

MMT UBChirp . Underwater Transducer Technology

UBChirp stands for “Ultra Broadband Chirp-Ready”

UBChirp transducer technology finds many underwater (UW) applications and is particularly advantageous in broadband UW communications, UW imaging, bathymetry, subsurface profiling, and UW detection, location, classification and tracking of low signature objects, etc. It offers unmatched performance in terms of improved detection range, sensitivity and target resolution over conventional tone burst transducer technology especially in noisy environments including littoral water.

Over the past year, Microfine Materials Technologies Pte Ltd (Singapore) has been developing a range of UBChirp transducers using PZT piezoceramics and PZN-PT single crystal. MMT UBChirp transducers cover a wide range of central frequency from 15 kHz to 300 kHz, with bandwidths (BW) of > 0.8 octave (>50%) for PZT-based transducers and >1.0 octave (>80%) for single-crystal-based transducers. BW >100% is also possible when a larger volume of single crystal is incorporated. The table below provides the bandwidths of the various Ultra Broadband Chirp-ready (UBC) and Ultra Broadband Chirp-ready Compact (UBCC) transducers and arrays being produced at MMT, where the figures in bold give the approximate central frequency (to ±2 kHz).

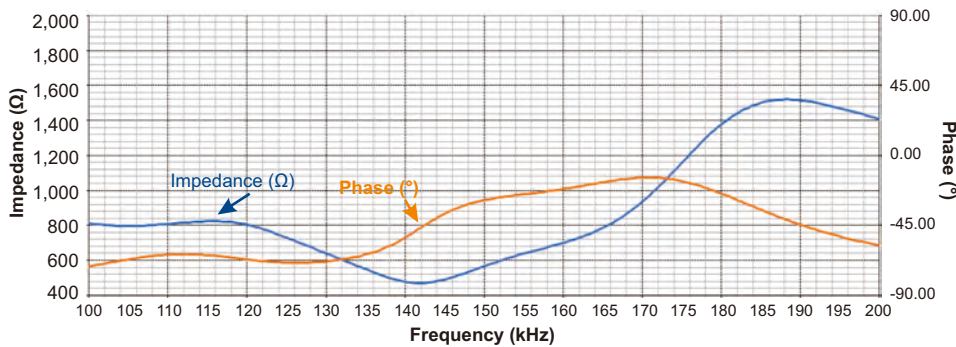
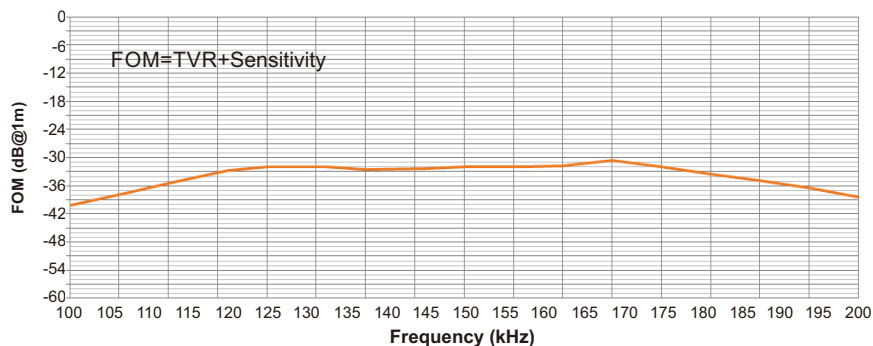
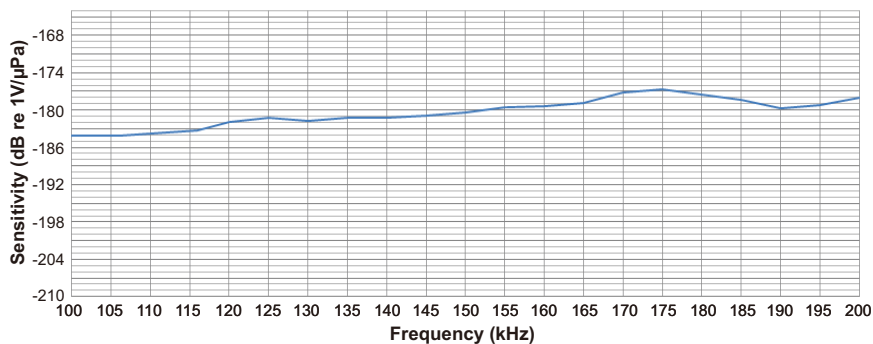
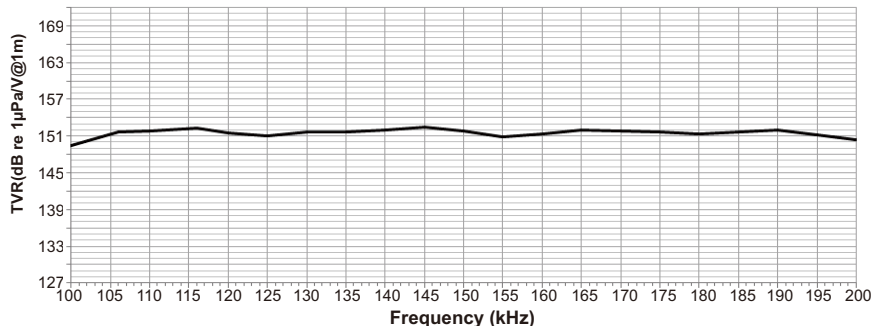
Table: Central frequencies and bandwidths of various MMT UBC & UBCC Transducers

