

Radiated Emissions Measurements and Analysis
PXE (Model N9048B) + EPX/RE
Accelerated Time Domain Scan Solution



VALUE PROPOSITION - ACCELERATION

Substantially Reduce Total EMI Evaluation Time



Wide FFT Bandwidth x Gapless Measurement x Automatic Measurement
 With the PXE & EPX/RE solution, anyone can conduct accurate measurements in a short time, and no noise will be missed.

A new and revolutionary EMI measurement and evaluation solution is now available. This solution utilizes the world's first measurement technology called "Accelerated Time Domain Scan (A-TDS)" and new CISPR32-based automated radiated emission measurement/analysis software. A-TDS is an optional feature for the new Keysight Technologies' "PXE (Model N9048B)" EMI receiver. What makes this new automatic measurement even more groundbreaking is the addition of TOYO's new Radiated Emissions Measurements and Evaluation Software named "EPX/RE." The EPX/RE software was developed based on TOYO's 35 plus years of experience in developing EMC measurement software. By combining the PXE and EPX/RE, you can overcome many radiated emissions measurements challenges.

This latest automatic measurement tool is not only highly accurate and reliable, but also greatly helps reduce the total EMI evaluation time.

ACCELERATED TIME DOMAIN SCAN

This is a new world's first measurement technology.

- Time domain scan having a wide FFT bandwidth of 350MHz
- Gapless measurement that constantly monitors the entire spectrum within the FFT bandwidth

Please see the next page for more details.

PXE

The PXE is a high-end EMI receiver that uses the PXA as a base and fully complies with CISPR 16-1-1 and MIL-STD-461. With the A-TDS option, EMI measurement can now be performed with very high reliability.

EPX/RE

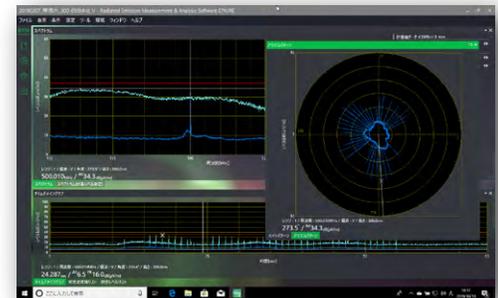
The EPX/RE is TOYO's new radiated emissions measurements and analysis software for consumer equipment. Developed based on our existing and very popular EMI software series EP9/7/5, it introduces an automatic measurement sequence optimized for A-TDS, with high flexibility and functionality.



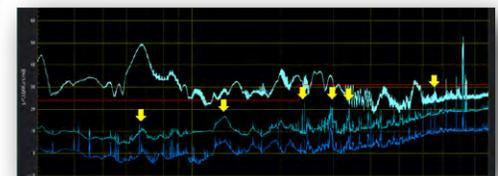
REDUCTION IN EMI EVALUATION TIME

The PXE and EPX/RE help reduce the number of man hours that are required for the follow-up process after manual measurement (detailed checks, re-tests) by capturing all EMI noise including intermittent and other complex noise.

The source of noise can be identified easily with the improved accuracy of angular data obtained from the azimuth pattern.



By using QP detector for pre-scan, you can easily select or narrow down the noise that requires final evaluation.



TECHNOLOGY

Most advanced technology enabling highly reliable measurements

World's first measurement technology implemented in PXE Accelerated Time Domain Scan (A-TDS)

Accelerated Time Domain Scan (A-TDS) is the world's first measurement technology introduced in the PXE. Combining the substantially enhanced FFT bandwidth and gapless measurement, where noise is constantly monitored within the FFT bandwidth, the PXE allows you to conduct highly accurate and reliable measurement without missing any noise.

AN ENHANCED FFT BANDWIDTH OF 350MHZ

The time domain scan (TDS) can be performed in the widest-ever FFT bandwidth of 350MHz. It takes only 3 steps to complete a TDS measurement from 30MHz to 1GHz.

GAPLESS MEASUREMENT

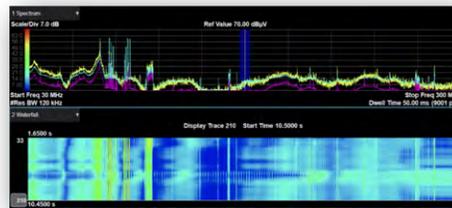
No measurement gap (time when noise is not monitored) exists as the spectrum in the entire FFT bandwidth is constantly monitored. It is ensured that all noise is captured including easy-to-miss noise such as impulse and intermittent noise.

REAL TIME SCAN MODE

This is a measurement mode newly developed and implemented for A-TDS.

Optimized for gapless measurement, this mode updates the data at all frequencies within the band at the same time. The Dwell Time can be configured to be as short as 20ms, which allows you to monitor quick noise response in QP detection. The PXE provides not only the Spectrum view where you can view the noise behavior with the frequency axis, but also Time Domain view and Waterfall view, which support you in analyzing the noise and planning countermeasures.

REAL TIME SCAN SCREEN



EPX/RE introducing a variety of new technologies and showcasing the highly reliable automatic measurement sequence

The automated measurement sequence has been developed so as to best utilize the Real Time Scan mode of A-TDS. By design, improvements are made at each and every step of the measurement to avoid missing noise.

QP PRE-SCAN

Using the Real Time Scan in the scan measurement process along with the QP detector ensures that you will pick up only the noise requiring the final evaluation.

