

1. SELF CALIBRATION

(Take Out All Probes)

(Utility) → (System) → (SelfCal) → Start → (35 min Long → Status: Success 100%) → (Reset → Power-OFF → Power-ON)

2. CLEAR ALL USER SETTINGS

(DEFAULT) → (RESTORE...? → OK)

Obs: What you see on the screen is what you measure with the DSO. Any signal larger than what fits on the screen is not measured.

3. SET PROBE ATENUATION X1 or X10 – COUPLING DC or AC - CH-1

Probe: PVP2350: BW: 1X: DC to 35 MHz / 10X: DC to 350 MHz

Input Resistance: 1X: 1 MOhm ±1% / 10X: 10 MOhm ±1%

(SW-Chanel-1 → Lights up YELLOW) → (Attenuation → 10x) → (Coupling → DC) → (More) → (Fine ← off) → (Menu off)

4. SET “SCREEN SAVER TIME” and “Beeper”

(Utility) → (More) → (Screen Saver → (Screen Saver → Text) → (Time to Start → 5min) → (Menu off)

(Utility) → (Beeper → ON) → (Menu off)

5. REMEMBER LAST POWER-ON DEFAULTS

(Utility) → (System) → (Power On → Last) → (Menu off)

6. SHOW SCALE ON SCREEN (Horizontal / Vertical)

(Display) → (Show Scale → ON) → (Menu off)

7. SHOW VERTICAL (or other) MEASURE and INDICATOR (ON or OFF)

(Measure) → (Add) → (Touch Screen → Vertical) → (Vpp) → (X) (Close) → (Indicator → OFF) → (Menu off)

8. REMOVE ANY MEASURE INDICATOR

(Measure) → (Remove) → (All) → (Menu off)

(Measure) → (Remove) → (Remove → ONLY with Brown Mark) → (Menu off)

9. FREQUENCY COUNTER on SCREEN (Max Resolution)

(Measure) → (Analyse) → (Counter → ON) → (Measure → Frequency)
→ (Resolution → 6) → (Menu off)

Or: with (Touch Functions → Counter)

10. AUTO – FIX SIGNAL (Vertical and Horizontal) ON SCREEN

(Enter Any CH-1 SIGNAL) → (AUTO) → (Menu off)

11. SET TRIGGER SIGNAL (If Necessary)

(Enter Any CH-1 SIGNAL) → (Trigger Control → Rotate → Orange Line)

12. GI/GII AWG – EXAMPLES (with External BNC Cable)

(SET PROBE ATENUATION X1 – COUPLING DC - CH-1)

12.1 Enter GI - SQUARE WAVE Signal – 1 MHz - CH-1

Obs: (Amplitude) is in “Vpp”. Not in “Vp”

(GI) → (Wave → Square) → (Frequency) → (Set on Touch Screen → 1 MHz) →
(Amplitude) → (Set on Touch Screen Vpp → 1V) →
(Settings) → (Impedance → HighZ) → (AUTO) → (Menu off)

12.2 Enter GII - SINE WAVE Signal - 1MHz with AM Modulation - CH-1

Obs: (Amplitude) is in “Vpp”. Not in “Vp”

(GII) → (Wave → Sine) → (Frequency) → (Set on Touch Screen → 1 MHz) →
(Amplitude) → (Set on Touch Screen Vpp → 1V) → (AUTO) →
(GII) → (Settings) → (Type → Modulation) → (Type → AM) → (Waveform → Sine)
→ (Frequency) → (Set on Touch Screen → 10KHz) → (AM Depth → 80%) →
(Impedance → HighZ) → (AUTO) → (Menu off)

12.3 Enter GI - SINE WAVE Signal - 1MHz with FM Modulation - CH-1

Obs: (Amplitude) is in “Vpp”. Not in “Vp”

(GI) → (Wave → Sine) → (Frequency) → (Set on Touch Screen → 1 MHz) →
(Amplitude) → (Set on Touch Screen Vpp → 1V) →
(AUTO) → (GI) →

(Settings) → (Type → Modulation) → (Type → FM) → (Waveform → Sine) → (Frequency) → (Set on Touch Screen → 10KHz) → (DEVIATION → 100KHz) → (Impedance → HighZ) → (Menu off)

