IWATSU ELECTRIC CO., LTD.

OSCILLOSCOPE SS-7611/SS-7607
(100MHz) (60MHz)

INTRODUCTION MANUAL

Contents

Getting to Know This Manual

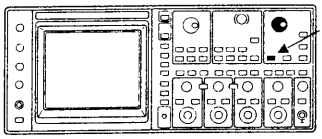
For the detailed instructions, see the **OPERATION MANUAL.**

◆ Each function and operation are described in the following order:

The SS-7611/7607 consists of two operation manuals : "Introduction Manual" and "Operation Manual". The "Introduction Manual" helps first time operators. The "Operation Manual" helps users who intend to use the SS-7611/7607 more conveniently and know more functions in detail.

◆ Notations and Conventions

This manual uses the following notations and conventions.



◇ Panel illustration

The panel illustration in the top and right of the each page shows the locations of the keys used for the operation as the painted keys.

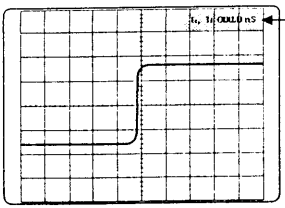
◇ Key notations

- ALT TIME is used to indicate the actual key or switch.
- is used to indicate the actual knob.
- AC DC / (AC DC) is used to indicate the bistable key. Pressing the key shifts to the another state. The key notation in the parentheses may be omitted.
- A , CH 1 is used to indicate all the necessary keys for the operation. You can push the keys in any order and may need to push the key several times.
- B → DLY is used to indicate the key operation sequence.

◆ Notations in the operation procedure

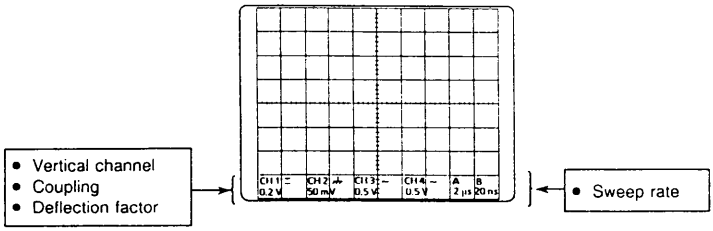
- ①, ②, ③ ··· is used to indicate the operation procedure.
- **SWEEP** is used to indicate the function to be selected.
- connects the description and the illustration.

◆ Marks in the screen display illustration



The ◀ and ▶ marks are used to indicate the functions or operations selected. Certainly these marks are not shown on the actual screen.

Viewing Area and Messages on the Screen



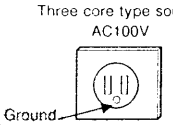
Turning the Power On and Off

WARNING

◇ **Follow the next rules for the safety operation when connecting the power cord.**

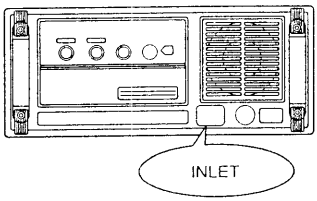
Check the line voltage and use the proper power cord suiting to the line voltage.

Never use the wrong power cord.



◆ Turning the power on

Names on rear panel



① Push out the power switch and turn the power off position ⏻ .

② Insert the power cord plug into the oscilloscope inlet.

③ Insert the power cord plug into the outlet in the wall.

④ Push the power switch and turn the power on position ⏻ .

- In a short time, the trace and/or the character readouts are displayed.

  If not, turn the INTEN ⏻ ENHANCE knob and/or the READOUT ⏻ BEAM FIND knob clockwise.

  (These knobs are set fully counter clockwise at the factory shipment.)

⑤ Start the measurement.

◆ Turning the power off

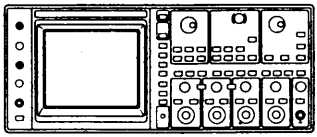
No special procedure is required for turning the power off.

One point advice

- The last setup before the power off is backed up by the internal fixed lithium battery. When the oscilloscope is turned on, the last setup before the power off is recalled.

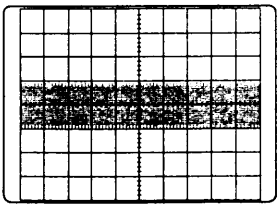
Operation Guide

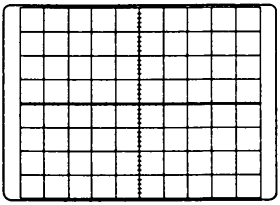
Adjusting the Display



To obtain the best measurement circumstances, adjust the display before starting the measurement.

◆ INTEN

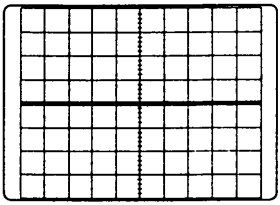


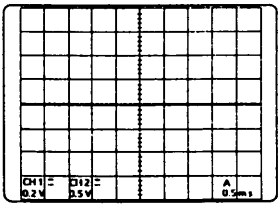


INTEN :

Do not increase the intensity too highly.Highly increased intensity may result in eye irritation.

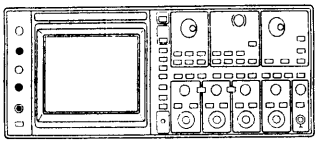
◆ FOCUS



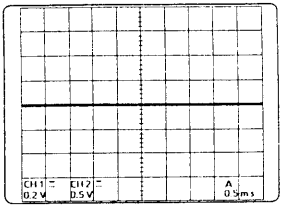


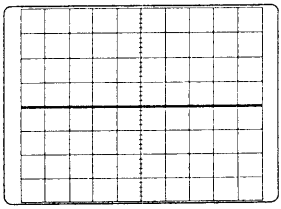
FOCUS:

Adjusts the focus to optimize the trace and character readout display.



◆ READOUT

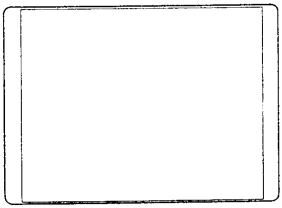


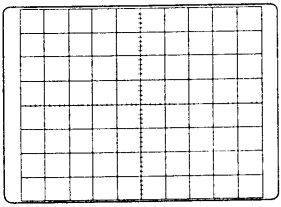


READOUT:

Rotating the **READOUT** control clockwise increases the character readout intensity.

◆ SCALE

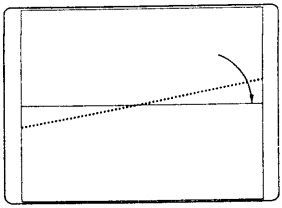




SCALE:

Adjusts the scale illumination.

◆ TRACE ROTATION



TRACE ROTATION:

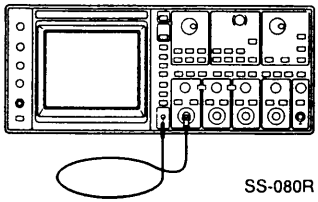
Aligns the tilted display by using the small screw driver.

Displaying the CAL waveform

(The **CAL** signal is used for the vertical sensitivity and sweep rate calibration and probe phase compensation.)

Displaying the signal on the screen is the first step for the oscilloscope users. For a first time user, the following steps describe how to display the signal on the screen.

◆ Preliminary setup



Using the accessory probe (SS-080R), apply the **CAL** signal into the **CH1** input.

SS-080R Probe

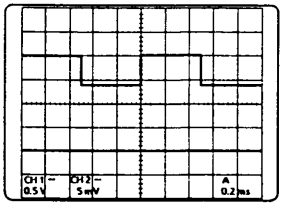
◆ Key operation

AUTO SET

Setting

AUTO SET

◆ Operating procedure



① Press the AUTO SET key.

- The setups are automatically selected to display the appropriate size of the waveform such as:

  CH1 CAL signal

  Amplitude : 1.2 division at 0.5V/div attenuator range

  Cycle : about 2 cycles at 0.2ms/div sweep rate

Automatic setup conditions

Function	Selection made
Vertical system	Dual trace of CH1 and CH2
VERT MODE	
CH2 INV	OFF
20MHz BW	OFF
VOLT/DIV	1 to 4 div screen amplitude
UNCAL	OFF
COUPLING	AC
X5 MAG	OFF

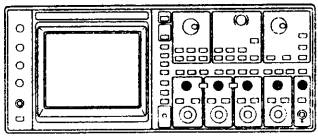
Function	Selection made
Horizontal system	
HORIZ DISPLAY	A
A SEC/DIV	1 to 4 cycles of the signal
X10 MAG	OFF
Triggering	
A TRIG SOURCE	CH1 or CH2, whichever lower frequency
A TRIG COUPLING	AC
A TRIG SLOPE	+
A TRIG LEVEL	Optimum level

One point advice

- The **AUTO SET** function has no effect to the menu measurement conditions.
- When the **AUTO SET** function is selected, the oscilloscope is set tothe appropriate setups after the input signal amplitude and frequency are checked. No **AUTO SET** function is available for the **CH3** and **CH4** inputs.

Operation Guide

Positioning the Waveform

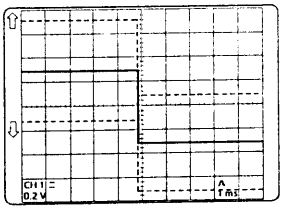


POSITION

By using the vertical and horizontal **POSITION** controls, the waveform will be positioned to obtain the best display for the measurement.

Vertical positioning

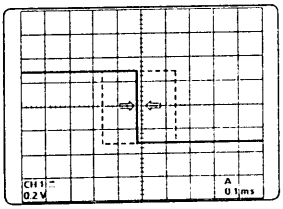
◆ Operating procedure



① Using the each ⇕◯ knob, position the waveform vertically.

Horizontal positioning

◆ Operating procedure



① Using the ⇔◯ knob, position the waveform horizontally.

