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REVISIONS			DDC. NO. SPC-F004 * Effective: 12/21/98 * DCP No: 680						
DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE	
1852	A	RELEASED	JWM	4/23/02	JN	03/13/08	JN	03/13/08	

**FEATURES:**

- 200MHz, Dual Channel, Delayed Sweep
- Built-In 6 Digit Universal Counter
- Auto Set
- TV-Line Selection (NTSC, PAL, SECAM)
- 10 Sets Memory for SAVE & RECALL of Front Panel Setting
- Cursor Readout with 7 Measurements
- Panel Setup Lock of Digital-Control Functions
- Buzzer Alarm
- LED Indicators
- Trigger Signal Output
- Z-Axis Modulation Input
- SMD Technology, High Stability and Reliability



SPC-F004.DWG

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UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY:	DATE:	DRAWING TITLE:			
	Jeff McVicker	4/23/02	200MHz Dual Trace/Channel Oscilloscope			
	CHECKED BY:	DATE:	SIZE	DWG. NO.	ELECTRONIC FILE	REV
	Jason Nash	03/13/08	A	72-6825	18C2257.dwg	A
	APPROVED BY:	DATE:	SCALE: NTS		U.O.M.: Millimeters	SHEET: 1 OF 3
Jason Nash	03/13/08					

## SPECIFICATIONS

### CRT

**Type:** 6-inch rectangular type with internal graticule;  
 0%, 10%, 90% and 100% markers. 8 x 10 DIV (1 DIV=1 cm)  
**Phosphor :** P31  
**Accelerating Potential:** 14 kV approx.  
**Illumination:** Continuously adjustable  
**Z-axis input:**  
 Coupling: DC  
 Sensitivity: 5V or more  
 Maximum input voltage: 30V (DC+AC peak) at 1kHz or less  
 Bandwidth: DC ~ 5MHz

### VERTICAL SYSTEM

**Sensitivity :** 2mV ~ 5V/DIV, 11 step in 1-2-5 sequence  
**Sensitivity Accuracy :** ≤3% (5 DIV at the center of display)  
**Vernier Vertical Sensitivity :** Continuously variable to 1/2.5 or less panel-indicate value  
**Bandwidth (-3dB):** DC ~ 200MHz (2mV/DIV : DC ~ 20MHz)  
**Rise Time:** 1.75nS (2mV/DIV : 17.5 nS)  
**Signal Delay :** Leading edge can be monitored  
**Max. Input Voltage :** 400V (DC+AC peak) at 1kHz or less  
**Input Coupling:** AC, DC, GND  
**Input Impedance:** 1 Megohm ± 2% // approx. 25pF  
**Vertical Mode :** CH1, CH2, DUAL (CHOP/ALT), ADD, CH2 INV.  
**Bandwidth Limited:** 20MHz  
**Common-Mode Rejection Ratio :** 50:1 or better at 50kHz  
**Dynamic Range :** 8 div at 100MHz; 5 div at 200MHz

### HORIZONTAL SYSTEM

**Horizontal Modes :** MAIN(A), ALT, DELAY(B)  
**A (main) Sweep Time :** 20nS ~ 0.5S / DIV, continuously variable (UNCAL)  
**B (delay) Sweep Time :** 20nS ~ 50mS/DIV  
**Accuracy :** ±3% (±5% at x 10 MAG)  
**Sweep Magnification :** x 10 (maximum sweep time 2nS / DIV)  
**Hold Off Time:** Variable  
**Delay Time :** 1µS ~ 5S  
**Delay Jitter:** Better than 1:20000  
**Alternate Separation :** Variable

### TRIGGER

**Trigger Modes :** AUTO, NORM, TV  
**Trigger Source :** CH1, CH2, LINE, EXT, EXT/10  
**Trigger Coupling :** AC, DC, HFR, LFR, NR  
**Trigger Slope :** "+" or "-" polarity or TV sync polarity  
**Trigger Sensitivity :**

