

The CART Series

Combined Acoustic / Radio Transmitters



An invaluable tool for tracking species that move between salt and fresh water or between shallow and deep fresh water environments.

- Combines radio and acoustic frequency transmitters on a single device, eliminating the need to double-tag.
- Uses same Lotek coding scheme for both radio and acoustic modes.
- Extends the use of the SRX_400 receiver to detect and datalog both types of signals.

All are supplied fully assembled with an easy to use on/off activation switch. Several models are offered (specifications overleaf) and all are available in several formats:

• **Standard**, in which alternate code bursts are transmitted as acoustic and radio signals throughout the life of the tag. For coded tags, the typical format is a five second interval between code bursts, giving a ten second interval for each transmission type. Alternative intervals are available to suit the application. Which of the signals is used for detection and tracking at any time will depend upon the environment and the detection equipment deployed.

• **Programmed**, in which a non-standard pattern of transmissions is built-in during manufacture. This can provide different burst rates for both the radio or acoustic modes of operation. Programming also affords the user the option of requesting an activation schedule with a selectable startup test period. The researcher is thus able to define exact periods during which the transmitter will generate its signal, on an hourly, daily or weekly basis. Transmitters can also be programmed for delayed activation and/or deactivation.

Options

B - "Beeper" pulse rate coding expressed as beats per minute (bpm)

E - External attachment w/ hardware (requires an additional 2-4 mm to length)

D - Non-functioning "Dummy" test tag



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Specifications

Up to 212 identification codes can be used on each of two acoustic frequency channels (65.5 kHz or 76.8 kHz). Radio frequency can be specified by the user within the range of 140-175 MHz..

CART tags are available both for internal (body cavity or gastric) and external attachment to the fish. In the latter case this can add an additional 2-4 mm to the overall length, depending upon tag selected. As with all transmitters, "dummy" versions are also available to allow research and development of mounting methods and assessment of any effects on the experimental animal.

Model	Size(mm)	Longevity(days)	Wt(g) in Salt Water	Wt(g) in Air	AcousticPower (dB)
CART16_1	16 x 57	663	13.5	23.8	156 @ 76.8KHz
CART16_2s	16 x 68	904	18.0	31.5	156 @ 76.8KHz
CART16_2	16 x 85	1446	19.4	36.0	156 @ 76.8KHz
CART16_3s	16 x 87	548	21.0	38.0	162 @ 76.8KHz
CART16_3	16 x 100	748	23.4	43.0	162 @ 76.8KHz
CART32_1s	32 x 101	5120	37.7	94.5	156 @ 76.8KHz

Coded acoustic signals are detected using a wired or wireless hydrophone linked to an SRX_400 receiver/datalogger. A wired hydrophone allows active tracking or datalogging when connected to an SRX_400 with a sonic up-converter. The wireless hydrophone system detects the acoustic signal and re-transmits it as a radio signal to an SRX_400 receiver/datalogger. Many wireless hydrophones may be monitored by a single SRX_400 base station, facilitating deployment of an extensive detection network - see our brochures covering the SRX_400 series and the Wireless Hydrophone System.

Notes on specifications

1. Acoustic frequency 65.5 or 76.8 kHz. Radio frequency 140-175 MHz.
2. