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# NEW**** WSSA**** NEW

***Description:***

The WSSA is a new weak signal source derived from the ApolLO 32 (A32) synthesizer developed by N5AC. The frequencies are preselected and are as accurate as the required 10 MHz source (internal or external) is. A complete document about the A32 can be found on our website in the Product Description section. It should be read for a complete understanding of the synthesizer. This WSSA document explains the A32 being utilized as a Weak Signal source or stand alone Microwave source.


The WSSA is a standalone signal source with a SMA RF output connector. It operates at any voltage source between 11 and 17 VDC @ 300 mA. To achieve the most accurate frequency possible, , the WSSA includes a second SMA connector ready to be connected to any high stability 10 MHz. signal source between -15 and +10 dBm. This is the standard configuration Part # WSSA –XXXX (XXXX= frequency in MHz.) for the single frequency model or WSSA-M (depicted above) for a multi-frequency (5 maximum) model. Also understand that one single frequency provides harmonics for all weak signal bands from 2.3 GHz. through 24 GHz. See the chart on the following page.

The WSSA is available with an internal 10 MHz. source by adding a "–I" after the standard part number. It is available for single or multiple frequency operation. This internal source will not be as accurate as an external source but may not be much of a problem for portable use when a signal source is used to check the performance of your receiver. All of the WSSA frequencies are listed in the table on the following page with their approximate power levels.

The harmonics of the 1152.022 or the 1200.500 MHz frequencies are generated and are achieved with a internal multiplication circuit. Again, see the chart for the details. If higher levels of the "harmonic " outputs are desired at specific frequencies, additional filtering and amplification will be required to be added externally.

To use, either connect an antenna or a suitable 50-ohm load to the RF connector. Power up the WSSA unit and notice the Red "On" light. This will be followed by the Blue Lock light (after a slight warm up time) if you chose the internal 10 MHz source option. If you chose the external 10 MHz. option, connect the 10 MHz source and the lock light will light. If you have a blinking Blue light, it indicates an un-locked condition. The output frequency will be as accurate as your external 10 MHz reference signal or after a brief warm up, as accurate as its gets with the internal source.

| *Band* | *Multiplier* | *WSSA Output Frequency and Output Power* | *Frequency and minimum Signal level* |
|---|---|---|---|
| 33cm | 1 | 902.100 MHz. +5dBm | 902.100 MHz. @ +5dBm |
| 33cm | 1 | 903.100 MHz. +5dBm | 903.100 MHz. @ +5dBm |
| 33cm | 1 | 915.000Mhz +5dBm | 915.000 MHz. @ +5dBm |
| 23cm | 1 | 1275.000 MHz. +5dBm | 1275.000 MHz. @ +5dBm |
| 23cm | 1 | 1296.100 MHz. +5dBm | 1296.100 MHz. @ +5dBm |
| 21cm | 1 | 1420.000 MHz. +5dBm | 1420.000 MHz. @ +5dBm |
| 13cm | 2 | *1152.022472 MHz. +5 dBm* | 2304.044944 @ -17dBm |
| 12cm | 2 | 1200.500 MHz. +5dBm | 2401.000 @ -20dBm |
| 9cm | 3 | *1152.022472 MHz. +5 dBm* | 3456.067416 @ -27dBm |
| 5cm | 5 | *1152.022472 MHz. +5 dBm* | 5760.112360 @ -43dBm |
| 3cm | 9 | *1152.022472 MHz. +5 dBm* | 10368.202248 @ -67dBm |

The frequency measurements shown were made with a GPS locked 10 MHz source. Accuracy at the base frequency (1152.022472 MHz) is within +/- 10 Hz. These results will vary depending on the internal sources temperature or your external sources accuracy. **CAUTION:** Do not operate this device without a 50 Ohm load for an extended period of time.

## Models and Pricing

| | | |
|---|---|---|
| WSSA-xxxx | Single frequency, external source required | $170 |
| WSSA-M | Multi-frequency, external source required | $190 |
| WSSAI-xxxx | Single frequency with internal source | $200 |
| WSSA-IM | Multi-frequency with internal source | $220 |

Substitute xxxx with one of the following 902, 903, 915, 1275, 1296, 1152, 1420 or 2401. For the M version please list the frequencies desired up to a maximum of 5.

All units are assembled and tested for Frequency and output level. A complete kit version is not available. The A32 circuit board is not available as a kit but assembled and tested boards are available as part number A32 for $139 (requires external source) or A32I for $159 (with internal source).

If you are interested in a Weak signal source for frequencies that are not listed or just want to buld a USB programmable synthesizer as a kit please see the original ApolLO – 1 circuit available thru Hicks consulting. Please see their website at http://www.n5ac.com/blog/?page_id=19