

# ACOUSTIC TAG TYPES

## HTI 795-SERIES - 307 kHz

## HTI 900-SERIES – 307 kHz

Including Predation Detection Acoustic Tag (PDAT)  
With Passive Integrated Transponder (PIT) Tag Inclusion Options



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. HTI's 795- and 900-Series are ideal for monitoring fish in freshwater environments. HTI's 900-Series Predation Detection Acoustic Tag (PDAT) is designed to detect fish predation events. All tag types support PIT Tag inclusion for detection of tagged fish outside of water or after the battery life of an acoustic tag study.

Why 307 kHz frequency? Results from extensive testing show that 307 kHz is ideal for freshwater the environment. 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.

### 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.
- 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:

- HTI's Predation Detection Acoustic Tag (PDAT) conclusively detects predation events, critical for survival studies.

**TAG FAMILY**  
**MODEL 795-SERIES – 307 kHz**  
**MODEL 900-SERIES – 307 kHz, Includes Predation Detection Acoustic Tag (PDAT)**  
**PIT TAG INCLUSION – Optional**

Type	Diameter mm	Length mm	Vol. cm <sup>3</sup>	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-LF</i>	11.0	24.5	0.80	307	149	n/a	3.00	1.56	170 d	500 d
<i>HTI 795-LG</i>	11.0	33.0	1.40	307	152	n/a	4.47	3.10	1 yr	2.5 yr
<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	12.00	307	152	n/a	24.00	14.00	4 yr	5 yr
<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-PD</i>	10.0	25.0	0.56	307	152	n/a	1.11	tba	100 d	180 d

\* Estimated life can be extended by decreasing Pulse Width (PW) and/or increasing Pulse Rate Interval (PRI). Tags operate at 307 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.  
For three-dimensional tracking ranges <300 m (984 ft) hydrophone separation recommended for freshwater. Noisy sites may reduce detection ranges.
- Frequency** 307 kHz ideal for freshwater 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** *HTI 490-LP Acoustic Tag Programmer* permits on-site programming of ping rate, pulse width, and tag ID. Destructive tag code “collisions” do not exist with *HTI 795-Series* or *HTI 900-Series Acoustic Tags*.
- Hydrophone Types** HTI 590-Series Hydrophones detect all 307 kHz tags.
- Predation Detection** The Predation Detection Acoustic Tag (PDAT) is currently available for the HTI 900-Series tags.
- Specification Changes** Specifications are subject to change at any time.

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