

SPECIFICATIONS

Reference operating conditions: 23±2°C, humidity 50±10% R.H., warmup time 30 minutes or more.

Other conditions, unless otherwise specified: No load, DC offset addition 0 V, filter off, output attenuator 1/1, external analog addition OFF, clock at 10 MHz.

Analog output (general)	Number of output channels	1: (705110), 2: (705120), 4: (705140/705142)
	Max. output voltage	±10 V (no load)
	Output impedance	50 Ω ± 5% (DC)
	Output resolution	12 bits
	Load resistance	≥ 40 Ω
	DC offset summing	
	Setting range	≤ ±10 V (resolution, 1 mV)
	Accuracy	≤ ±(0.5% of setting + 5 mV)
	External analog summing	
	Input voltage range	≤ ±10 V
	DC summing accuracy	≤ ±(0.5% of input voltage + 10 mV)
	Voltage gain	1.0
	Frequency characteristic	DC to 5 MHz (+ 0.5 db/- 3 dB)
	Input resistance	100 kΩ ± 5% (DC)
Input channels	CH1 (705110) CH1, CH2 (705120) CH1 to CH4 (705140) CH1, CH2 (705142)	
Arbitrary waveform output	DC accuracy	≤ ±(0.3% of setting + 15 mV + FSATT accuracy)
	DC stability	≤ ±(300 ppm of setting + 2 mV)/°C
	Full-scale setting attenuator (FSATT) dB setting	2 selectable setting methods 1. Full-scale dB setting (reference, 10 V) 2. Full-scale voltage setting
	Setting range	0 to 60 dB (resolution, 0.001 dB)
	DC accuracy	±(0.5% of setting [dB] + 0.02 dB)
	Filter (LPF)	
	Setting type	500k/1M/2M/5M/SHARP (2.7 MHz)/OFF
	Overshoot	±5% of max. amplitude (except in SHARP and OFF)
	Rise time	≤ 70 ns (10 to 90%, filter OFF)
	Interchannel skew	≤ ±25 ns (referenced to CH1, filter OFF)
Interchannel crosstalk (reference value)	-70 dB	
Output noise (reference value)	Clock component, -37 dBm (into 50 Ω load) Non-clock components, -70 dBm (into 50 Ω load) Whiteness (40 Hz to 5 MHz), 1 mV rms (into 50 Ω load)	
Internal clock	Clock rate	10 mHz to 10 MHz
	Resolution	10 mHz
	Accuracy	≤ ±50 ppm (at 100 mHz res.)
	Jitter	≤ 800 ps rms (at 40 kHz to 10 MHz) ≤ 40 ppm rms of period set (at 10 mHz to 40 kHz) Except in clock sweep
Internal memory	Clock sweep	Arbitrary waveform programmable clock sweep Sweep forms: Linear, log, arbitrary sweep
	Waveform memory	32,000 words/channel (up to 16 waveform elements per 10 to 16,000 words can be set)
	Sequence memory	255 steps
Arbitrary waveform control	Event memory	32,000 words (1 bit/word)
	Output waveform sequence control	Sequence control statement content (for each step): Waveform Type/Looping Count/Jump-LINE/ [HOLD]/∞ LOOP
Arbitrary waveform control	Trigger functions	The following trigger operations can be executed by combining the external trigger, and the [HOLD]/∞ LOOP coding described above Arbitrary waveform triggered start (external trigger + hold) Arbitrary waveform burst operation (external trigger + hold + loop count) Arbitrary waveform switching (external trigger + ∞ LOOP)

Arbitrary waveform control	Multi-unit parallel operation	Synchronized arbitrary waveform output on up to 4 units
	Interchannel delay	Settable in 1 clock cycle increments (except on 705110)
Auxiliary input/output	CLOCK-IN (external clock input)	Switchable to TTL or AC input (Impedance, 10 kΩ) TTL: ≤ 10 MHz
	CLOCK-OUT	TTL output
	TRIG-IN (trigger input)	TTL input (impedance, 20 kΩ)
	TRIG-OUT	TTL output
	RUN/STOP IN	TTL input (impedance, 20 kΩ)
	RUN/STOP OUT	TTL output
	SEQ-SYNC (sequence output)	TTL output (50 Ω serial termination) Synchronized to sequence operation
	SWP-SYNC (sweep sync output)	TTL output (50 Ω serial termination) Synchronized to sweep start
	EVENT (event output)	TTL output (50 Ω serial termination) Synchronized to CH1 waveform element
	Output channel	Individually selectable for each channel
Function generator output	System	Synthesized system (Frequency/waveform selectable independently for each channel)
	Waveform types	Sine, square, triangle, ramp
	Frequency (period setting)	10 mHz to 2 MHz (sine waveform) 10 mHz to 200 kHz (other than sine) Resolution, 10 mHz
	Frequency accuracy	≤ ± 50ppm (Freq. setting)
	Jitter	≤ 100 ns p-p
	Interchannel delay	Can be set in increment of 0.1 degree (except 705110)
Interface	GP-IB	Conforms to IEEE St'd 488-1978 (JIS C 1901-1987) Interface codes: SH1, AH1, T6, L3, SR1, RL1 PP0, DC1, DT1, C1, C2, C3, C4, C27
	Printer output	Compatible with Centronics specifications Compatible with Epson LQ Series
General specifications	Display	9-inch CRT (amber)
	Floppy disk	3.5-inch FDD, Format: MS-DOS, NEC-2HD
	Operating temperature range	5 to 40°C (41 to 104°F)
	Operating humidity range	20 to 80% R.H. (maximum wet bulb temperature, 29°C, 84°F)
	Power requirements	90 to 250 V AC, 48 to 63 Hz
	Power consumption	300 VA max.
	Weight	Approx. 13 kg, 28.7 lbs (705142)
	Dimensions	Approx. 426(W) × 177(H) × 441(D) mm (16-3/4 × 7 × 17-3/8")

