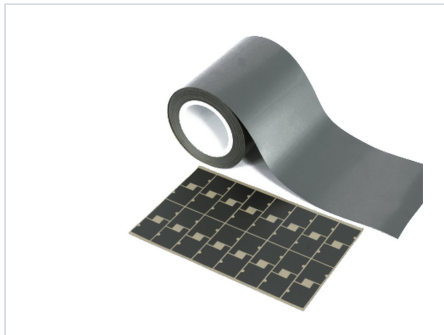


EMI failures and detuned antennas are material problems. XAK Technology supplies ferrite sheets, EMI absorber sheets and magnetic films matched to your problem frequency — in standard formats, or die-cut to your drawing in any shape, in development-friendly quantities. From first sample through repeat production, with engineering support on every selection.

Antenna detuned by metal

NFC / RFID reading range collapses when the antenna sits on metal, a battery or a PCB ground plane.

→ **XAK-NFC ferrite sheets**



Roll stock & die-cut parts

EMC failure at the lab

Radiated emissions over the limit, launch in weeks, no time or budget to re-spin the board.

→ **XAK-ABS absorber sheets**

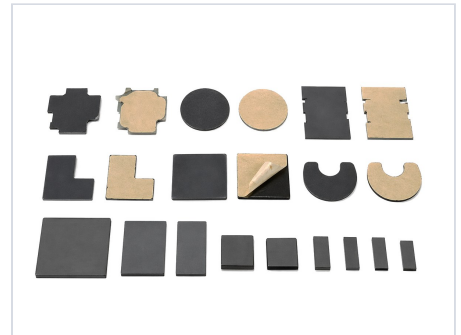


Flexible absorber sheets

Wireless charging runs hot & slow

Unmanaged flux heats the battery and PCB instead of charging the device.

→ **XAK-WPT ferrite sheets**



Standard & custom formats

1 One Material Decision: Redirect the Flux or Absorb It?

Every soft-magnetic sheet in this brochure is described by two frequency-dependent numbers:

- **μ' (real permeability)** — the ability to **concentrate and redirect** magnetic flux. High μ' at your communication or charging frequency means better NFC read range and better wireless-power efficiency.
- **μ'' (imaginary permeability)** — the **loss** that converts electromagnetic energy into heat. High μ'' at your noise frequency is what makes an absorber sheet kill unwanted emissions.

The right material is frequency-specific. A sheet that is excellent for 13.56 MHz NFC (high μ' , low μ'') is the wrong choice for absorbing 800 MHz radiation (where you want high μ''). Tell us your application and problem frequency — that is all we need to recommend a material.

2 Applications & Selection Map

2a · NFC & RFID at 13.56 MHz — recover the reading range

Metal, batteries and ground planes detune loop antennas and kill coupling. A high- μ' ferrite sheet between the antenna and the metal redirects the flux back through the coil — restoring read range without redesigning the antenna. Typical uses: NFC antennas in phones & wearables, payment terminals, access control, on-metal RFID tags and labels, smart posters, electronic shelf labels.

2b · Wireless Power Transfer (Qi & proprietary) — charge efficiently, protect the device

Behind every Tx/Rx coil, a low-loss ferrite sheet does two jobs: it concentrates the flux into the coupling path for higher efficiency, and it shields the battery and PCB from stray field that would otherwise become heat. Typical uses: smartphones & accessories, TWS earbuds, smartwatches, furniture-integrated chargers, vehicle consoles, medical device charging.

2c · Board- & device-level EMI suppression — fix it without a re-spin

When radiated emissions fail late in the project, an absorber sheet applied directly on the noise source converts RF energy into a negligible amount of heat — often the fastest and cheapest path back to compliance. Typical uses: on ICs & processors, on FPC/FFC and ribbon cables, around USB/HDMI/high-speed data cables, between stacked PCBs, lining shield cans & enclosures against resonance, DC-DC converter hotspots.

2d · Selection map

Your situation	What matters	Recommended series
NFC / RFID antenna on metal or battery	High μ' , very low μ'' at 13.56 MHz	XAK-NFC
Wireless charging Tx / Rx coil	Low loss at 100–205 kHz / 6.78 MHz, thin	XAK-WPT
Radiation from an IC, bus or cable (MHz–GHz)	High μ'' loss across the problem band	XAK-ABS
Shield-can / enclosure cavity resonance	Broadband absorption, conformable	XAK-ABS
50 Hz – kHz magnetic field (transformers, instruments)	Very high DC/low-frequency permeability	XAK-MSH (on request)
GHz-band resonant absorption (radar, ETC, modules)	Tuned resonant attenuation	On request

Not sure which row you are in? Send us the symptom (“read range too short”, “failed RE at 430 MHz”) and the frequency — we will map it for you.

