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Different between VSG6G1C and VSG6G1

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VSG6G1 performance

VSG6G1 is nice product.

- TSG6G1 is first product with tiny product size (100mm*25mm*25mm), but it has full function of RF vector signal generator.
- Frequency range can cover 1MHz to 6.2GHz..
- VSG6G1 have pulse modulation, frequency sweeping, frequency hopping, I&Q modulation. Some modulation can be working at same time, so that most complex signal can be simulated. Such as TDD signal, GSM signal frame.
- VSG6G1 can be offline to work, just stored the signal statue into USB dongle, then plug 5V power source to work.
- One of our customer wrote 5 reviews of VSG6G1 and release it at YouTube:
  https://www.youtube.com/watch?v=13fRM0DRmvM

Shortage of VSG6G1

- When TSA6G1 go into market, most of customer more like VSG6G1, but we found some shortages in the VSG6G1, we have to overcome these shortage to make VSG6G1 more nice.

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VSG6G1 performance

The VSG6G1 shortage are:

- Frequency resolution is only 1KHz, and frequency accuracy is 2.5PPm. So that frequency is not more accuracy in some application.
- Amplitude range is only from -20dBm to 10dB (Band0, Band1) -30dBm to 0dBm (Band2). It can not generate small signal level to measure the receiver sensitivity
- VSG6G1 have nice I&Q modulation at Band 1 (30MHz ~2.2GHz), but I&Q modulation performance will be dropped at Band 0 and band 2.
- Spurious in VSG6G1 is more high in Band 0 and band 2
- The phase noise will be dropped when frequency working at PPL fractional mode. It caused by PLL fractional mode.
- So that we have to launch up new product to improve this performance and keep all VSG6G1 nice feature.

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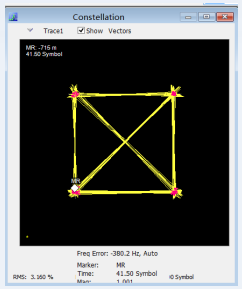
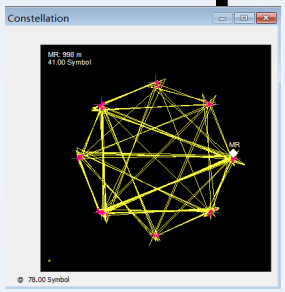
VSG6G1 performance



4PSK



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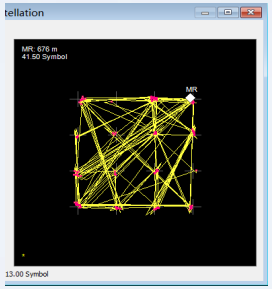
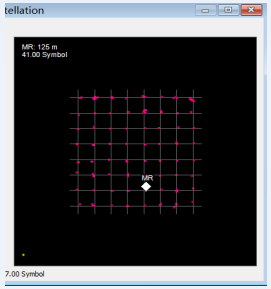
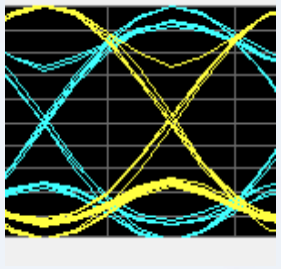


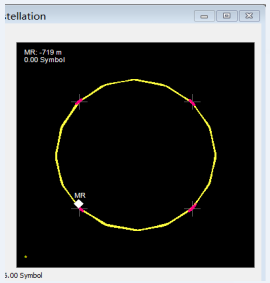
16QAM



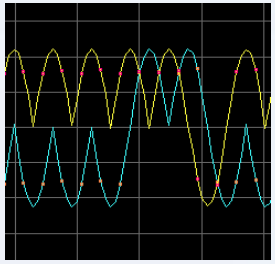
64QAM



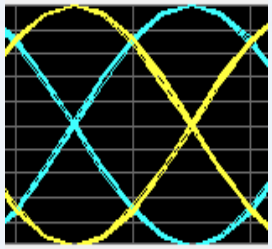
GMSK eye diagram



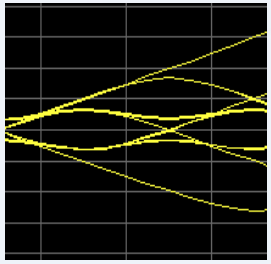
MSK constellation



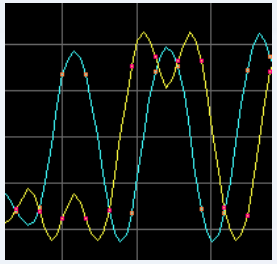
MSK I&Q waveform



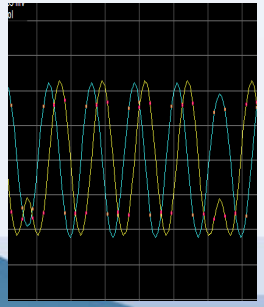
MSK eye diagram



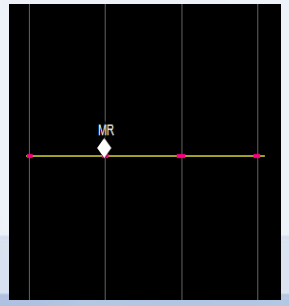
GMSK trellis diagram



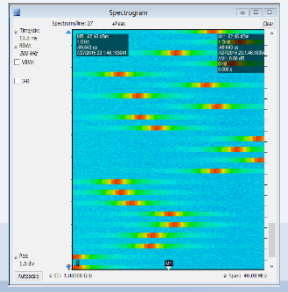
GMSK I&Q waveform



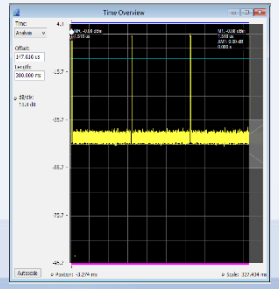
GFSK I&Q waveform



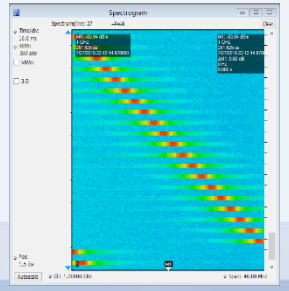
4FSK constellation



Hopping with pulse Mod/I&Q data



GSM frame



Sweeping with pulse Mod/I&Q data

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VSG6G1C performance

VSG6G1C improvement

- VSG6G1C frequency resolution is 1Hz, and frequency accuracy is 0.5PPm
- VSG6G1C Amplitude range is from -100dBm to 10dBm (1MHz~4GHz) and -100dBm to 0dBm (4GHz~6.1GHz). Amplitude setting resolution is changing from 1dBm to 0.25dB.
- VSG6G1C have same performance on I&Q modulation when frequency from 1MHz to 6.1GHz.
- Spurious in VSG6G1C have more improved comparing to VSG6G1.
- The pulse modulation is been improved in pulse width, the pulse width reduce to 0.25us. It can be used to simulate radar signal.
- The phase noise has been improved when DLL working at fractional mode.

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VSG6G1C performance

VSG6G1C new function

- VSG6G1C add low band function
- The low band can output low frequency (100Hz to 1MHz) from N connector
- Low band function can be used as audio signal generation and low frequency arbitrary generator
- Low band can easy to generate SIN waveform .
- Low band can generated I&Q modulated signal, so that a lot of modulation signal can be generated.
- Using Raw data file, the more complex signal can be generated, such as DTMF signal, Stereo FM base band signal.
- The FM AM and PM function is more useful, it can generated modulated signal based on any low signal, not only SIN wave, so that Stereo FM base band signal can be use FM modulation to generated RF FM stereo signal which can be received by any FM radio.