

The IBM T221 model 9503-DG1 monitor comes with a Matrox G200MMS graphics card which has been customized, and custom DVI cables for this card only. If a customer wishes to use a graphics card with standard DVI output connectors, then a standard DVI cable must be used. The standard DVI cable for IBM T221 consists of a 60 pin connector (on the monitor) which fans out to 3 connectors, consisting of two standard DVI connectors, and one USB connector. The standard DVI cables are included with IBM T221 model 9503-DG3, but not with 9503-DG1. Note: as of Jan 31, 2003, model 9503-DG1 has been discontinued.

There are currently two methods for obtaining standard DVI cables for IBM T221. Note: neither of these methods involve purchase through IBM US. This IBM part is stocked **only** as a replacement part for an existing broken part, i.e. it is available only as an IBM replacement part, not as a stand-alone purchase.

Method 1) From ITES company in Japan. Go to the following URL

<http://www.ites.co.jp/english/shop/>

and search for IBM T221 DG3 cables. The ITES part number is p/n 55P2997. As of the time of this writing the price is \$72 plus \$89 shipping.

Note: ITES does not accept credit cards, so the reply will be an email with instructions to wire-transfer funds from your bank to a bank in Japan. ITES will ship cables once the bank wire-transfer has been confirmed.

Method 2) Acquire a custom-built cable from a supplier. One suggested company which makes custom cables is:

Cable-Comm Technologies, Inc.
800 Enterprise Court
Naperville, IL 60563
800-544-1330 / FAX 630-717-5758
<http://www.cable-comm.com>

You should reference part number 07N2227 and quote # CCT25220. At the time of this writing, the approximate cost is \$110 each in quantities of 1-5, with a surface shipping cost of approximately \$10.00 (\$25.00 overnight express).

A schematic drawing of the DG3 cable follows.

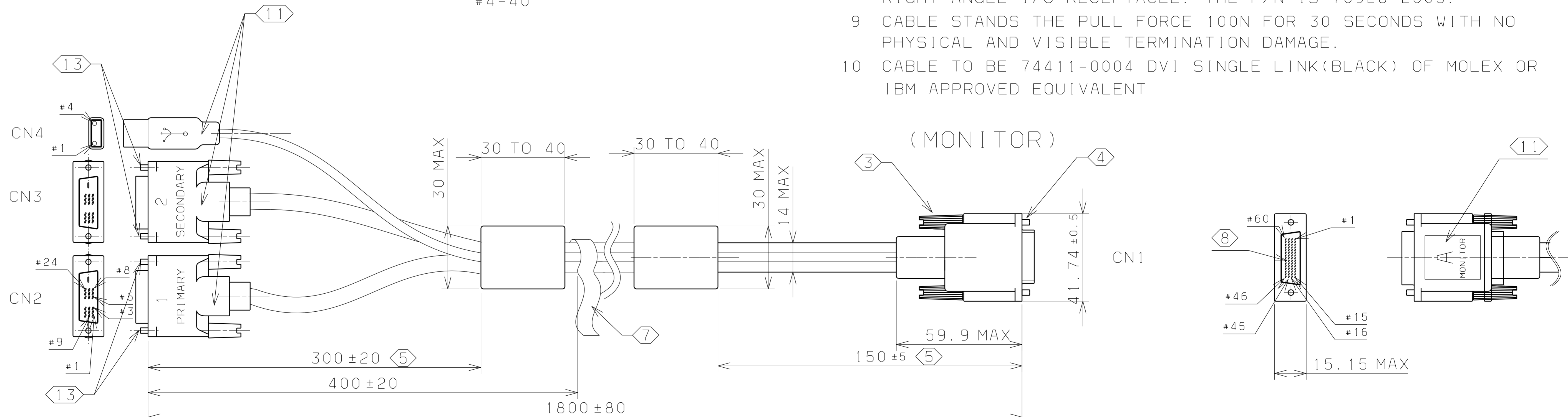
REL FOR ASM	QTY	TECHNICAL APPROVAL	DATE	EC NO.	DATE	EC NO.	PART NO.	
		ELECTRICAL	02JUL01	VER1.0			07N2227	
		MATERIAL	24JUL01	H30888				
			03AUG01	H30888				
							DEVELOPMENT NO.	Q/M