	PZT Piezoceramic UBC [%BW]	PZN-PT Single Crystal UBCC [%BW]
HF	160-250 (205±45) kHz [44%] 100-200 (150±50) kHz [67%]	
MF	80-134 (107±27) kHz [50%]	
LF	45-75 (60±15) kHz [50%] 36-60 (48±12) kHz [50%] 28-46 (37±9) kHz [49%] 20-32 (26±6) kHz [46%]	} 36-84 (60±24) kHz [80%] } 21-49- (35±14) kHz [80%] 12-28 (20±8) kHz [80%] (*) 9-21 (15±6) kHz [80%] (*)

(*) Low-frequency PZN-PT single crystal transducers and arrays of BW >100% are also possible. Enquiry is welcome.



UBC-150-PC 100-200 kHz [BW=67%]



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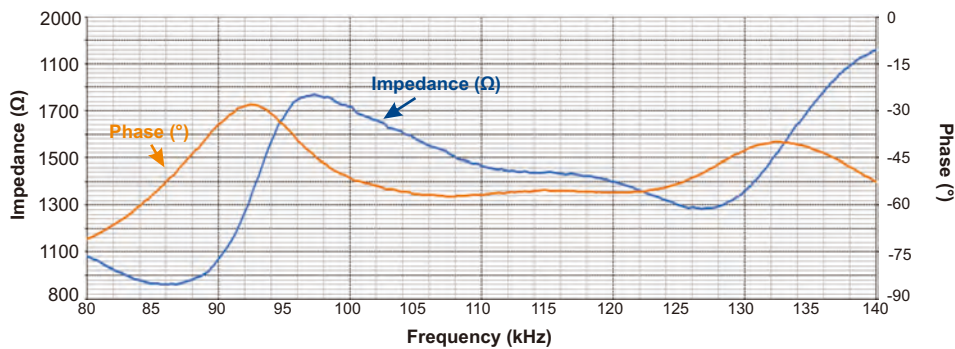
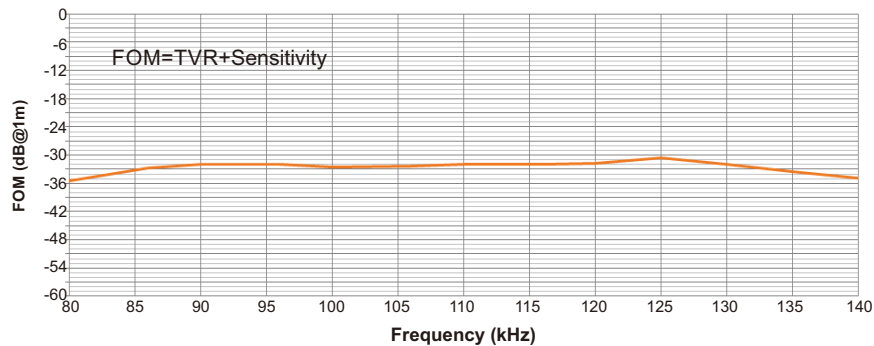
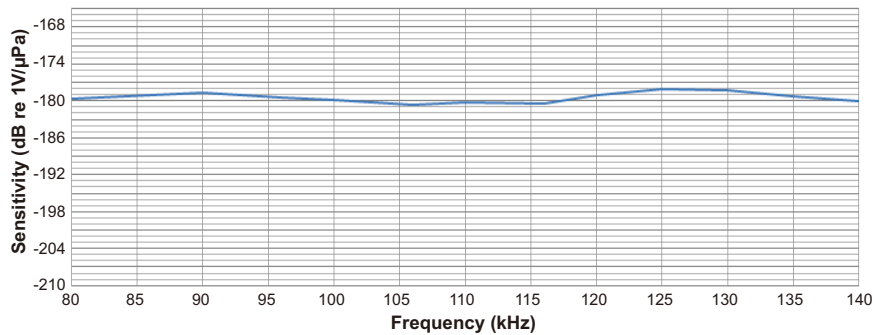
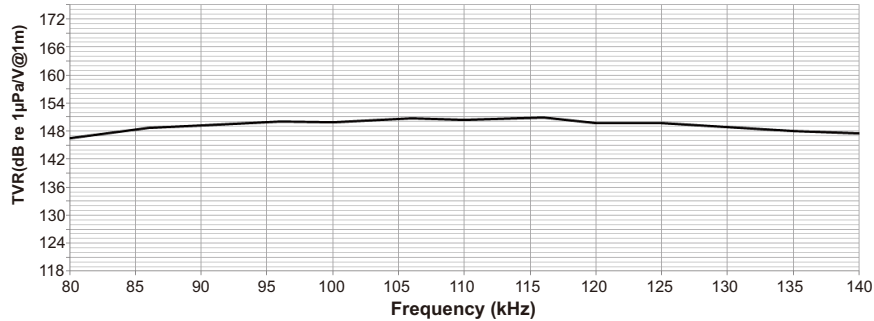
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Please contact us for other details.

