TinySA4 /

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Specification

User interface:
- Display resolution 480*320 pixels
- Screen diagonal 4"
- 16 bits per RGB pixels
- Resistive touch control
- Jog switch control
- USB serial port control
- Optional TTL USART port on the internal PCB
- Linear power supply to avoid switching noise.

Spectrum Analyzer spec:
- Input frequency range from 100kHz to 800MHz in normal mode and up to 6GHz with ULTRA mode enabled
- Input impedance 50 ohm when input attenuation set to 10dB or more.
- Selectable manual and automatic input attenuation between 0dB and 31dB in 1 dB steps when LNA not active
- Maximum +/-5V DC input
- Absolute maximum input level of +6dBm with 0dB internal attenuation
- Absolute maximum short term peak input power of +20dBm with 30dB internal attenuation
- Suggested maximum input power of +0dBm with internal attenuation in automatic mode
- For best measurements keep input power below -25dBm
- Input Intercept Point of third order modulation products (IIP3) of +15dBm with 0dB internal attenuation
- 1dB compression point at -1dBm with 0dB internal attenuation
- Power detector resolution of 0.5dB and linearity versus frequency of +/-2dB below 5.3GHz, +/-5dB between 5.3GHz and 6GHz
- Absolute power level accuracy after power level calibration of +/- 2dB
- Built-in optional 20dB LNA with Noise Figure of 5dB
- Lowest discernible signal without LNA at 30MHz using a resolution bandwidth of 30kHz of -102dBm
- Lowest discernible signal with LNA at 30MHz using a resolution bandwidth of 200Hz of -145dBm
- Frequency accuracy equal to the selected resolution bandwidth
- Phase noise of -108dB/Hz at 100kHz offset and -115dB/Hz at 1MHz offset
- Spur free dynamic range when using a 30kHz resolution bandwidth of 70dB
- Resolution filters with a width of 0.2, 1, 3, 10, 30, 100, 300, 600 and 850 kHz.
- On screen resolution of 51, 101, 145, 290 or 450 measurement points.
- Scanning speed of over 1000 points/second using largest resolution filters.
- Automatic optimization of actual scanning points to ensure coverage of the whole scan range regardless of the chosen resolution bandwidth
- Spur suppression option for assessing if certain signals are internally generated or actually present in the input signal
- Headphone output for listening to the demodulated audio (AM only). Stereo connector only, high impedance is louder, short protected

Signal Generator spec:
- Sine wave output with harmonics below -40dB of fundamental from 100kHz to 800MHz
- Output level selectable in 1dB steps between -110dBm and -20dBm
- Above 800MHz choice of two output modes:
  - Cleanest signal mode: square wave, up to 4.4GHz with coarse frequency steps and less accurate output level
  - Highest accuracy mode: reduced harmonics with possibly strong spurs up to 5.4GHz with frequency resolution equal to below 800MHz and fine output level steps.
- Level accuracy +/- 2dB up to 800Mhz between -72dBm and -18dBm, less accuracy below -72dBm, even less accuracy below -110dBm
- Output frequency resolution 57.2Hz
- Optional AM or FM modulation frequencies between 50Hz and 5kHz (AM) or 1kHz(FM) or sweep over selectable frequency span
- AM modulation depth between 10% and 100%
- FM deviation between 1kHz and 300kHz
- Optional output level sweep over maximum the entire output level range

Reference generator spec:
- Optional square wave output with fundamental at -35.6dBm connected to cal output
- Frequency can be set to 1MHz, 2MHz, 4MHz, 10MHz, 15MHz or 30MHz.

Battery spec:
- Charging time max 1 hour on 500mA minimum USB port or USB charger
- Operation on fully charged battery for at least 2 hours

HW versions and differences:
- V0.4.5.1 First HW version
- V0.4.5.1.1 Updated LCD screen for availability reasons