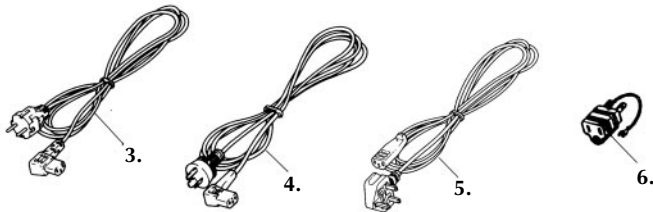
■ DIGITAL OUTPUT (705142 ONLY)

Digital output	Output channels	Analog output (arbitrary waveform or function generator) or digital output (PG) can be selected for CH3 and CH4
	Output bits	[16 bits + STRB (clock) × 1]/channel × 2
	Waveform	NRZ waveform synchronized to clock rate
	Output level	CMOS level output (100 Ω serial termination)
	Output current	≤ 10 mA/bit
	Load resistance	≥ 1 kΩ
Reverse-applied voltage	0 V min., 5 V max.	

AG1200

STANDARD ACCESSORIES

No.	Part Name	Part No.	Q'ty	Description
1.	3.5" FD	—	1	Sample waveform data (GP-IB program)
2.	Power cord	A1006WD	1	UL, CSA standard VDE standard SAA standard BS standard } Specified one
3.		A1009WD	1	
4.		A1024WD	1	
5.		A1023WD	1	
6.	Adapter	A1253JZ	1	UL to JIS type converter
—	Instruction manual	—	1 set	AG1200 & GP-IB interface

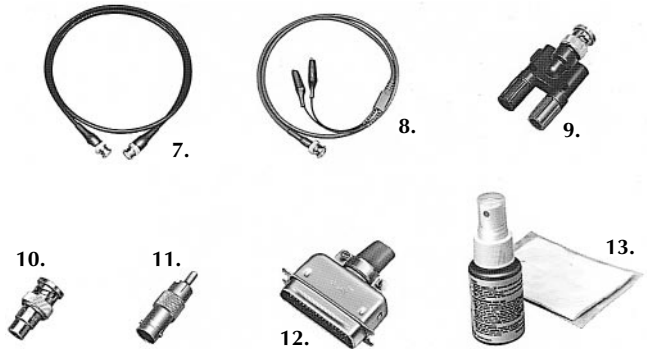


AVAILABLE MODELS

Model	Suffix Codes	Description
7051	AG1200 Arbitrary Waveform Generator
No. of Channels	10	AG1200 (1 channel: single analog output)
	20	AG1200 (2 channel: two analog output)
	40	AG1200 (4 channel: four analog output)
	42	AG1200 (4 channel: two analog output + two analog/digital selectable)
Power Requirements	-0	90 to 250 V AC
Power Cord	/D	UL, CSA standard
	/F	VDE standard
	/H	SAA standard
	/J	BS standard
	/M	JIS standard (UL + adapter) grounded cable
Floppy Disk Drive	/2DD	IBM format 2DD (720K bytes)

OPTIONAL ACCESSORIES

No.	Name	Code	Order Q'ty
7.	BNC cable (BNC-BNC, 1 m)	366924	1 unit (1 pc./unit)
	BNC cable (BNC-BNC, 2 m)	366925	
8.	BNC cable (with alligator clip)	366926	
—	Interface cable for printer	705931	
9.	Conversion adapter with BNC plug and banana jack	366921	
10.	Conversion adapter with BNC plug and RCA jack	366927	
11.	Conversion adapter with BNC jack and RCA plug	366928	
	T-shaped adapter for parallel connection	366923	
—	50 Ω terminator for parallel connection	705920	
12.	Digital output connector (36-pin, male, soldered type)	705940	
	Parallel connection kit for two generators	705922	
	Parallel connection kit for three generators	705923	
	Parallel connection kit for four generators	705924	
13.	Cleaning kit for CRT	700921	



ORDERING INFORMATION

When ordering, specify:

1. Instrument name, model and codes.
2. Name and code of optional accessory, if required.

DIMENSIONS

Unit: mm (inch)

