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Find the *Iwatsu S-K3744C3* at our website: *Click HERE*

LT224/LT322/LT342/LT344/LT364 Technical Specifications

Acquisition System

Bandwidth (-3dB):
LT322/LT342/LT344/LT364: 500 MHz @ 50 Ohm and at probe tip with PP006; select bandwidth limit (25 or 200 MHz) independently by channel.
LT224: 200 MHz @ 50 Ohm and at probe tip with PP006; select bandwidth limit (25 MHz) independently by channel.

INPUT IMPEDANCE: 50 Ohm ±1.0%; 1 MOhm // 12 pF typical (using PP006 probe)

Input Coupling:
1 MOhm: AC, DC, GND;
50 Ohm: DC, GND

Max Input:
50 Ohm: 5 Vrms;
1 MOhm: 400 Vmax (peak AC <-5kHz + DC)
Single Shot Sampling Rate per Channel:
LT342/LT344/LT364: 500 MS/s max (1 GS/s for LT364 when using two channels)
LT224/LT322: 200 MS/s max

Repetitive (RIS) Sampling Rate:
LT342/LT344/LT364: 25 GS/s max
LT224/LT322: 10 GS/s max

Acquisition Memory:
LT342/LT344/LT364: 250 kpts/Ch, 1 Mpt/Ch on L models (500 kpts for LT364 and 2 Mpts for LT364L when using two channels)
LT224/LT322: 100 kpts/Ch

Sequence Acquisition Mode
LT224/LT322: 2 - 400 Segments
LT342/LT344/LT364: 2 - 1000 Segments
LT342L/LT344L/LT364L: 2 - 4000 Segments

Vertical Resolution: 8 bits

Sensitivity: 2 mV – 10 V/div fully variable

DC Gain Accuracy: ±(1.5% +0.5% of full scale)

Offset Range: 2 mV–50 mV/div: ±1 V100 mV–500 mV/div: ±10 V1 V–10 V/div: ±100 V

Offset Accuracy: ±(1.5% + 0.5% of full scale + 1.0 mV)

Timebase System

Timebases: Main and up to four zoom traces simultaneously

Clock Accuracy: <=10 ppm

Interpolator Resolution: 5 ps

External Clock:
LT342/LT344: <=500 MHz, 50 Ohm, or 1 MOhm impedance
LT322/LT224: <=200 MHz, 50 Ohm, or 1 MOhm impedance

RollMode: <=500 kpts: 500 ms - 1000 s/div, 100 ks/s max; >=500 kpts: 1 s - 1000 s/div, 100 ks/s max

Triggering System

Modes: Normal, Auto, Single, and Stop

Sources: Any input channel, external, Ext/10 or line; slope, level, and coupling are unique to each source (except line trigger).Coupling Modes: DC, AC, HF, HFREJ, LFREJ (reject frequency 50 kHz typ)

Pre-Trigger Recording: 0–100% of horizontal time scale

Post Trigger Delay: 0–10,000 divisions

Holdoff by Time or Events: Up to 20 s or from 1 to 99,999,999 events

Internal Trigger Range: ±5 div

Maximum Trigger Frequency: Up to 500 MHz with HF coupling

External Trigger Input: ±.5 V, ±5 V with Ext/10; max input same as input channels

Autosetup

Automatically sets timebase, trigger, and sensitivity to display a wide range of repetitive signals; vertical find automatically sets sensitivity for the selected input signal.

Acquisition Systems

Model	Bandwidth	Channels	Sample Rate	Acquisition Memory
LT342 DISCONTINUED	500 MHz	Two	500 MS/s	250 kpts/Ch
LT342L DISCONTINUED	500 MHz	Two	500 MS/s	1 Mpts/Ch
LT322 DISCONTINUED	500 MHz	Two	200 MS/s	100 kpts/Ch
LT344 DISCONTINUED	500 MHz	Four	500 MS/s	250 kpts/Ch
LT344L DISCONTINUED	500 MHz	Four	500 MS/s	1 Mpts/Ch
LT364 DISCONTINUED	500 MHz	Four	1 GS/s/2 Ch	500 kpts/Ch
LT364L DISCONTINUED	500 MHz	Four	1 GS/s/2 Ch	2 Mpts/Ch
LT224 DISCONTINUED	200 MHz	Four	200 MS/s	100 kpts/Ch

Waverunner Triggers

Name	Description	Edge or SMART Trigger®
Edge/Slope/Window/Line	Triggers when signal meets slope and level condition.	Edge

Signal pulse width	Triggers on glitches down to 2 ns. Width selectable from <2.5 ns to 20 s or on intermittent faults.	SMART
Signal interval	Triggers on intervals selectable between 10 ns and 20 s.	SMART
State or edge qualified	Triggers on input only after a defined state or edge occurred on another channel. Delay between sources is selectable by time or events.	SMART
Dropout	Triggers if the input signal drops out for longer than selected time between 25 ns and 20 s.	SMART
Pattern*	Triggers on logic combination of five inputs - CH1, CH2, CH3, CH4, and EXT trigger, where each source can be defined as High, Low, or Don't Care.	SMART
TV	Triggers on line (up to 1500), NTSC, or nonstandard video, choice of fields**.	SMART

* LT364/L only

** 1, 2, 4, 8 fields for LT364/L; odd or even fields for all other models

Probes

Model PP006: 10:1, 10 MOhm with autodetect (one per channel)

Probe System: ProBus Intelligent Probe System supports differential amplifiers and active, high-voltage, current, and differential probes.

