

Ultralyd billeddannelse

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Probe

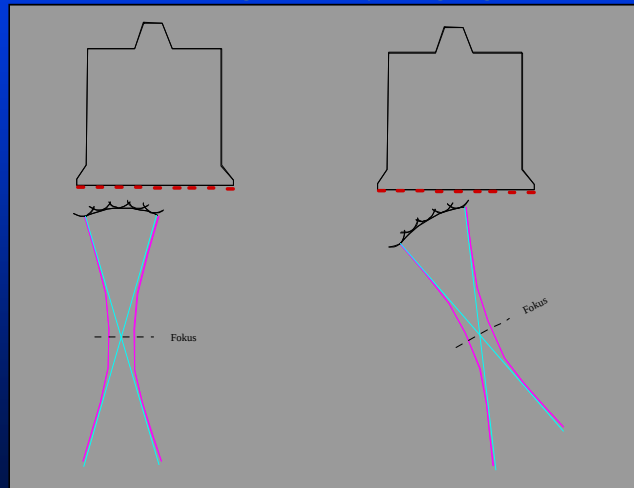
- 32-128 elementer (bare noen få vist her)
- Stråleforming i hovedplanet for styring og fokusering av strålen
- Akustisk linse for fokusering i den andre dimensjonen



Elektronisk strålefokusering

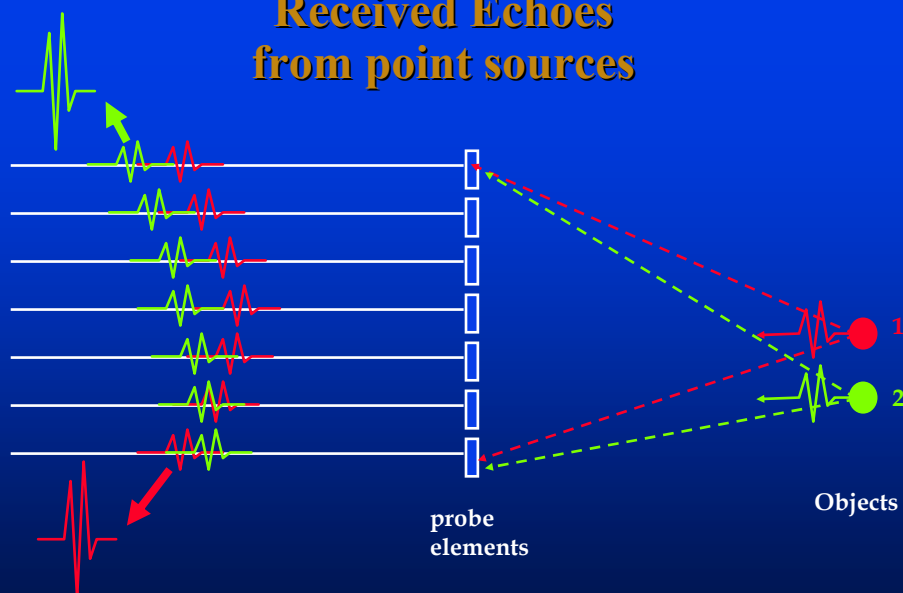
Fokusering

Styring og fokusering

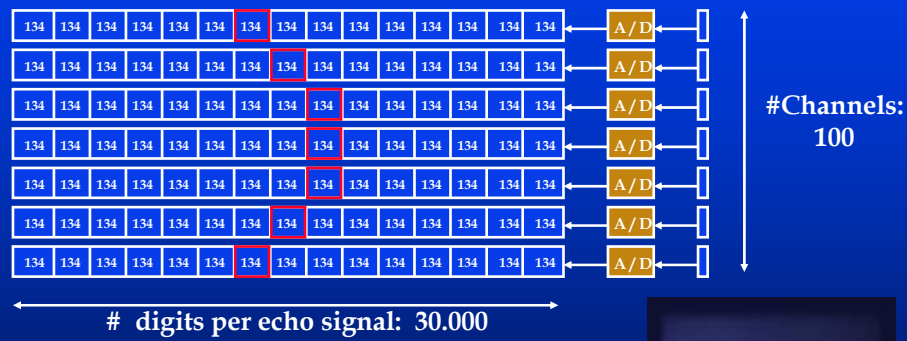


Åge
Grønningsæter

Received Echoes from point sources



Digital Beam Former



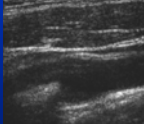
- Data per scanline: 3 M bytes
- Data per image: 150 M bytes
- Data per second: 1200 M bytes



