Solving next generation communications

TABOR ELECTRONICS

Marketplace conditions

The communications market is evolving to higher bandwidth applications. Technologies such as WiFi-6, 5G and UWB are creating a need in the marketplace for instrumentation, that has the ability to tune to 9GHz, and play signals out with bandwidths from 160MHz to more than 2000MHz (2GHz) and beyond (automotive radar).

Target customers, markets and opportunities

For Technology Research, Chipset Design and R&D customers in the early stages of development of wide bandwidth technology the Tabor Proteus Series provides signal generation bandwidths of up to 4GHz. Currently wide bandwidth is unaddressed or requires an AWG and a signal generator combination – which creates connectivity and c alibration issues.

Key Product features

- Frequency Range up to 9GHz
- Baseband and Modulation Bandwidth 4.5GHz
- Max O/P Power 5dBm
- Analog IQ or Direct to RF with built-in IQ Modulator
- Dynamic Range -80dBc
- ACP 20MHz -65dBc
- MIMO: Each unit has a minimum of two channels, utilizing the PXI format allows for multiple configurations to support tens of synchronous, coherent channels.
- Connectivity to MATLAB – for Signal creation

Competitor analysis

Bandwidth

Keysight and R&S traditionally own this market with Vector Signal Generator (VSG) instrumentation such as the X-Series signal generators N5182B and N5172B from Keysight and SMBV100B from Rohde & Schwarz with frequency ranges up to 6GHz and Modulation Bandwidths up to 200MHz – do not fill the emerging requirements for the communications design engineer. The HW cannot generate the Signals Required!

MIMO

Configuring instrument units is expensive and space consuming the PXIe format of Proteus provides multiple channels in a very small form factor.

Trade-off

The Bandwidth trade-off is that an AWG will not have the same amplitude range as a Vector Signal Generator. This can be achieved with using external attenuators and amplifiers. VSG are simple to use - it is easy to set frequency and then call the appropriate waveform within a few button presses. With an AWG the customer needs to understand concepts such as Sample Clocks and multiple Nyquist operations. Frequency range for both Keysight (M8190A) and Tektronix (5200) AWG's is limited to <5GHz so they are unable to generate directly to RF at the required frequencies. The carrier phase for the AWG5200 DUC cannot be controlled so it cannot be used in applications like Phase Array Radar, MIMO or Beamforming.

Customer and segment specific propositions

TABOR ELECTRONICS

Fill your bandwidth gap

For the commercial communications engineer developing next generation RF products Proteus provides unprecedented Bandwidth capability, with MATLAB connectivity any next generation waveform can be generated.

Objection management

AWG

AWG are more complicated to use! – we'll give you full technical support (training, demos, application notes etc.)

What about amplitude range? – Using external attenuators or amplifiers can help.

What about Dynamic Range and ACP? – a state of the art measurement for 20MHz is approximately -65dbc – which Proteus achieves.

Golden questions

What type of signal do you need to create – is it wider than 160MHz/200MHz?

How many synchronous/coherent channels do you need?

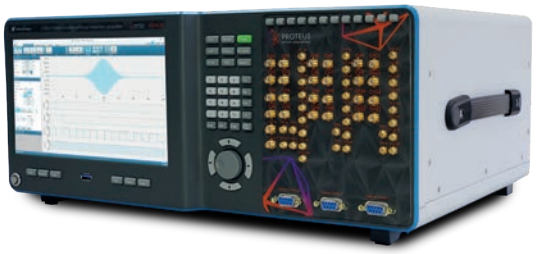
What frequency range are you interested in? Most wireless applications are less than 9GHz.

What range of amplitude do you require?

Is bandwidth and Amplitude range a trade-off you can live with?

Do you use MATLAB ?

How do you verify MIMO systems?



Additional information

On-line

- Arbitrary Waveform Generators - Proteus Series
- Generating and Measuring Communications Signals with the Proteus AWT
- Direct Generation/Acquisition of Microwave Signals

On-line

- Wireless & Communications – application video demos
- Real Time Waveform Streaming using direct to RF Arbitrary Waveform Transceivers
- Wide Band IQ – Next generation signals such as 5G and WiFi-6 wide analog Bandwidths with Tabor's Proteus AWT
- Real Time Waveform Streaming using direct to RF Arbitrary Waveform Transceivers