	LDA A	#\$E0			
00A8 E0						
00A9 20		BRA	OUT1			
00AA 1A						