

Valon5009 synthesizer's Frequency Response Consideration

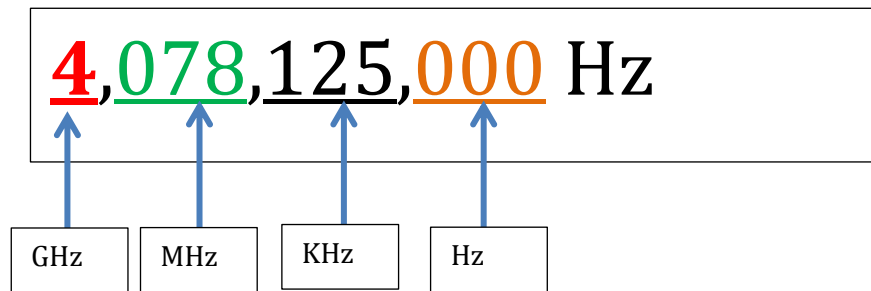
Name	Type	Address	Value	Decimal
freqFloat	float	0xA001FF78	4.07812506E9	332941632
(* [100]) message	unsigned char*[100]	0xA001FF6C	"S 1;F ?\r\nF 4078.125 MHz; // Act 4078.125 MH\	23656
Frequency	unsigned long long*	0xA001FFA0	0xA001FFC8	2684485576
rounding	UINT32	0xA001FF74	0x00000038	56
<Enter new watch>				

Valon5009 synthesizer Frequency Response had some difficulties to read the exact pre-assigned and new setting frequency.

The Valon5009 Frequency synthesizer response is in MHz and has frequency trimming effects. Valon Provides ± 10 ppm trimming range to the internal VCTCXO with 8-bit resolution. This trims range makes small frequency offset on the synthesizer output.

For example in 3mm Receiver the Synthesizer frequency is assigned to 4.078125 GHz. If we convert the frequency in Hz it would be 4,078,125,000 Hz. Even if our input from IGUI is in Hz and the valon response is in MHz a trimming effect on the frequency output has been taken as shown on the Figure.

Let us see accordingly with the frequency position.



If the valon response frequency will round to the 10 KHz position of the frequency, this position value is rounded to the nearest integer value and converts the given Hz format frequency into MHz frequency format. If this is the case the 4,078,125,000 Hz value is rounded to 4,078,130,000. But this is not the exact frequency value that we expected.

If we set the round frequency position to 1 KHz of the frequency, the value is rounded to the nearest integer value. And therefore, the 4,078,125,000 Hz value is rounded to 4,078,125,000 Hz. This is the exact frequency value that we expected.

But if we set the frequency to 4,078,125,600 Hz, the response will be 4,078,126,000Hz. This response is not correct.

In the above Figure we observe that the exact Valon response for the assigned frequency is 4,078,125,060 Hz. This indicates that trimming effects has an offset of 60 Hz.

N.B: In order to get the exact frequency response from the valon, we need to know the exact higher accuracy of the frequency.