

Operation Environment

OS	Windows XP Professional, Windows Vista, Windows 7
CPU	Celeron® / Pentium4® 1GHz or faster
Memory	1 GB or more
Disk space	100 MB EMISStream system + data file space (200 MB or more recommended)
Other	Microsoft Excel 2003 or later

PCB Layout CAD Interfaces

Cadence Design Systems: Allegro, OrCAD Layout

Mentor Graphics: Board Station, Expedition PCB, PADS Layout

Altium: Altium Designer

Zuken: CR-5000 Board Designer

EMISStream

Standard

- EMI Design Rule Check
- Plane Resonance Analysis

EMC Expert (Option)

- Estimated Radiation Display
- Far Field Calculation
- Multilayer Resonance Analysis
- Custom Parameters

MW STUDIO* I/F (Option)

*EMC Expert Option is for professional use.

Empowered by Innovation

NEC

EMISStream

EMI DESIGN RULE CHECK and PLANE RESONANCE ANALYSIS

Distributors

USA



TechDream, Inc.
20370 Town Center Ln. #250
Cupertino, CA 95014
Tel: +1-408-483-5413
Email: US_Sales@tech-dream.com
Web: www.Tech-Dream.com

Singapore



FTD Solutions Pte. Ltd.
150, Kampong Ampat
#04-01, KA centre
Singapore 368324
Tel: +65-6744 9789
Fax: +65-68461663
Web: www.ftdsolutions.com

India



FTD Infocom PVT. LTD.
#7, 2nd Floor, 100 Feet Road,
17th Main, 5th Block, Koramangala,
Bangalore 560 095, INDIA
Tel: +91-80-4260 0900
Fax: +91-80-2550 6776
Email: info@ftdinfocom.com
Web: www.ftdinfocom.com

Taiwan



Mits Science Corporation
10F, No.85, Sec.1,
GuangFu Rd.,
San Chung City,
Taipei County, Taiwan, R.O.C.

Tel: +886-2-2999-3355
Fax: +886-2-2999-9196
E-mail: sales@mits.com.tw
Web: www.mits.com.tw

Korea



P&I Electronics
101-1410, Digital Empire2,
486 Shin-Dong,
Yeongtong-Gu, Suwon-si,
Gyeonggi-Do 443-734 Korea

Tel: +82-31-695-5707
Fax: +82-31-695-5708
E-mail: lyh3736@pnisolution.com
Web: www.pnisolution.com

Hong Kong



KGS Technology Ltd.
Workshop S-T, 6/F, Valiant
Ind. Bldg., 2-12 Au Pui Wan
Street, Fotan,
Hong Kong

Tel: +852-2637-1886
E-mail: sales@kgs.com.hk
Web: www.kgs.com.hk

All trademarks, trade names,
and service marks referenced
herein belong to their
respective companies.

NEC Corporation
Embedded System Solutions Division
21-6, Shiba 5-chome, Minato-ku,
Tokyo 108-8423 Japan
Tel: +81-3-3798-6402
E-mail: info@embedded.jp.nec.com



