

Model Specifications

Model #	Part	Frequency Range	Notes
02-0492-01	Acquisition Unit	350 kHz - 500 MHz	Compatible with all antennas
02-0255-01	Acquisition Unit	40 kHz - 2 MHz	Compatible with all antennas
02-0494-01	RF Antenna - 1x	40 kHz - 500 MHz	E and B Channel with phases
02-0495-01	RF Antenna - 100x	40 kHz - 60 MHz	10x Voltage & 100x Current Channel

General Specifications

Antenna Power	5 Vdc, 4.1 mm jack
Antenna Form Factor	[40 mm x 40 mm x 40 mm] & custom
Antenna Communication	2 x SMA coaxial cables
Acquisition Unit Power Requirements	24 Vdc, 0.5 A, 4.1 mm jack
Acquisition Unit Interfaces	Micro USB, Serial, RJ45 (x2)
Acquisition Unit Protocols	USB, HTTP Web Service, EtherCAT, Ethernet/IP Others on request
Acquisition Unit Form Factor	[122 mm x 70 mm x 41 mm]
Connectivity (Impedans Software)	USB 2.0, Ethernet
Communication Protocols (Standard)	USB 2.0, HTTP Web Service
Communication Protocols (OEM Options)	EtherCAT, EtherNet/IP, Serial, RS232
Parameter Report Rate (Standard)	Adjustable; USB up to 500 S/s, Ethernet up to 10 S/s, ECAT up to 50 S/s, Serial up to 10 S/s report rates
Acquisition Unit Pulse Synchronisation	External sync: TTL input Internal sync: Software level trigger

Measurement Parameter Specifications

# Fundamental Frequencies (F_0)	Choose 5 from the fundamental frequency range
Fundamental Frequency Range	350 kHz - 240 MHz or 40 kHz - 400 kHz
Harmonic Frequency (F_N) Range	350 kHz - 500 MHz or 40 kHz - 2 MHz
# Harmonic Frequencies (F_N)	≤ 15 per fundamental (64 max.), ≤ 32 simultaneously
Output Parameters at each frequency	V & I [UNCALIBRATED], phase, harmonic phase
Pulsed RF Profiling	1 microsecond resolution
In-Pulse Parameter Monitoring	Up to 2 points in the pulse [standard software], arbitrary number of points using API
Pulsed RF Range	10 Hz to 100 kHz
Extra Features	RF Waveform Reconstruction
V channel range	Arbitrary [adjustable gain]
I channel range	Arbitrary [adjustable gain]
Phase Range and Resolution [Available only when V & I channel are locked]	± 180 degrees with 0.02 degrees resolution
Harmonic Phase Range and Resolution	± 180 degrees with 0.02 degrees resolution

Demonstrated Applications

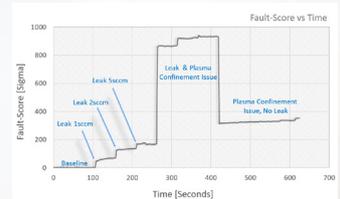
Clean Endpoint Detection	Etch Endpoint Detection
Wafer Misplacement Detection	Plasma Impedance Monitoring (PIM)
Air Leak and Gas Contamination Detection	Process-to-process repeatability monitoring
Hardware Degradation Detection	Match box failure and more



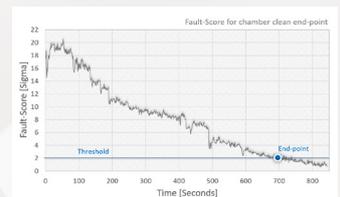
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02-0255-01



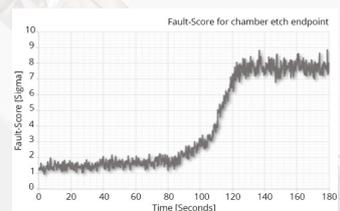
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02-0495-01



Leak Detection with
Fault Score



Fault Score for
Chamber Clean Endpoint



Fault Score for
Chamber Etch Endpoint