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NOTES

- CABLE REQUIREMENTS:
- ① Z₀(CHARACTERISITIC IMPEDANCE):
100Ω DIFFERENTIAL, ±15%(50Ω SINGLE ENDED)
 - ② FREQUENCY RESPONSE: >300MHZ (-3dB), >750MHZ(-6dB)
 - ⑪ MOLD RECESSED OR RAISED CHARACTERS OR LABEL TO IDENTIFY CONNECTION SIDE OF MONITOR
CN1:A MONITOR
CN2:1 PRIMARY
CN3:2 SECONDARY
CN4:(USB'S ICON AS SHOWN)
 - ⑫ CN2'S 4,5,8,12,13,20,21 ARE NC
CN3'S 4,5,8,12,13,20,21 ARE NC
CN4'S 1 IS NC
 - ⑬ THREAD OF THUMB SCREW TO BE #4-40

- 1 CONNECTOR HOUSING MATERIAL TO BE UL94V-0 GRADE. CABLE TO BE VW-1 OR BETTER.
- 2 THE COLOR OF CABLE, CONNECTOR AND THE OTHER TO BE BLACK.
- ③ KNURLING ON THUMB SCREW
- ④ THREAD OF THUMB SCREW TO BE M3.
- ⑤ FERRITE CORE TO BE FIXED IN THIS AREA. THE SIZE TO BE Ø30mm MAX AND 40mm LENGTH MAX.
- ⑥ OUTER SHELL TO BE STEEL AND GROUNDED TO SHIELD AT AROUND THE SHELL WITH BRAIDED WIRE SHIELD. NO SPIRAL SHIELD POSSIBLE. NO PIGTAIL GROUNDING POSSIBLE. WIRE DISCLOSURE NOT ALLOWED WHEN BENDED 90°.
- ⑦ FOLLOWING ITEM TO BE PRINTED ON PERMANENT TAG OR LABEL AROUND THE CABLE.
IBM P/N:07N2227
EC: H30888
MADE IN CHINA
- ⑧ MALE CONNECTOR TO BE MATED WITH MOLEX .050" PITCH LFH 60CKT RIGHT ANGLE I/O RECEPTACLE. THE P/N IS 70928-2005.
- 9 CABLE STANDS THE PULL FORCE 100N FOR 30 SECONDS WITH NO PHYSICAL AND VISIBLE TERMINATION DAMAGE.
- 10 CABLE TO BE 74411-0004 DVI SINGLE LINK(BLACK) OF MOLEX OR IBM APPROVED EQUIVALENT



SHEET 1 OF 2

07N2227

IBM MATERIAL NO.		MUST CONFORM TO ENG SPEC:80X2324 46G3772		SI metric A1	SCALE: 0 mm 25 THIRD ANGLE PROJECTION	PART NO. 07N2227		IBM
MATL ALTERNATE NO.		TOLERANCES UNLESS NOTED				TITLE CABLE, A2-DVI		
CASE DEPTH		LINEAR ±		DESIGNER	TH	02JUL01		
HARDNESS		ANGLES ±		CHECKED	RH	02JUL01		
SURFACE TREATMENT	CODE NO.	RADIO UNLESS NOTED		APPROVED	MK	02JUL01		
		EDGE/ CORNER BREAKS	OUTSIDE MAX	CLASS	MK	02JUL01		
			INSIDE MAX	THIS DOCUMENT IS THE PROPERTY OF IBM. ITS USE IS AUTHORIZED ONLY FOR RESPONDING TO A REQUEST FOR QUOTATION OR FOR THE PERFORMANCE OF WORK FOR IBM. ALL QUESTIONS MUST BE REFERRED TO THE IBM PURCHASING DEPARTMENT.				