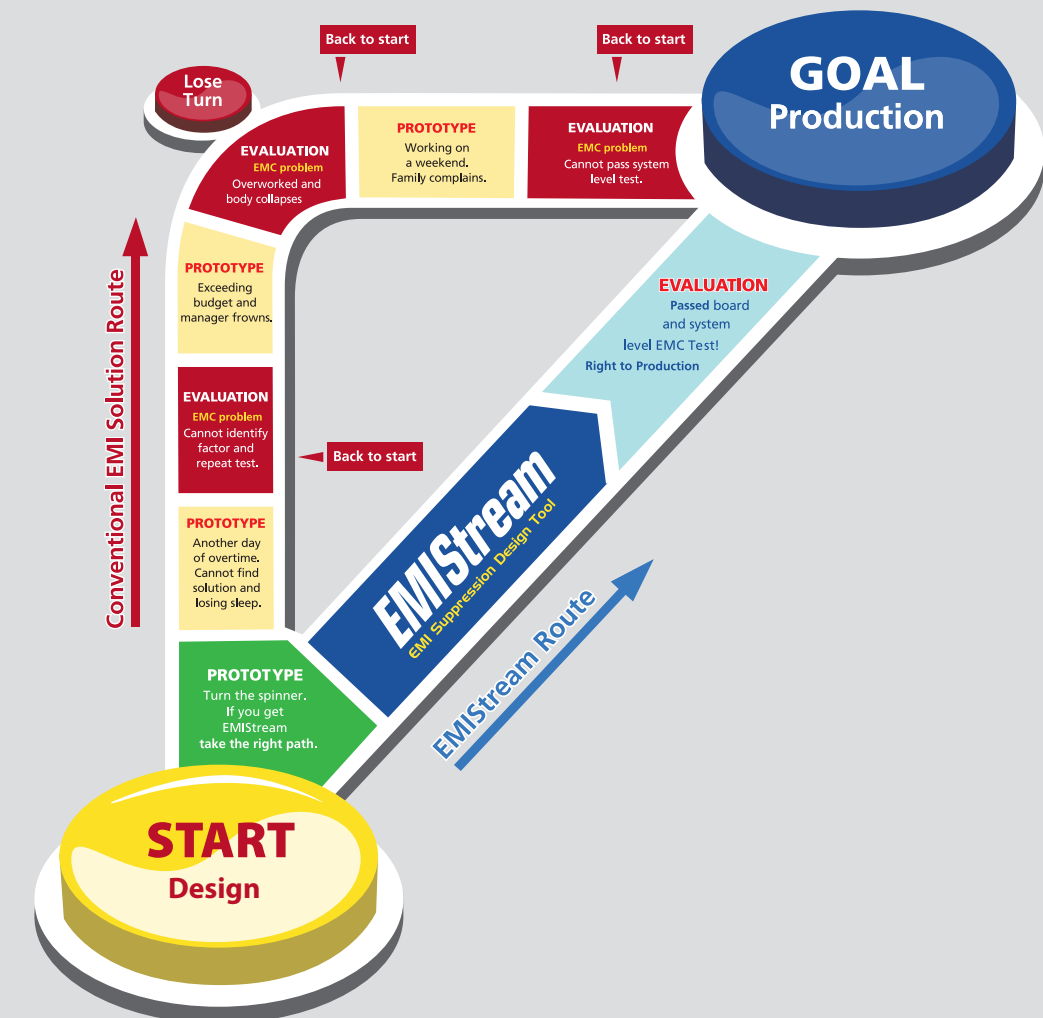
Reduce the Noise - Optimize Design

EMISStream puts you on the road to success.

EMISStream is an EMI Design Rule Check and Plane Resonance Analysis tool that can suppress undesirable EMI generated from PCB at an early design stage.

EMISStream is based on experience of EMC expert engineers worldwide seeking solutions for their real world EMI problems. As a member of a prestigious US based EMC consortium, NEC continues its research and development to enhance EMISStream.

By eliminating possible EMI issues at the initial design stage EMISStream will improve efficiency, significantly decrease time spent on evaluation process and enable rapid time-to-market.



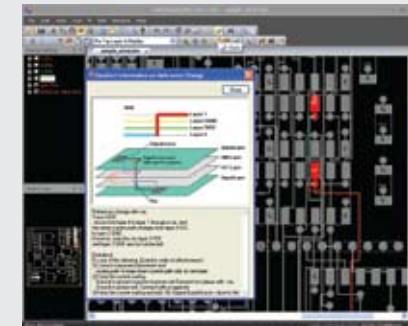
Reduce the Noise - Optimize Design

EMI Design Rule Check

EMI Design Rule Check will point out cause of EMI problems and make suggestions on solutions. Over 150 rules were investigated based on experience, measurement, and research and were boiled down to 13 key design rules.



- (1) Trace Length
- (2) Via Count
- (3) Traces Near Plane Edge
- (4) Reference Change
- (5) Return Current Path Discontinuity
- (6) SG Trace
- (7) Estimated Radiation
- (8) SG Via Spacing
- (9) Grounding Vias Along Plane Outline
- (10) Filter
- (11) Decoupling Capacitor
- (12) Differential Signal
- (13) XTalk



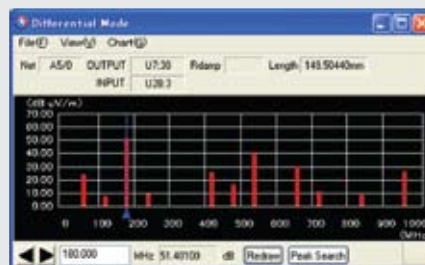
EMI Check Result

Location, detailed information, and solutions on detected errors are displayed. It allows you to closely analyze the error and assess the best way to resolve the problem. You can export EMI Check result as an HTML format.



EMI Check Error Filtering Function

This function allows you to filter errors and hone in on critical problems relevant to your design. The Design Rule list will allow you to look at certain rules of your choice as well as narrow down the frequency range (of the nets). The Error Point list is organized by number of error points which also gives you the frequency range columns. You can customize the frequency and error point ranges.