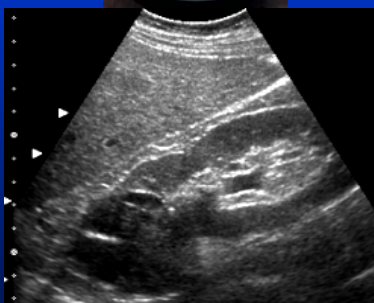




Ultra Probes



Linear array
High resolution
Limited width



Curve-linear array
Large image width
Large near field

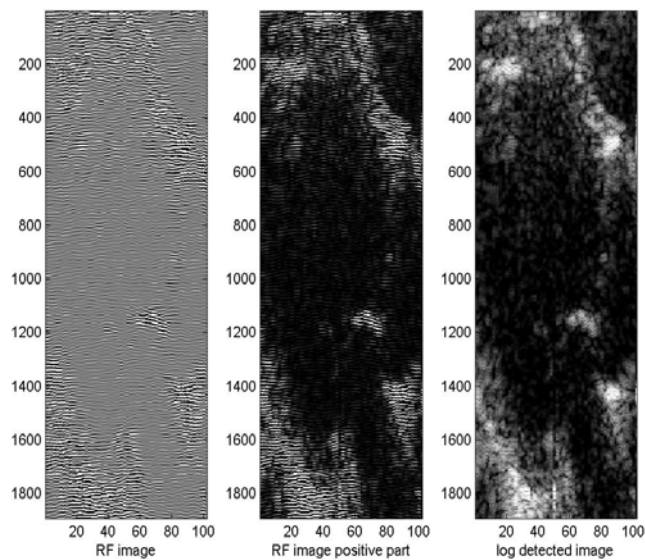
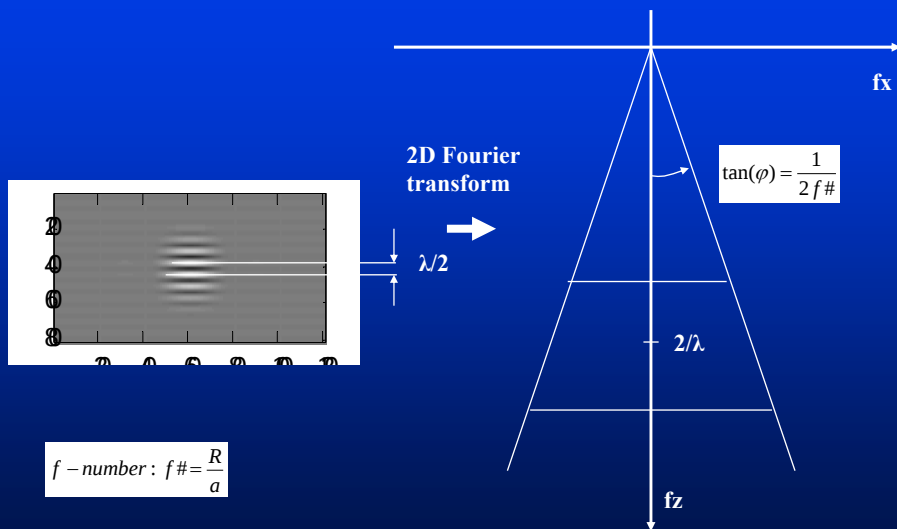