Color Waveform Display

Type: Color 8.4" flat panel TFT-LCD with VGA, 640 x 480 resolution

Screen Saver: Display blanks after 10 minutes. Real Time Clock: Date, hours, minutes, and seconds displayed with waveform

Number of Traces: Maximum eight on four channel models, six on two channel models; simultaneously display channel, zoom, memory, and math traces

Grid Styles: Single, Dual, Quad, Octal, XY, Single+XY, Dual+XY; Full Screen gives enlarged view of each style.

Waveform Styles: Sample dots joined or dots only -- regular or bold

Analog Persistence Display

Analog and Color-Graded Persistence: Variable saturation levels; stores each trace’s persistence data in memory

Trace Display: Opaque or transparent overlap Zoom Expansion Traces

Zoom Expansion Traces

Style: Display up to four zoom traces Vertical Zoom: Up to 5x expansion, 50x with averaging

Vertical Zoom: Up to 5x expansion, 50x with averaging

Horizontal Zoom: Expand to 2 pts/div, magnify to 50,000x

Auto scroll: Automatically scan and display a captured signal

Rapid Signal Processing

Processor: 160 MHz PowerPC

Memory:
16 Mbytes: LT364, LT344, LT342, LT322, LT224
32 Mbytes: LT364L, LT344L, LT342L

Internal Waveform Memory

Waveform: M1, M2, M3, M4**

Zoom and Math: A, B, C, D

***Store full-length waveforms with 16 bits/data point.*

Setup Storage

For front panel and instrument status: Four non-volatile memories and floppy drive are standard. PC card hard drive and memory card are optional.

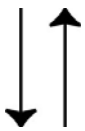
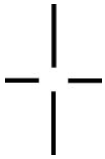
Math Tools

Simultaneously perform up to four math processing functions; traces can be chained together to perform math on math. standard math tools:

Standard Math Tools:

average (summed to 4000 sweepts)	product
difference	ratio
enhanced resolution (to 11 bits vertical)	reciprocal (invert)
envelope	resample (deskew)
FFT of 50 kpoint waveforms	rescale (with units)
floor	roof
identity	sin x/x
negate	sum

Cursor Measurements

Type	Symbol	From	To
Relative time		first point on waveform	any other point on waveform
Relative voltage		select voltage level	any other voltage level
Absolute time		time and voltage relative to	ground and trigger

Absolute voltage		voltage	ground

Measure Tools

Automated Measurements: Display any five parameters together with their average, high, low, and standard deviations.

Standard Measure Tools:

amplitude	duty cycle	-overshoot
area	fall 90-10%	peak-to-peak
base	fall 80-20%	period
cycle mean	frequency	phase
cycle rms	maximum	rise 10-90%
cycles	mean	rise 20-80%
data	median	rms
delay	minimum	top
delta delay	+overshoot	width

Pass/Fail

Test any five parameters against selectable thresholds. Limit testing is performed using masks created on the scope or PC. Setup a pass or fail condition to initiate actions such as hardcopy output, save waveform to memory, GPIB SRQ, or pulse out.

Extended Math and Measurements Option

Adds math and advanced measurements for general-purpose applications. Includes all standard math and measurement tools, plus:

Extended Math Tools:

absolute value	log (base 10)
differentiate	integrate
exp (base e)	square
exp (base 10)	square root
log (base e)	trend (datalog)

Extended Measure Tools:

cycle medium	fall @ level; % and volts
cycle std. deviation	first point
delta time @ level; % and units	last point
delta time @ level from trigger	number of points
delta time from clock to data + (setup time)	rise @ level; % and volts
delta time from clock to data - (hold time)	std. deviation
duration	

Waveanalyzer Option (WAVA)

Includes the Extended Math and Measure Tools as well as expanded capabilities for performing FFTs, averaging, histograms, and histogram parameters.

WaveAnalyzer Tools:

Histograms with 18 histogram parameters
Summed averaging to one million sweeps
Continuous weighted averaging
FFT (up to 1 Mpoint waveforms)
FFT power averaging
FFT power density, real, and imaginary

Other Application Solutions

Jitter and Timing Analysis (JTA), PowerMeasure System, Telecom Mask Testing

Interface

Remote Control: Full control via GPIB and RS-232-C (standard) or via Ethernet for all instrument controls and internal functions (optional).

Ethernet Port (Optional): 10 Base-T, TCP/IP Protocol

Floppy Drive: Internal, DOS-format, 3.5" high-density

PC Card Slot (Optional): Supports memory and hard drive cards.

External Monitor Port: 15-pin D-Type VGA-compatible, 640 x 480 RGB

Centronics Port: Parallel printer interface

Internal Graphics Printer (Optional): Provides hardcopy output in <10 seconds.

Outputs

Calibrator Signal: 500 Hz–1 MHz square wave, -1.0 to +1.0, test point, and ground lug on front panel

Control Signals: Choice of trigger ready, trigger out, or pass/fail status; TTL levels into 1 MOhm at rear panel BNC (output resistance 300 Ohms ±10%)

General

Operating Conditions: Temperature 5–40°C; humidity 80% non-condensing at 40°C; altitude <=2,000 meters

Shock and Vibration: Conforms to MIL-PRF-28800F, Class 4

Power Requirements: 90-132 V AC and 180-250 V AC; 45-66 Hz; maximum power dissipation: 150 VA - 230 VA, depending on model

Certifications: CE, UL and cUL

Dimensions (HWD): 210mm x 350mm x 300mm; 8.3" x 13.8" x 11.8" (height excludes feet)

Weight: 8 kg; 18 lbs

Warranty and Calibration: Three years; calibration recommended yearly

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