All Enquiries:

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UBC-110-PC 80-134 kHz [BW=50%]



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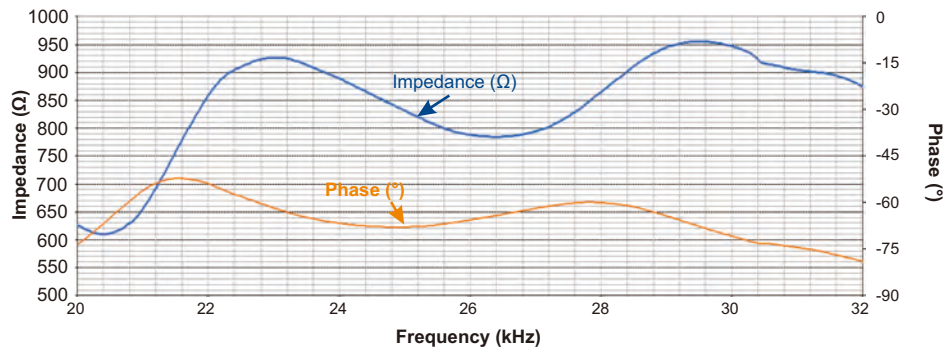
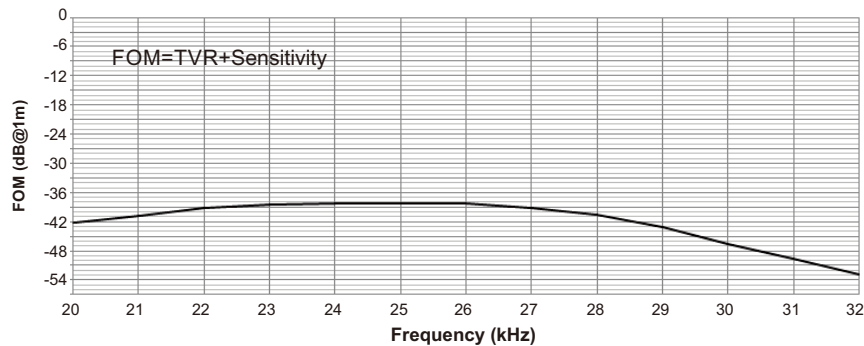
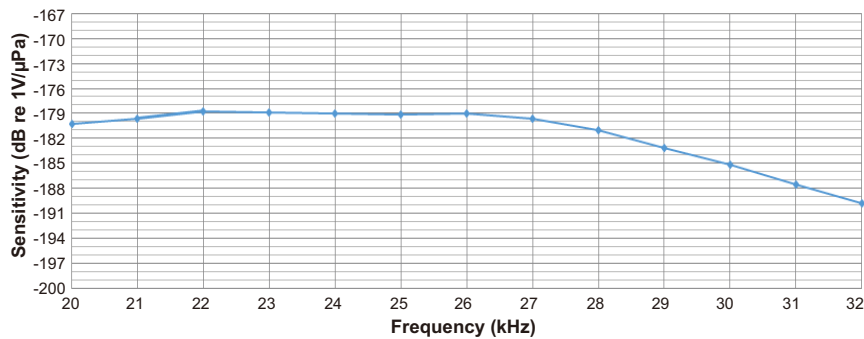
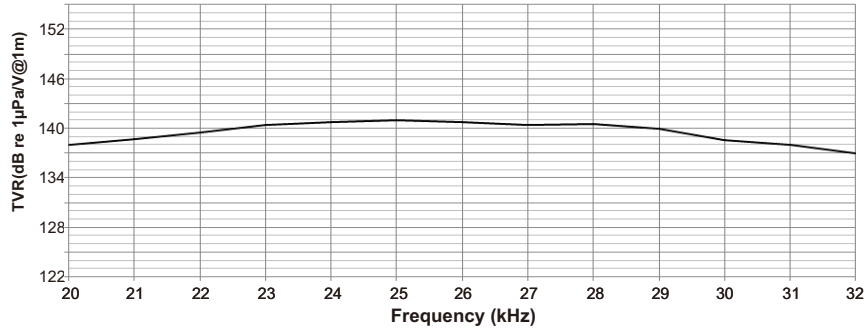
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UBC-26-PZT 20-32 kHz [BW=46%]