Estimated Radiation Value Graph Display (Expert Option)

Frequency spectrum chart display of estimated radiated electromagnetic field. At a glance you can see the problematic frequency range. The Expert Option will allow you to set IC rise time and damping/termination resistor value for individual nets and override the global value that is set in the parameter. You can get more accurate results by putting in specific parameters for nets.



Parameter GUI

EMStream has default threshold values for each Design Rule which you can customize. There is detailed explanation and illustration on each threshold making it easy to change the values to meet your design needs.

Power/Ground Resonance Analysis

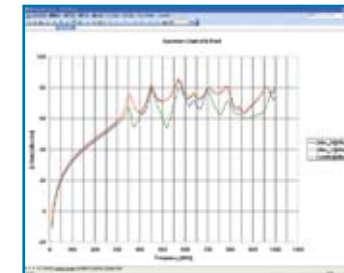
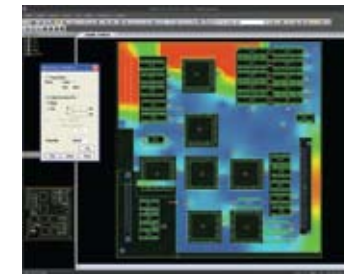
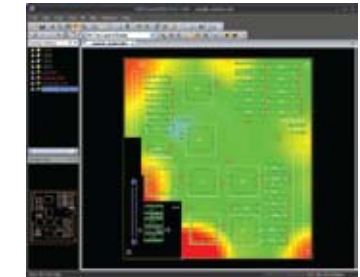
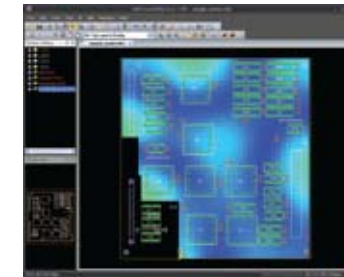
EMI increases if resonance occurs between the power/ground planes. The Power/Ground Resonance Analysis Function takes into account plane shapes, capacitors, and distance between the power/ground planes to analyze resonance based on the PEEC (Partial Element Equivalent Circuit) method.

Single Pair Resonance Analysis / Multilayer Resonance Analysis (Expert Option)

You can analyze a single pair of power and ground plane or multiple layers at a time. In most cases, substantial amount of resonance is caused by a pair of power and ground so you can optimize capacitor quantity and placement based on the single pair analysis. Following this process, you can run Multilayer Resonance Analysis (Expert Option) to see if resonance still occurs and fine-tune capacitor quantity and placement as well as via location. By combining the usage of Single/Multilayer analysis you can significantly save time on Plane Resonance Analysis.

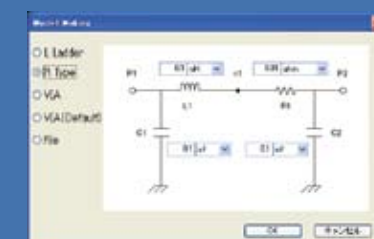
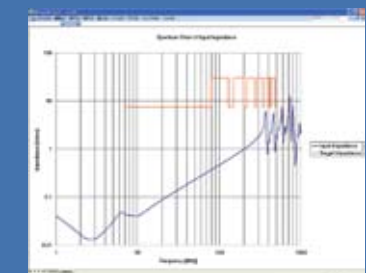
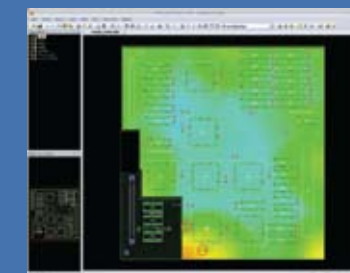
Plane Resonance Analysis - Far Field EMI Calculation (Expert Option)

Far Field EMI is calculated by plane edge voltage (one pair of ground and power). It will display far field horizontal/vertical frequency characteristics and azimuth pattern. You can adjust calculation environment such as the position of the PCB on the turn table, distance to antenna, and antenna height.



Power Integrity Analysis (PIStream)

You can add PIStream, Power Integrity Analysis Function as an option. PIStream will help you meet your target impedance by adding / moving capacitors, changing capacitance values, plane shapes and power / ground / plane distances.



IC Model Generation GUI

You can now take capacitance and inductance of the chip and package into account by using the GUI. These values affect mid-frequency resonance which is an important aspect for power integrity. By utilizing this function you can get a more accurate result in order to optimize capacitor placement, values, and numbers.