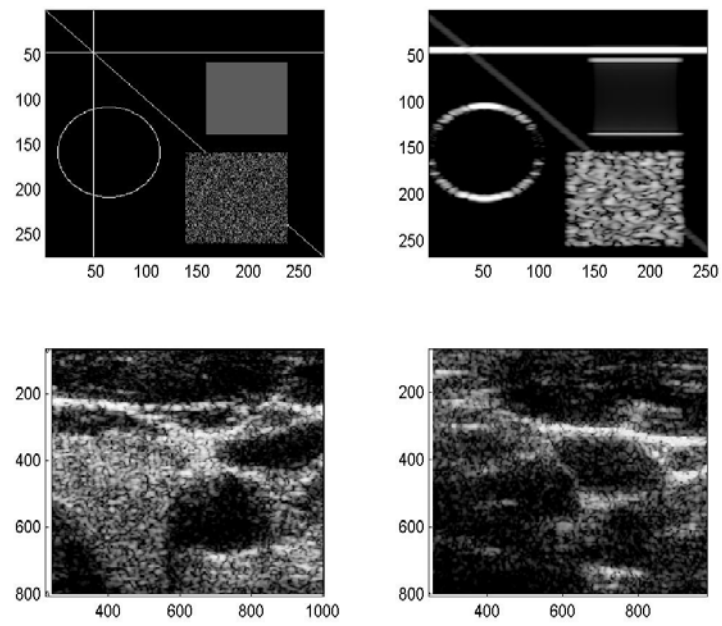
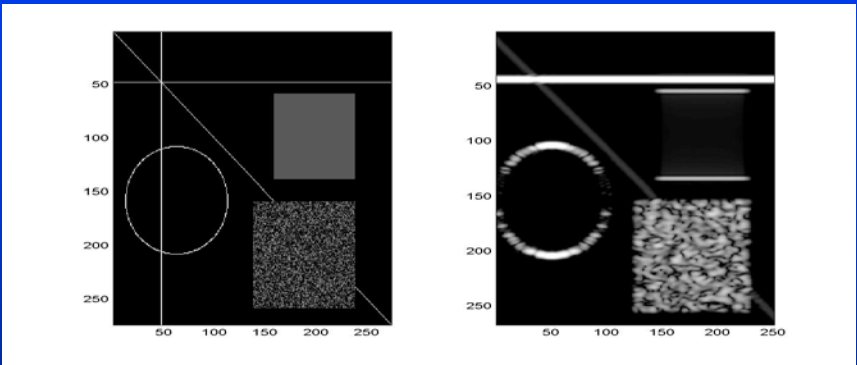
Phased array
Small footprint
90 deg. sector format



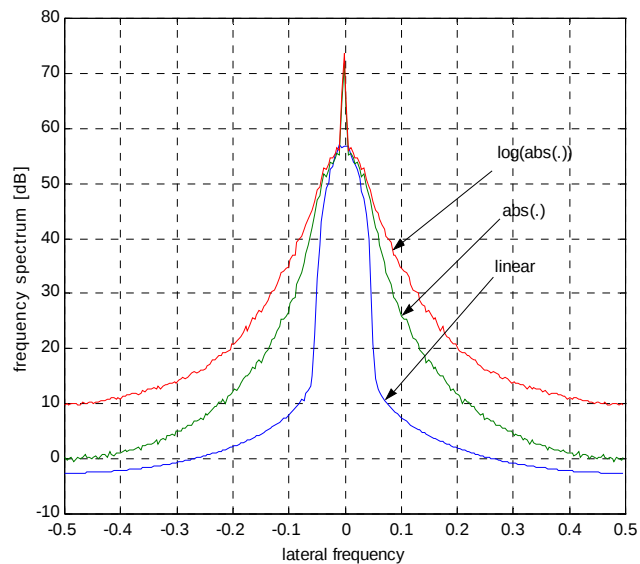
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Point spread function in k-space