Mode	Frequency	INT	EXT	EXT/10
AUTO	10Hz~20MHz	0.35 DIV	50 mV	500 mV
	20MHz~200MHz	1.5 DIV	150 mV	1.5 V
NORM	DC~20MHz	0.35 DIV	50 mV	500 mV
	20MHz~200MHz	1.5 DIV	150 mV	1.5 V
TV	sync signal	1 DIV	200 mV <sub>pp</sub>	2 V <sub>pp</sub>

**Trigger Level Range:** INT: ±4DIV or more; EXT: ±0.4V or more; EXT/10: ±4V or more

**TV Triggering:** Mode: TV-V, TV-H, TV-LINE

**TV-Line Selection :**

Standard	Filed 1	Filed 2
NTSC (525H)	1H~263H	1H~262H
PAL (625H)	1H~313H	1H~312H
SECAM (625H)	1H~313H	1H~312H

SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	72-6825	18C2257.dwg	A
SCALE:	NTS	U.O.M.: INCHES [mm]	SHEET: 2 OF 3

**Max. External Input Voltage** : 400V (DC+AC peak) at 1kHz  
**External Input Impedance** : 1 Megohm  $\pm 5\%$ , // approx. 25pF

**X-Y OPERATION**

**Mode**: X-axis: selectable CH1, EXT, EXT/10; Y-axis: selectable CH1, CH2, CH1 and CH2  
**Sensitivity Accuracy** : 2mV ~ 5V/DIV  $\pm 3\%$ ; EXT: 0.1V/DIV  $\pm 5\%$ ; EXT/10: 1V/DIV  $\pm 5\%$   
**X-axis Bandwidth** : DC ~ 500kHz (-3dB)  
**Phase Error** : 3° or less from DC ~ 50kHz

**OUTPUT SIGNAL**

**Trigger Signal Output** : Voltage: approx. 25mV/DIV into 50 ohms; Frequency response: DC~10MHz  
**Calibrator Output** : 1kHz square wave, 2Vpp  $\pm 2\%$

**CURSOR READOUT FUNCTION**

**Cursor Measurement Function** :  $\Delta V$ ,  $\Delta V\%$ ,  $\Delta VdB$ ,  $\Delta T$ ,  $1/\Delta T$ ,  $\Delta T\%$ ,  $\Delta \theta$   
**Cursor Resolution** : 1/100 DIV  
**Effective Cursor Range** : Vertical:  $\pm 3DIV$ ; Horizontal:  $\pm 4DIV$   
**Panel Setting Display** : Vertical: V/DIV(CH1,CH2), UNCAL, ALT/CHOP/ADD, INV, probe factor, AC/DC/GND  
Horizontal : S/DIV(MTB,DTB), UNCAL, x 10MAG, delay time, HO  
Trigger : source, coupling, slope, level, TV-V, TV-H  
Others : X-Y, lock, save/recall MEM 0-9

**AUTO MEASUREMENT FUNCTION**

**Parameter Function** : FREQ, PERIOD,  $\pm WIDTH$ ,  $\pm DUTY$  ( + or - polarity selected by trigger slope)  
**Display Digits** : Max. 6-digits, decimal  
**Frequency Range** : 50Hz ~ 200MHz  
**Accuracy** : 1kHz ~ 200MHz :  $\pm 0.01\%$ ; 50Hz ~ 1kHz :  $\pm 0.05\%$   
**Measuring Sensitivity** : >2 div (Measuring source selected from CH1 and CH2 as synchronous signal sources)

**SPECIAL FUNCTION**

**Auto Set** : Input Channel: CH1, CH2; Frequency Response 50Hz~50MHz  
**Panel Setting Save & Recall** : 10 sets  
**Panel Setups Lock** : Provided

**POWER SOURCE:** AC 100V / 120V / 230V  $\pm 10\%$ , 50 / 60Hz

**ACCESSORIES:** Power cord  
Instruction manual  
2 Probes(10:1/1:1)

**DIMENSIONS & WEIGHT:** 310(W) x 150(H) x 470(D)mm; Approx. 9kg

SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	72-6825	18C2257.dwg	A
SCALE:	NTS	U.O.M.: INCHES [mm]	SHEET: 3 OF 3