13. FFT (with Signal GI/GII in CH-1)

13.1 Enter GI Signal to CH-1 (See → item 12.1) (SQUARE WAVE – 1 MHz)

(Horizontal Scale → 5ms) → (Trigger → Rotate → Stop Signal on Screen) → (Verify → 500MSa/s → 25Mpts)

(Verify → Vertical Scale → 200mV) → (CH1 → OFF) → (Menu off)

Or: (Vertical Scale → 500mV) → (Vertical Position → Rotate → Signal Top of Screen)

(Math) → (Math1) → (Operator → Select → FFT) → (Operation → ON) → (AutoSetting) →

(More) → (Unit – dBm/dBV) → (X → Start-End) → (Start → Select → 0.000Hz) → (End → Select → 10MHz) → (Window → Hanning) →

(Peak Search) → (Peak Search → ON) → (Peak Number → 5) →

(Threshold) → (Rotate-Function-Knob-LEFT → Purple Line → Until See 5 Peak Number in the Math Table) →

(Table Order → Amp Order) → (Back) →

(More) → (Display Lable → ON) → (Library → FFT) → (Lable → FFT or Other Text) → (Menu off)

(Math) → (Math1) →

(Scale → Rotate-Function-Knob → 20U or 20dBV) →

(Offset → (Rotate-Function-Knob → 20U or 20dBV) → (Menu off)

(Touch Screen → Drag the Math Table to Any Position)

13.2 Enter GII Signal to CH-1 (See → item 12.2) - (SINE-1MHz-AM Modulation)

(Horizontal Scale → 5ms) → (Trigger → Rotate → Stop Signal on Screen) → (Verify → 500MSa/s → 25Mpts)

(Verify → Vertical Scale → 200mV) → (CH1 → OFF) → (Menu off)

Or: (Vertical Scale → 500mV) → (Vertical Position → Rotate → Signal to Top of Screen)

(Math) → (Math2) → (Operator → Select → FFT) → (Operation → ON) → (AutoSetting) →
(More) → (Unit – dBm/dBV) → (X → Span-Center) → (Center → Select → 1MHz) → (Span → Select → 50KHz) → (Window → Blackman) →
(Peak Search) → (Peak Search → ON) → (Peak Number → 3) →
(Table Order → Freq Order) →
(Threshold) → (Rotate-Function-Knob-LEFT → Purple Line → Around the Biggest Peak → Until See 3 Peak Number in the Math Table) → (Back) →
(More) → (Display Lable → ON) → (Library → FFT) → (Lable → FFT or Other Text) → (Menu off)

(Math) → (Math2) →
(Scale → Rotate-Function-Knob → 20U or 20dBV) →
(Offset → (Rotate-Function-Knob → 30U or 30dBV) → (Menu off)
(Touch Screen → Drag the Math Table to Any Position)

13.3 Enter GI Signal to CH-1 (See → item 12.3) (SINE-1MHz-FM Modulation)
(Horizontal Scale → 500us) → (Trigger → Rotate → Stop Signal on Screen) →
(Verify → 4GSa/s → 20Mpts)
(Verify → Vertical Scale → 200mV) → (CH1 → OFF) → (Menu off)
Or: (Vertical Scale → 500mV) → (Vertical Position → Rotate → Signal to Top of Screen)

(Math) → (Math4) → (Operator → Select → FFT) → (Operation → ON) → (More) → (AutoSetting) →
(More) → (Unit → dBm/dBV) → (X → Span-Center) → (Center → 1MHz) → (Span → Select → 100KHz) → (Window → Blackman) →
(Peak Search) → (Peak Search → ON) → (Peak Number → 11) →
(Threshold) → (Rotate-Function-Knob-LEFT → Purple Line → Until See 11 Peak Number in the Math Table) →
(Table Order → Freq Order) → (Back) →
(More) → (Display Lable → ON) → (Library → FFT) → (Lable → FFT or Other) → (Menu off)

(Math) → (Math4) →

(Scale → Rotate-Function-Knob → 20U or 20dBV) →

(Offset → (Rotate-Function-Knob → -5U or -5dBV) → (Menu off)

(Touch Screen → Drag the Math Table to Any Position)