REL FOR ASM	QTY	TECHNICAL APPROVAL	DATE	EC NO.	DATE	EC NO.	PART NO.
		ELECTRICAL	02JUL01	VER1.0			07N2227
		MATERIAL	24JUL01	H30888			DEVELOPMENT NO.
			03AUG01	H30888			Q/M

CN1 MOLEX 60PIN PLUG
 CN2,CN3 DVI-D PLUG
 CN4 USB TYPPE-A PLUG



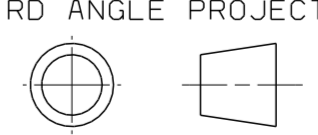
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CABLING CONNECTION 

CN1	SIGNAL	REMARKS	CN2	CN3	CN4	CN1	SIGNAL	REMARKS	CN2	CN3	CN4	CN1	SIGNAL	REMARKS	CN2	CN3	CN4	CN1	SIGNAL	REMARKS	CN2	CN3	CN4
1	GROUND A	SHELD OF (29.30)	19			30	TMDS DATA0+A	Zo. TWISTED PAIR	18			31	TMDS DATA1+A	Zo. TWISTED PAIR	10			60	GROUND A	SHIELD OF (31.32)	11		
2	ANALOG R	N/C				29	TMDS DATA0-A		17			32	TMDS DATA1-A		9			59	ANALOG G	N/C			
3	ANALOG B	N/C				28	TMDS DATA2+A	Zo. TWISTED PAIR	2			33	TMDS CLK +A	Zo. TWISTED PAIR	23			58	USB GROUND	SINGLE			4
4	GROUND A	SHELD OF (27.28)	3			27	TMDS DATA2-A		1			34	TMDS CLK -A		24			57	GROUND A	SHIELD OF (33.34)	22		
5	5V POWER A	SINGLE	14			26	EXT RTN 2	N/C				35	EXT POW 2	N/C				56	HSYNC	N/C			
6	SCL(DDC) A	SINGLE	6			25	USB+	TWISTED PAIR W/21			3	36	HPD A	SINGLE	16			55	VSYNC	N/C			
7	SDA(DDC) A	SINGLE	7			24	N/C	N/C				37	EXT POW 3	N/C				54	GROUND A	SINGLE	15		
8	GROUND*VIDEO	N/C				23	N/C	N/C				38	EXT RTN 3	N/C				53	VIDEO	N/C			
9	SDA(DDC) B	SINGLE		7		22	N/C	N/C				39	N/C	N/C				52	GROUND B	SINGLE		15	
10	SCL(DDC) B	SINGLE		6		21	USB-	TWISTED PAIR W/25			2	40	HPD B	SINGLE		16		51	VSYNC	N/C			
11	5V POWER B	SINGLE		14		20	EXT POW 1	N/C				41	EXT RTN 1	N/C				50	HSYNC	N/C			
12	GROUND B	SHELD OF (18.19)		3		19	TMDS DATA2-B	Zo. TWISTED PAIR		1		42	TMDS CLK -B	Zo. TWISTED PAIR		24		49	GROUND B	SHIELD OF (42.43)		22	
13	ANALOG B	N/C				18	TMDS DATA2+B			2		43	TMDS CLK +B			23		48	GROUND	N/C			
14	ANALOG R	N/C				17	TMDS DATA0-B	Zo. TWISTED PAIR		17		44	TMDS DATA1-B	Zo. TWISTED PAIR		9		47	ANALOG G	N/C			
15	GROUND B	SHELD OF (16.17)		19		16	TMDS DATA0+B			18		45	TMDS DATA1+B			10		46	GROUND B	SHIELD OF (44.45)		11	

CONNECTOR CHART

#	SUPPLIER	P/N	PIN	NOTE
CN1	MOLEX		60	
CN2	MOLEX		18	DVI-D SINGLE LINK
CN3	MOLEX		18	DVI-D SINGLE LINK
CN4	MOLEX		4	USB A TYPE

IBM MATERIAL NO.	MUST CONFORM TO ENG SPEC:80X2324 46G3772		SCALE:	PART NO.	
MATL ALTERNATE NO.	TOLERANCES UNLESS NOTED		0 mm 25	07N2227	
CASE DEPTH	LINEAR ±		THIRD ANGLE PROJECTION	TITLE CABLE,	
HARDNESS	ANGLES ±			A2-DVI	
SURFACE TREATMENT	RADII UNLESS NOTED			DESIGNER	TH 02JUL01
CODE NO.	EDGE/CORNER BREAKS	OUTSIDE MAX		CHECKED	RH 02JUL01
		INSIDE MAX		APPROVED	MK 02JUL01
				CLASS	MK 02JUL01

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