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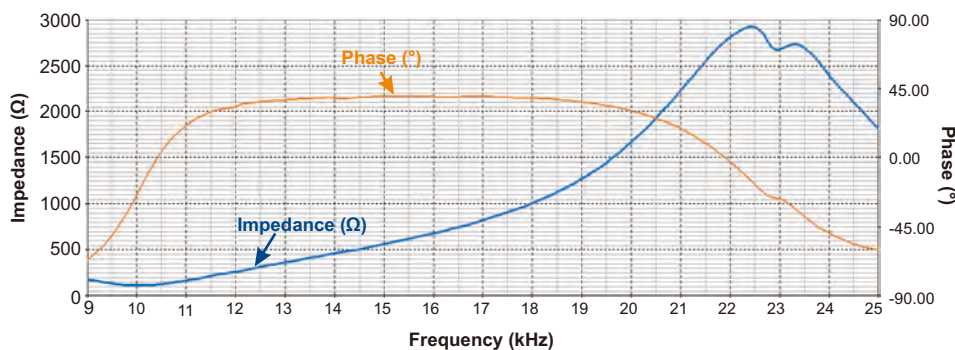
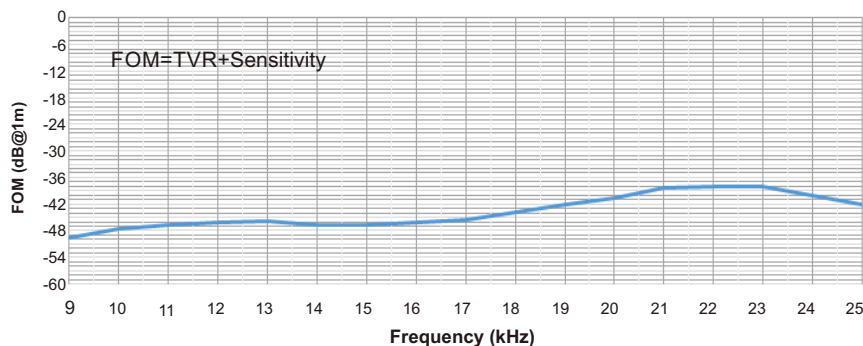
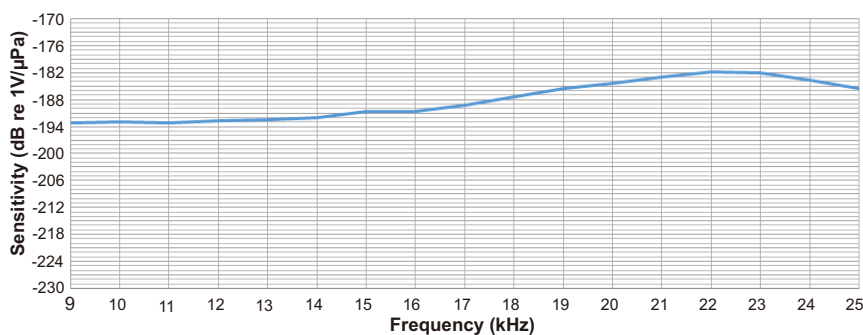
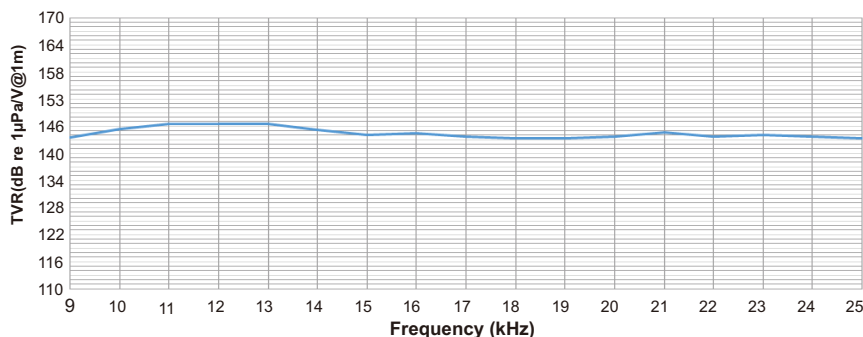
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UBCC-15-SC 9-21 kHz [BW=80%]



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