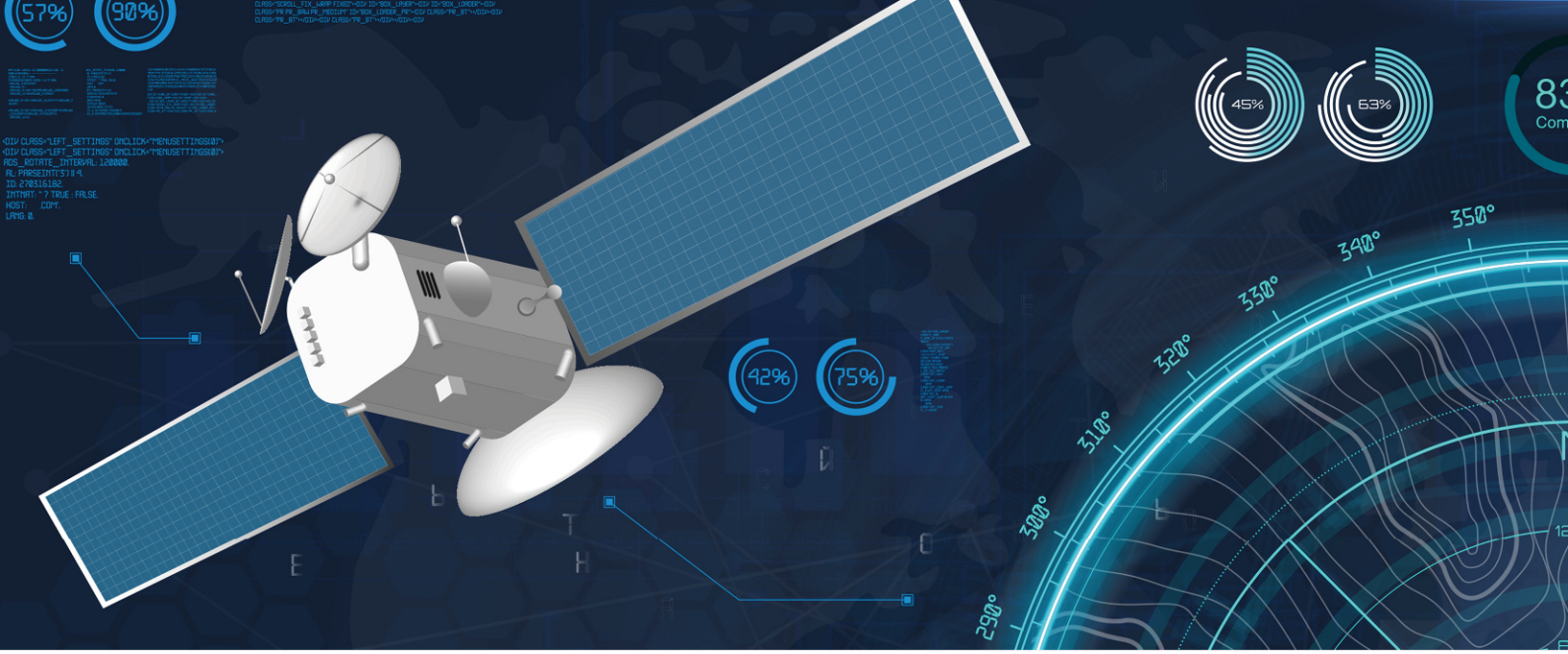
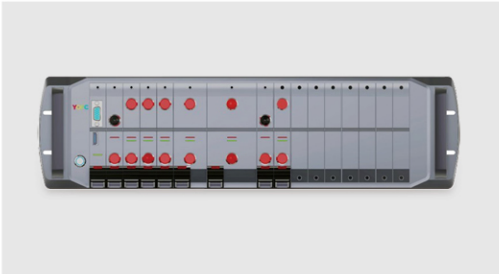


Modular RF Optical Delay Line System

YOFC modular RF optical delay line system is capable of achieving true-time delay of broadband microwave signals with high precision, tunability, and scalability. Comparing with the conventional microwave coaxial or waveguide based solutions, the system possesses multiple advantages, such as wide frequency range, high consistency over frequency, good repeatability, low loss dependence on delay values, and flexible scalability. The system adopts pluggable blade modular design, which mainly consists of a 3U 19” rack chassis, RF optical transceiver module, multiple fibre-optic delay module, optical amplifier module (optional), and control module. The true-time delay figures can be configured onsite or remotely.

Characteristics

- High accuracy progressive delay
- Blade modular design
- Easy scalability of rf frequency range and delay
- Optional optical amplifier
- External auxiliary delay options
- Standard 19" rack-mount
- Remote status monitor and control



Applications

- Radar system testing
- Phased array antennas
- Phase noise testing
- Signal processing
- Test & calibration labs

Specifications

Parameter	Specifications	Note
Operational Frequency (Hz)	100M~18G	
Delay Range (μs)	2~128	Customizable
Delay Step (μs)	2.0	Customizable
Delay Accuracy (‰)	1.0	
Progressive Delay Number (Blade Module Number)	6	Customizable
Switching Time (ms)	<2.0	
RF Gain (at 128μsdelay) (dB)	⩾-20	Higher gain is available
Dynamic Range (dB·$Hz^{2/3}$)	98	
Amplitude Flatness (dB)	⩽±3.0	
Noise Figure (dB)	⩽48	Lower is available
1dB Input Compression (P1dB) (dBm)	⩾15	
Optical Wavelength (nm)	1310 Band	1550nm Optional
Communication	RS232	Ethernet is available
Auxiliary Delay Connectors	FC/APC	Customizable
RF Connectors	SMA	RF Frequency Dependent
Dimensions	3U Standard	
Power Supply (V AC)	220	