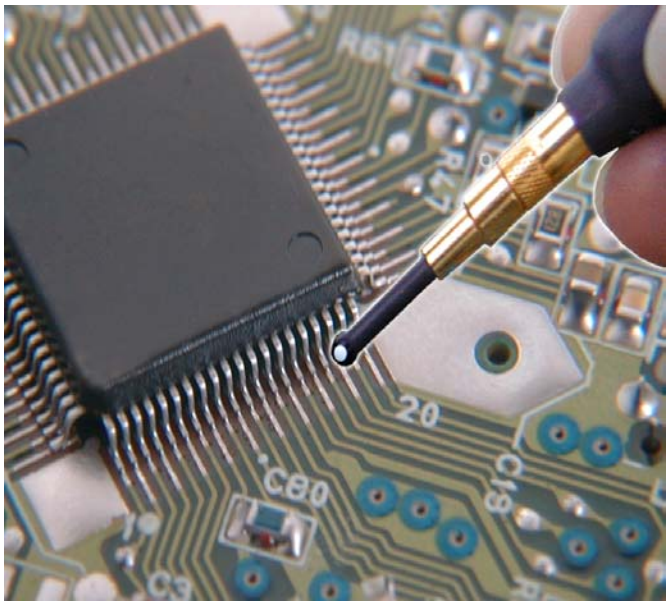
Langer has unveiled a range of analytical tools that permit emission and interference investigation at pin-level

SHORTCUT
EMC compliance for finalised designs do not necessarily have to be solved by wrapping the product in “bullet-proof” housing with entries and exits guarded by filters.

One of the major problems engineers face is the underlying disturbance effect that measuring systems can have on the circuits being investigated.

Circuit designers can use these probes and measuring systems for interference-free component-level signal measurements.

Ensuring electromagnetic compatibility (EMC) is a time consuming and tedious process. Worse still, the rules change frequently and are different from continent to continent.
Nonetheless, ensuring that a new product meets relevant EMC legislation can be made easier by considering the problem at an early point in the design cycle.
Unfortunately, EMC testing is sometimes regarded as a rather inconvenient last stage before a design materialises into the marketable product. In many cases, the design engineer undertakes some pre-compliance tests, and then has the product tested for emission and immunity standards at a test house.

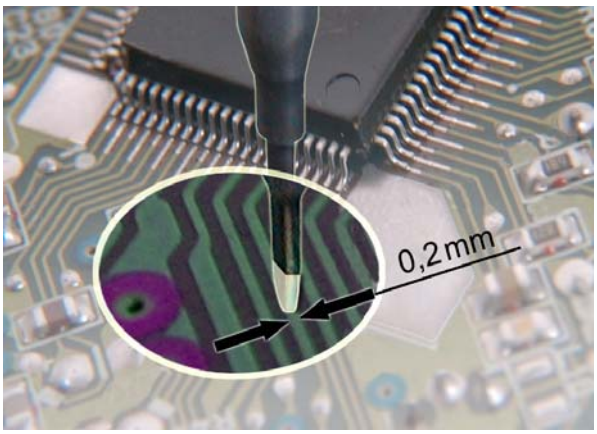


Electrically screened probes enable detailed magnetic field measurements in the layout.

Tinkering with the design at the final production stage is generally expensive and may delay the product launch. Changes to housings, shielding and the addition of filters in order to meet compliance standards also have a negative impact on marketing plans for the product through unforeseen additional manufacturing costs.

Use existing instruments

Ideally, EMC compliance requirements should not be set aside and forgotten while the design process is taking place. On the other hand, EMC compliance for finalised designe does not necessarily have to be solved by wrapping the product in "bullet-proof" housing with entries and exits guarded by filters.
The Langer tools provide E and H-field signal injection an monitoring, thus making it possible to look at the origins of, and susceptibility to, interference of dynamic and passive components, and to investigate radiation properties of wiring and circuit tracks.



RF-E10 detects electrical fields to 3GHz with a resolution of approx. 0,2 mm

The investigate tools are mainly in the form of probes, interface to signal generators, burst generators, oscilloscopes and RF voltmeters. The fundamental advantage is that they allow the designer tu utilise existing instrumentation to great advantage.
One of the major problems engineers face is the underlying disturbance effect that measuring systems can have on the circuits being investigated.
This is resolved by rupturing the galvanic bonds using an optical fibre connection between the probe and the external measuring device.
Many probes therefore incorporate A-to-D-electro-optic circuitry with complementary optoelectronic-D-to-A conversion devices coupling to oscilloscopes and other test instruments. The engineer can observe interference phenomena using pulse-stretching at the measuring instrument side.

Detect weak points

To test immunity at component level, a Langer system incorporating a burst generator with a range of electric and magnetic field injection probes is available.
Also offered are hand-held mini-burst generators in E and H disturbance injection modes; these allow engineers to detect the weak immunity points and locate them precisely in the component and layout area.
Apart from EMC compliance tests, circuit designers can also use these probes and measuring systems for interference-free component-level signal measurements.

Engineers can use these tools to locate weak immunity points precisely in the layout area.

These Langer products are now available in Australia through Westek Electronics.

Published by Reed Business Information Pty Ltd, www.electronicnews.com.au
Austalia & NZ´s Electronics Industry Newpaper, 19. January 2004
On 30. March 2004 from Langer EMV-Technik revised for publish at own homepage.