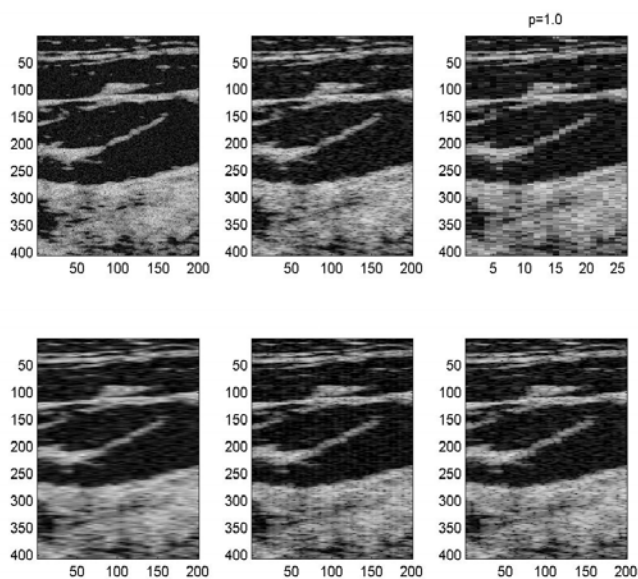




Lateral frequency spectrum Before and after detection



Lateral sampling and reconstruction

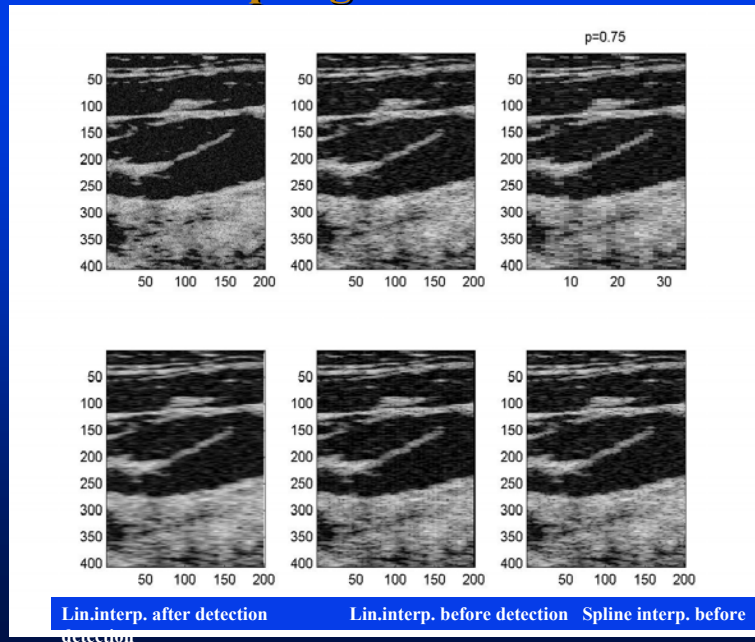


Lin.interp. after detection

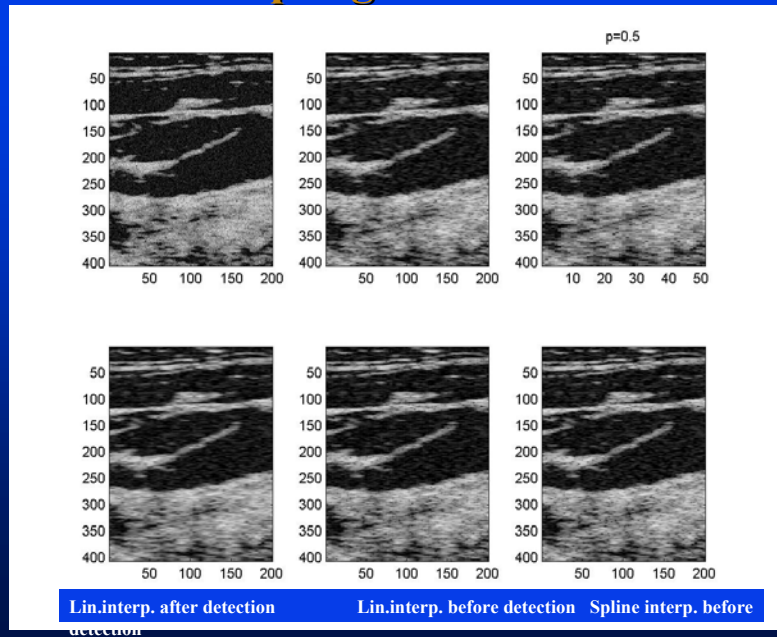
Lin.interp. before detection

Spline interp. before

Lateral sampling and reconstruction



Lateral sampling and reconstruction



Multiple scan-line acquisition

- Illuminate a larger part of the image view by transmitting a wide beam
- Receive and separate echoes from different directions inside the transmitted beam