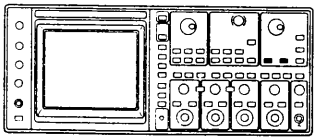
One point advice

- **BEAM FIND**

  Push the **READ OUT** control knob and activate the **BEAM FIND** function, you can find the trace when the trace is out of the screen.

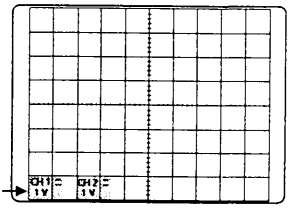
Operating Guide

Changing the amplitude



VOLTS/DIV UNCAL

You can change the signal amplitude to obtain the suitable size of the signal for the measurement.



Selecting the vertical sensitivity (CH1, CH2)

① Push the VOLTS/DIV CH1 or the VOLTS/DIV CH2 key and set the **CH1** or the **CH2** **VOLTS/DIV**.

② Using the RANGE knob, select the deflection factor.

UNCAL (Variable function)

① Press the VOLTS/DIV CH1 or the VOLTS/DIV CH2 key again and set the variable function.

② Using the RANG knob, change the amplitude continuously.

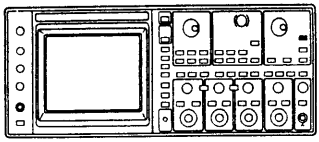
③ Press the VOLTS/DIV CH1 or the VOLTS/DIV CH2 key again and set back to the normal calibrated mode.

One point advice

- The deflection factor is :
  from : 5mV/div(1mV/div with ×5MAG)
  to : 5V/div
  By using the accessory probe, the deflection factor is :
  from : 10mV/div with ×5MAG
  to : 50V/div
- The setup of the deflection factor is displayed on the SCREEN.

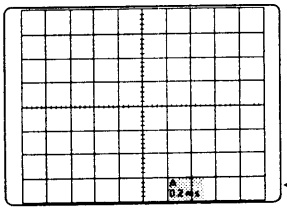
Operation Guide

Expanding and Compressing the Signal Horizontally



A SEC/DIV UNCAL

You can expand and compress the signal horizontally to obtain the suitable size of the signal for the measurement.



Selecting the sweep rate (A sweep)

① Push the SEC/DIV A key and set the **SEC/DIV**.

② Using the **RANGE** knob, select the sweep rate.

UNCAL (Variable function)

① Press the SEC/DIV A key again and set the variable function.

② Using the **RANGE** knob, change the sweep rate continuously.

③ Press the SEC/DIV A key again and set back to the normal calibrated mode.

One point advice

- The sweep rate is :
  from : 20ns/div(2ns/div with 10)
  to : 0.5s/div
- The setup of the sweep rate is displayed on the screen.

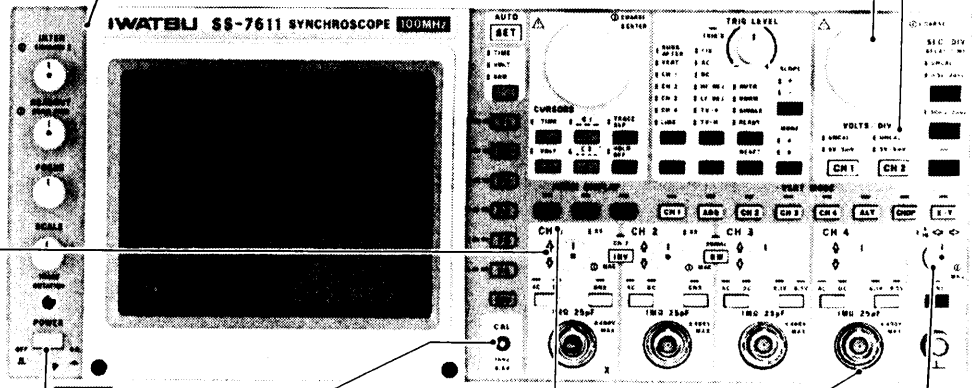
7. PANEL LAYOUT

Front Panel Layout

Adjusting the Display
- **INTEN** : trace intensity
- **ENHANCE** : magnified intensity
- **READOUT** : character intensity
- **BEAM FIND** : trace position finder
- **FOCUS** : display focus
- **SCALE** : scale illumination
- **TRACE ROTATION** : trace alignment

Controlling the vertical sensitivity (**VOLTS/DIV**), sweep rate (**TIME/DIV**) and delay time (**RANGE** knob)

Changing the signal amplitude (**VOLTS/DIV**)
CH1 CH2 :



Positioning the signal (**POSITION**)

Turning the power on and off

Calibrator output

Selecting the horizontal display (HORIZ DISPLAY)
- **A** : Main sweep
- **ALT** : alternate sweep
- **B** : Delayed sweep

INPUT

Positioning the signal horizontally
- ◯ : horizontal position
- X 10 : horizontal magnification
- FINE : fine position

MEMO

MEMO

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