14. FREEZE SCREEN

(SIGNAL / FFT On Screen) → (STOP/RUN) → (STOP/RUN lights up RED)

(To Switch OFF FREEZE) → (STOP/RUN) → (STOP/RUN lights up GREEN)

15. TAKE PICTURE OF THE SCREEN

(FREEZE SCREEN) → (Insert PENDRIVER) → (Quick → Save *.PNG)

16. INVERT PICTURE OF IMAGE TO SAVE in PENDRIVER

(Utility) → (More) → (Quick settings) → (Operation → Save Image) →

(Format → *.png) → (Invert → ON) → (Color → Color) → (Menu off) →

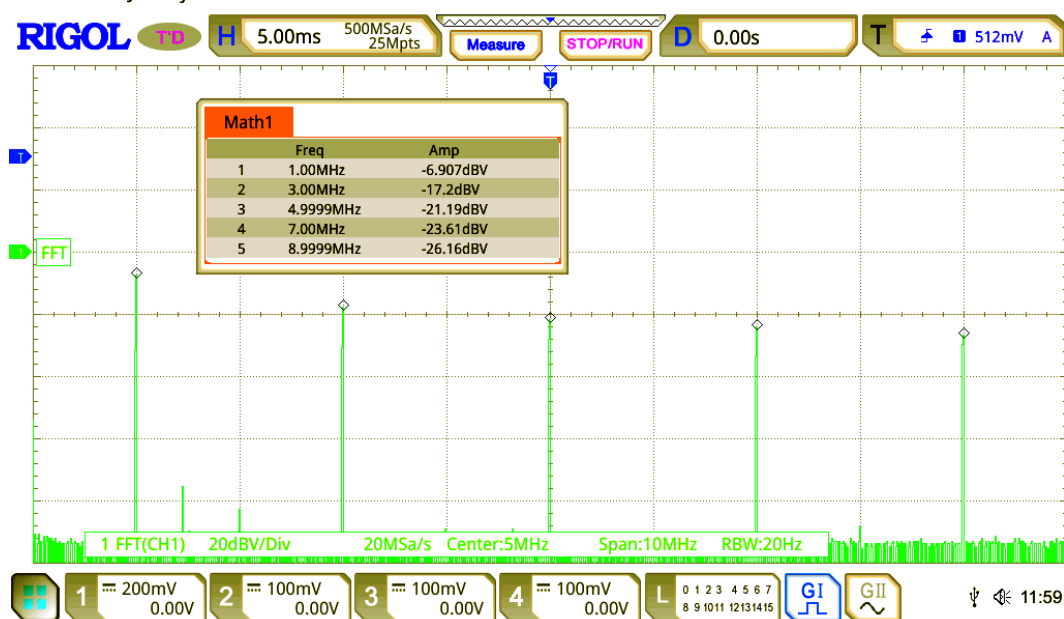
(Insert PENDRIVER) → (Quick → Save *.PNG)

16.1 (GI) → (CH-1) with (FFT and Signal in CH-1) → (PENDRIVER)

→ (See → item 13.1)

(FREEZE SCREEN) → (Insert PENDRIVER) → (Quick → Save *.PNG)