NOISE CHARACTERISTIC ANALYSIS

The EPX/RE accurately analyzes the temporal behavior of noise by taking advantage of gapless measurements and determines the best parameters for final measurement of each noise. The measurement time as well as the method is optimized.

AUTOMATIC MEASUREMENT SEQUENCE

Scan measurement → Noise evaluation → Position search → Final Measurement

RTS FINAL MEASUREMENT

When searching for the position where the radiated noise level is at its maximum and conducting final measurement, measurement is done not only at one frequency of the noise under evaluation but also at nearby frequencies using the Real Time Scan (RTS). With this measurement, you will not miss a higher level of noise even if such noise is hidden around the target noise.

AUTOMATIC COMPLIANCE JUDGMENT

We are aware that an enhanced bandwidth of the pre-selector (nearly equal to FFT bandwidth) makes it difficult to comply with the pulse response characteristics requirements of CISPR 16-1-1 at low pulse repetition frequencies. The EPX/RE, however, automatically adjusts the FFT bandwidth so that the measurement is always in compliance with the relevant standards. So, no worries - a combined solution of the PXE and EPX can also be used for compliance measurement.

PXE(N90448B) Configuration and Options

BASE MODELS:

- N9048B-503: 2Hz - 3.6GHz
- N9048B-508: 2Hz - 8.4GHz
- N9048B-526: 2Hz - 26.5GHz
- N9048B-544: 2Hz - 44GHz

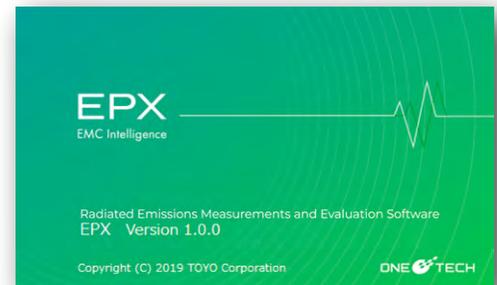
Select the base model that covers the suitable frequency range for the applicable standard and your EUT.

A-TDS OPTIONS:

- N9048B-WF1 - **Wideband digital IF** provides wideband digital IF hardware to support Time Domain Scan capabilities; licensed as N9048B-WF1; also enables Option B25 and B40
- N9048BTDSB - **Time domain scan** provides high-overlap FFT scanning for fast signal capture and measurement; requires Option WF1
- N9048BWT2B - **Wideband time domain scan, optimum detection** provides Accelerated Time Domain scan with 350 MHz acquisition bandwidth and gapless Real Time Scan in 350 MHz bandwidth; requires Option WF1 and N9048TDSB

EPX/RE Operating Environment

- OS:** Windows 10 Professional 64bit
- CPU:** 1.5GHz or higher (Core i7 or higher recommended)
- Memory:** 16GB or higher recommended
- Storage:** 512GB SSD for system drive (minimum requirement); additional 2TB HDD for data storage (recommended)
- Display:** 1920 x 1080px or better
- Driver:** National Instruments VISA
- Others:** Microsoft Office 2019/2016/365 (for Excel & Word Report feature)





PXE(N9048B) Specifications

Frequency range	2Hz - 3.6/8.4/26.5/44GHz	
Measurement uncertainty	Spectrum analyzer	Receiver
9kHz - 10MHz	+/- 0.31 dB	+/- 0.44 dB
10MHz - 1GHz	+/- 0.20 dB	+/- 0.31 dB
1GHz - 3.6GHz	+/- 0.20 dB	+/- 0.31 dB
3.6GHz - 18GHz	+/- 0.50 dB	+/- 0.65 dB
18GHz - 26.5GHz	+/- 0.80 dB	+/- 0.95 dB
TDS frequency range	2Hz - 26.5GHz (A-TDS = OFF) 2Hz - 3.2GHz (A-TDS = ON)	
Max. FFT bandwidth	20Hz - 30MHz bandwidth	30MHz (A-TDS = OFF)
	30MHz - 3.2GHz bandwidth	59MHz (A-TDS = OFF) 350MHz (A-TDS = ON)
Real Time Scan bandwidth	350MHz max.	
FFT overlap	> 92%	

EPX/RE Features

STANDARDS: CISPR11, CISPR14-1, CISPR15, CISPR32 compliant

SPECTRUM MEASUREMENT FEATURE:

- Measurement with time domain scan
- Real time data acquisition using Clear/Write trace of time domain scan
- Gapless data acquisition using real time scan
- Receiver scan measurement
- Measurement using the spectrum analyzer's MaxHold
- Real time data acquisition using the spectrum analyzer's Clear/Write trace
- Calculation of average value with Clear/Write trace of the spectrum analyzer
- Re-measurement of certain frequency ranges

POWERFUL MEASUREMENT/ANALYSIS FEATURE:

- Table scan measurement
- Mast scan measurement
- Step measurement
- Simultaneous scan measurement
- Display of height and azimuth pattern smoothing
- Option to specify the number of pick-ups in each frequency range
- Ability to conduct final measurement using time domain scan
- Real-time display of level obtained in final measurement
- Output to Excel/Word report
- Output in PDF format
- Time domain graph
- Spectrum graph comparison
- Feature to list the peak frequencies that exceed the threshold
- UI for manual operation of spectrum analyzer and EMI receiver

* The purchase of maintenance service contract allows you to use the latest version of software while the contract is in effect.



TOYOTEch

42840 Christy Street, Suite 110, Fremont, CA 94538
 Phone: 510-438-9548 | E-mail: info@toyotechus.com
<http://www.toyotechus.com>