

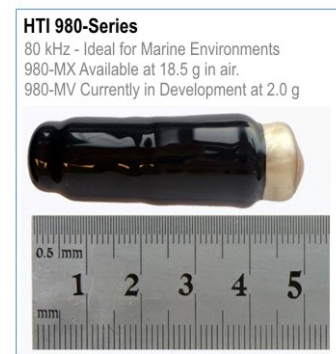
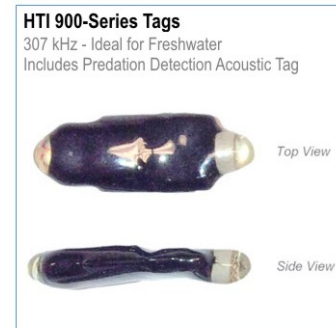
ACOUSTIC TAG TYPES

HTI 795-SERIES - 307 kHz

HTI 900-SERIES – 307 kHz

HTI 980-SERIES – 80 kHz

Including Predation Detection Acoustic Tag (PDAT)



All HTI Acoustic Tags are detected/identified at ranges to 1 km with high resolution up to 20 cm.

HTI's Acoustic Tags offer the world's highest resolution and range available. Options include the Predation Detection Acoustic Tag (PDAT) for conclusively determining predation events for survival studies. The HTI 795-Series is ideal for monitoring fish in freshwater environments. The new HTI 980-Series Tag is designed specifically at 80 kHz for high-resolution at extended ranges in marine environments.

Why 307 kHz or 80 kHz frequencies? Both work well in freshwater and saltwater. But 307 kHz is ideal for freshwater and 80 kHz is perfect for marine environments. The 80 kHz was specifically designed to be just outside of the auditory range of most marine mammals, more specifically pinnipeds (seals) to avoid the commonly referenced "dinner bell effect". All HTI Acoustic Tags provide an efficient means for detecting fish presence and/or remotely tracking fish in 2D and 3D in fine-scale resolution up to 20 centimeters and can be detected and identified at extensive ranges of up to 1 kilometer.

Short Summary:

- Fine-scale, sub-meter, 2D/3D resolution over time (e.g., once every second).
- Detection ranges at over 1 km for all HTI acoustic tags (307 kHz and 80).
- Simultaneous tag identification & detection.
- Immune to tag signal collision.
- Individual tag identification with over 500,000 unique codes.
- A multitude of tag life options (up to over 5 years) with various tag size/tag life options available.
- Improved resolution and range above all other tag manufacturers with an encoded signal for 11 dB increase in signal strength.

Latest Advances Include:

- HTI's Predation Detection Acoustic Tag (PDAT) is the only acoustic tag in the world to conclusively detect predation events, critical for survival studies.
- The HTI 980-Series Tag is the world's only high-resolution to 20 cm with extended range to over 1 kilometer commercially available.

TAG FAMILY

MODEL 795-SERIES – 307 KHZ

MODEL 900-SERIES – 307 KHZ, Includes Predation Detection Acoustic Tag (PDAT)

MODEL 980-SERIES – 80 KHZ

Tag Type	Diameter mm	Length mm	Vol. cm ³	Freq. kHz	Source Level dB/uPa	Predation Detection Acoustic Tag	Weight		Approximate Life*	
							In Air grams	Fresh-water grams	3 sec PRI	10 sec PRI
<i>HTI 795-Lm</i>	6.8	17.5	0.28	307	149	n/a	0.65	0.34	38 d	66 d
<i>HTI 795-LD</i>	6.8	20.0	0.45	307	149	n/a	1.10	0.55	98 d	175 d
<i>HTI 795-LG</i>	11.0	25.0	1.40	307	152	n/a	4.60	3.10	220 d	400 d
<i>HTI 795-LY</i>	16.0	48.0	5.70	307	152	n/a	11.90	7.30	2.5 yr	4 yr
<i>HTI 795-LZ</i>	16.0	69.0	12.0	307	152	n/a	24.00	14.00	4 yr	5 yr
<i>HTI 900-s</i>	6.0	16.0	0.28	307	152	n/a	0.57	0.29	35 d	65 d
<i>HTI 900-Lm</i>	6.0	19.0	0.31	307	152	n/a	0.65	0.34	55 d	100 d
<i>HTI 900-LB</i>	9.0	18.0	0.50	307	152	n/a	0.80	0.30	70 d	125 d
<i>HTI 900-LD</i>	9.0	20.0	0.56	307	152	n/a	0.96	0.40	110 d	200 d
* <i>HTI 900-PB</i>	10.0	23.0	0.50	307	152	Yes	0.95	tba	60 d	110 d
* <i>HTI 900-PD</i>	10.0	25.0	0.56	307	152	Yes	1.11	tba	100 d	180 d
<i>HTI 980-MX</i>	16.0	48.0	9.65	80	158	n/a	18.5	9.65	3 yr	5 yr
<i>HTI 980-MV</i>	tba	tba	tba	80	158	n/a	2.0	0.9	tba	tba

* While, future predation detection may be included in all *Model 900-Series Tags*, they are presently only offered in the *Model 900-PB* and *Model 900-PD*.

Estimated. Life can be extended by decreasing Pulse Width (PW) and/or increasing Pulse Rate Interval (PRI). Tags operate at 307 kHz or 80 kHz. Length, diameter, & weight may vary +/- 10%. Life quoted is based on operating parameters of 1 msec pulse width, single pulse, at 10°C.

Detection Range	Over 1 km (3,280 ft) in freshwater with the 307 kHz frequency tags and in marine with the 80 kHz frequency tags. For three-dimensional tracking ranges <300 m (984 ft) hydrophone separation recommended for freshwater. Noisy sites may reduce detection ranges.
Frequencies	307 kHz ideal for freshwater and 80 kHz ideal for marine environments.
Signal Encoding	Proprietary encoded code-phase modulated signal improves signal-to-noise ratio by 11 dB. Can be used to extend detection range (e.g., typically by 100-350 m in freshwater), or increase resolution by reducing pulse width (e.g., from 5 msec to 0.5 msec), or some combination of both.
Pulse Repetition Rate	Field programmable: 25 ping/sec to 1 ping every 16 sec
Pulse Width	Field programmable: 0.5 msec to 5 msec
Individual ID	Individual tag identification for over 500,000 unique codes, standard
Maximum Depth	300 m (984 ft)
Tag Programmer	<i>HTI 490-LP Acoustic Tag Programmer</i> permits on-site programming of ping rate, pulse width, and tag ID. Destructive tag code "collisions" do not exist with <i>HTI 795-Series</i> or <i>HTI 900-Series Acoustic Tags</i> .
Hydrophone Types	HTI 590-Series Hydrophones detect all 307 kHz tags and the HTI 580-Series Hydrophones detect 80 kHz acoustic tags. Both hydrophones work interchangeably with all HTI Acoustic Tag Systems.
Predation Detection	The Predation Detection Acoustic Tag (PDAT) is currently available for the HTI 900-PB and HTI 900-PD tags.
Specification Changes	Please note that specifications are subject to change at any time.

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