MSO5074 Sun January 02 11:59:55 2022



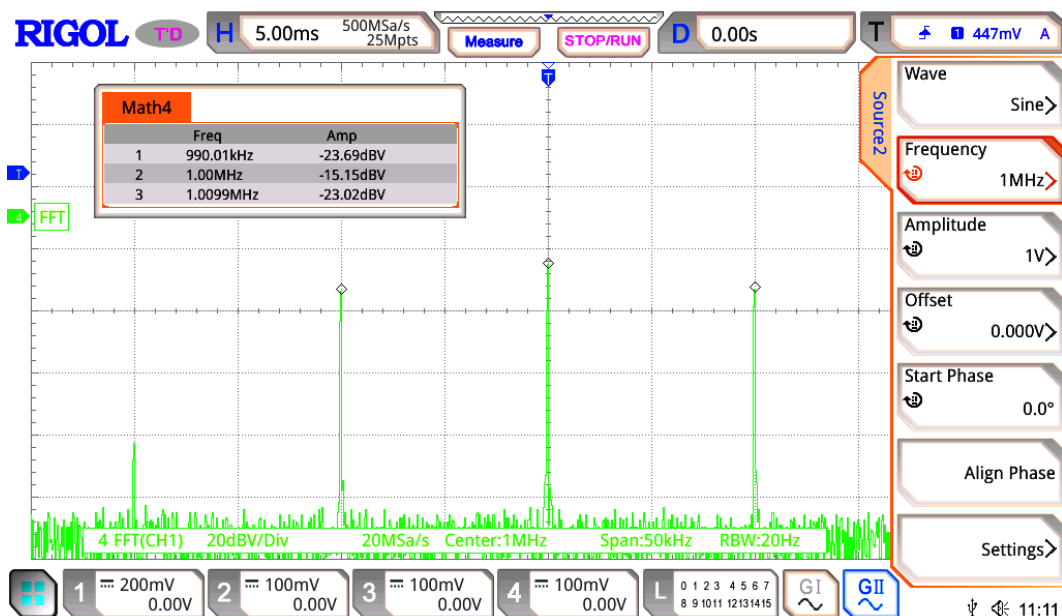
Enter GI - SQUARE WAVE Signal – 1MHz - CH-1

16.2 (GII) → (CH-1) with (FFT and Signal in CH-1) → (PENDRIVER)

→ (See → item 13.2)

(FREEZE SCREEN) → (Insert PENDRIVER) → (Quick → Save *.PNG)

MSO5074 Sun January 02 11:11:34 2022



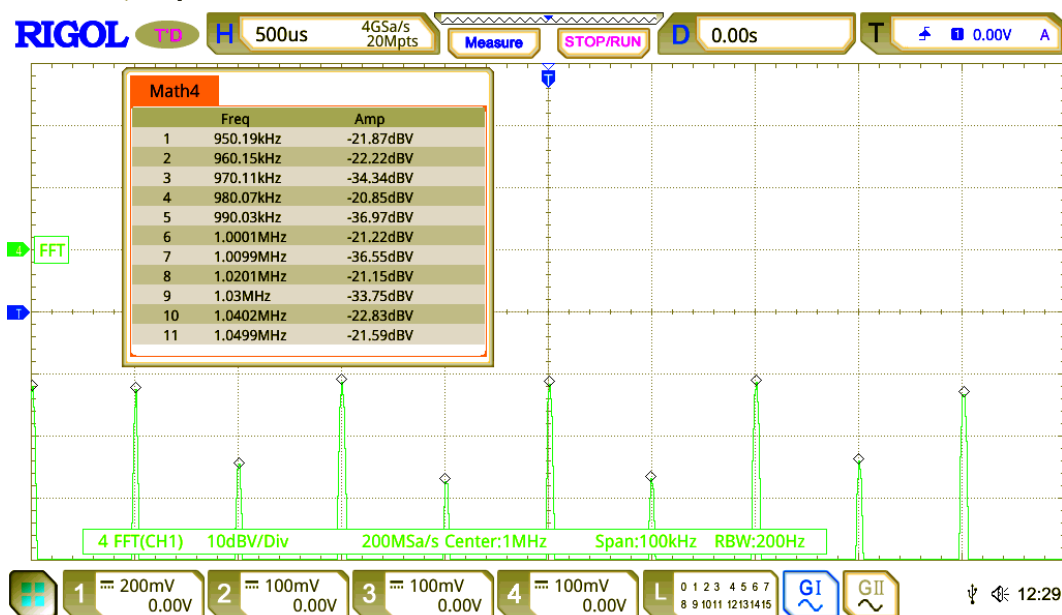
Enter GII - SINE WAVE Signal - 1MHz with AM Modulation - CH-1

16.3 (GI) → (CH-1) with (FFT and Signal in CH-1) → (PENDRIVER)

→ (See → item 13.3)

(FREEZE SCREEN) → (Insert PENDRIVER) → (Quick → Save *.PNG)

MSO5074 Sun January 02 12:30:29 2022



Enter GI - SINE WAVE Signal - 1MHz with FM Modulation - CH-1

Obs: $\Delta f = (f_n - f_{n-1}) = (f_2 - f_1) = (960.15\text{KHz} - 950.19\text{KHz}) = 9.96\text{ KHz}$