



We do thick film right.

- > Custom thick-film solutions
- > Performance to 80GHz
- > Wide range of material choices, design options, processes, and manufacturing techniques
- > First-class equipment & systems
- > Robust and experienced engineering support, with particular expertise in RF/microwave
- > Standard thick-film components also available
- > ISO-9001:2000

Anaren[®]

What'll we think of next?[®]

800-411-6596 > www.anaren.com

There's thick film. And then there's thick film...done right.

Everyone knows thick film is an attractive option when cost is the primary consideration. But, with the ceramics specialists of Anaren's Space & Defense group, employing thick film doesn't mean you have to sacrifice quality, performance, innovative designs, engineering support, and an overall positive experience. Quite to the contrary, when thick film is done right – the Anaren way – you can put checkmarks in all of the boxes critical to your project's success.



The right experience.

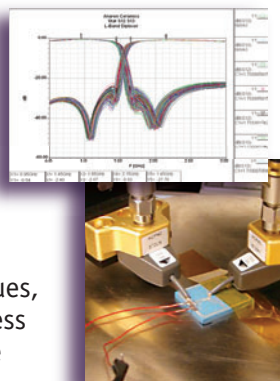
Anaren has provided standard and custom thick film solutions to some of the toughest customers in the business since 2000. (Before that, our ceramics-based acquisitions were literally pioneers in the thick film field, helping to define and apply the technology ever since its introduction in the 1960s!) So, whether our solutions were headed for space, deployed in a life-critical defense platform, applied to an advanced medical device, or engineered for the wireless infrastructure market – we know plenty about delivering on time, on spec, and on budget. Examples of projects we've tackled include:



- > Multi-chip assemblies
- > Patch antennas
- > Spiral inductors
- > Filters
- > Feed throughs
- > Distribution boards
- > Couplers
- > Multilayer circuit boards
- > Circuit boards with integrated passives

The right capabilities.

Got a tough thick-film challenge? Need an innovative, time-tested provider that's up to the task? Anaren offers enormous flexibility in terms of materials, circuit layout, embedded or non-embedded components, manufacturing techniques, and more. The one constant, regardless of the techniques we employ? We are committed to achieving the tightest tolerances and highest performance levels possible with thick film – so your cost vs. performance trade-off is minimized. A few highlights:



- > **Flexibility:**
 - sequentially applied layers of alternating conductor and dielectric to build up the multilayer structure – affording you from 1 to 8 conductor layers per side (single- or double-sided)
 - multiple sizes available... Starting at 0.020 x 0.020"

- advanced laser machining capability for various shapes & cut-outs
- wide resistance ranges, from 0.2Ω to 50GΩ
- choose from multiple termination materials, including: Au, PtAu, Ag, PdAg
- tin lead or Au plating available
- RF attenuators also available up to 18GHz
- integrated passives including: resistors, capacitors, inductors
- thick film available on Alumina, Ferrite, Aluminum Nitride, BEO, more – for a wide range of wirebonding, soldering, brazing options
- choose edge wraps, metalized via fills, or both

> Tight tolerances:

- superior line edge definition with etched thick film Au or Ag conductors
- 1 mil lines & spaces
- 0.15 line width tolerance
- 2 mil vias
- tolerances as low as 1%

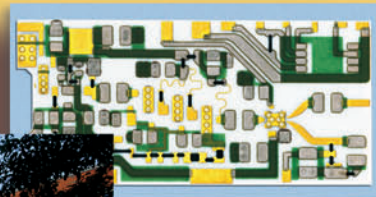
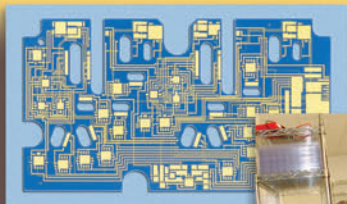
The right level of confidence.

Responsiveness, accessibility, professionalism, an overarching commitment to quality... Inside Anaren's ISO-9001:2000 certified facility, you will also find these intangibles. The result is a project that not only meets your technical specifications, but meets your business expectations.



Arrange for your free thick film project assessment and quote today.

As a first test of our ability to understand, and respond to, your challenging thick film project – call 603-898-2883 or email thickfilm@anaren.com to set up a free, no-obligation project briefing and estimate.



More about Anaren: Space & Defense Group

Anaren has been a valued supplier to the world's leading aerospace and defense primes for 40 years – where our proven expertise in RF and microwave engineering and manufacturing has played a critical role in terrestrial, maritime, airborne, and space-based radar, communications, and EW programs. Of additional benefit where size reduction, performance, materials know-how, and cost containment are concerned – Anaren is also a world-leading innovator of standard and custom RF and microwave technology for the wireless sector. Learn more about Anaren (NASDAQ: ANEN) at www.anaren.com.

Ask about our standard thick-film components and our LTCC capabilities!



Printed on recycled paper with environmentally friendly inks.

Anaren®

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