3 Product Series — Typical Parameters

Series	Designed for	Permeability (typical)	Thickness	Operating temp
XAK-NFC	NFC / RFID flux redirection at 13.56 MHz	μ' 50–150, $\mu'' \leq 5$ @ 13.56 MHz	0.05–0.30 mm	–40 to +85 °C (+120 °C option)
XAK-WPT	Wireless power transfer coils	μ' 20–150, low loss at 100–205 kHz / 6.78 MHz	0.05–0.50 mm	–40 to +85 °C (+120 °C option)
XAK-ABS	Broadband EMI noise suppression	μ' 20–300 @ 3 MHz, high μ'' loss; effective 100 MHz–3 GHz (to 6 GHz)	0.05–0.50 mm	–40 to +110 °C
XAK-MSH	Low-frequency magnetic shielding (on request)	Nanocrystalline, very high μ at 50 Hz–kHz	≈0.12 mm	per specification

Typical values for material selection reference. RoHS compliant; halogen-free options available. Permeability curves and batch test data available on request.

4 Formats & Delivery Forms

Format	Details
Roll stock	Standard widths (e.g., 210 / 470 mm); slit-to-width service for production lines.
Cut sheets	Standard A4 / 300×300 mm; other sheet sizes on request.
Die-cut parts	The core of our service. Any shape to your drawing — rings, frames, antenna outlines, complex cut-outs — with clean edges, ready to place.
Options	Acrylic adhesive backing, PET cover film, release liner, multi-layer lamination, printing/marketing on request.

Non-magnetized product = simple logistics. Ferrite and absorber sheets ship as regular goods — no magnetic inspection, no special air-freight handling, standard express delivery worldwide.

Verify a sample on your bench — three quick checks

1 • NFC / RFID antenna. Measure read range or S11 of the antenna on its metal surface, with and without the sheet. A suitable XAK-NFC sheet restores the resonance near 13.56 MHz and recovers most of the lost read range.

2 • Board-level EMI retrofit. Place the absorber over the noisy IC, cable or slot and re-run the near-field probe scan or radiated measurement. Compare peak levels before / after at the failing frequencies.

3 • Wireless charging. Compare charge efficiency and coil temperature rise with the sheet in place. A low-loss XAK-WPT sheet raises coupling and shields the electronics behind the coil — without adding heat.

5 Why Engineers & Buyers Work with XAK

- **Die-cut to your drawing, not just catalog sheets.** Standard sheets are available — but most of our customers send a shape, and receive parts that drop straight into their assembly.
- **Selection support at engineering level.** μ' vs μ'' , frequency, thickness, adhesive — we help you choose before you buy, not after it fails.
- **Development-friendly quantities.** Small sample lots and short runs are welcome here, not quoted out of the building.
- **24-hour response.** One dedicated contact from first email to delivery, with engineers involved in every technical discussion.
- **Documented shipments.** Batch test data and permeability curves available on request; consistent material from lot to lot.

6 How a Project Runs

1 Requirements Application, problem frequency, dimensions or drawing, thickness limit.	2 Recommendation Material series + thickness + adhesive option, with data.	3 Samples Standard or die-cut samples for your bench test — lead time depends on complexity, confirmed with the quotation.	4 Production Die-cutting & converting with in-process checks, batch-consistent material.	5 Delivery Worldwide express, regular-goods shipping; batch data on request.
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7 RFQ Checklist

☐ **Application & frequency.** NFC at 13.56 MHz? Radiation failing at 430 MHz? Qi charging? One sentence is enough.

☐ **Dimensions & thickness limit.** Drawing for die-cut parts, or sheet/roll size; maximum allowed thickness in your stack-up.

☐ **Adhesive & film options.** Adhesive backing, PET cover, release liner — or plain material.

☐ **Quantity.** Samples now + estimated annual volume.

☐ **Environment.** Operating temperature, bending/curved surface, any compliance requirements (automotive, medical).

Send your problem frequency and drawing — we respond within 24 hours.

Email: info@xakmag.com | Web: xakmag.com | Tel / WhatsApp: +86 198 6049 7413

All parameters are typical values for selection reference; actual performance depends on material grade, thickness, test fixture and installation. Please confirm final specifications with our team before design freeze. © 2026 XAK Technology Co., Ltd — Custom Magnetic Materials & Assemblies.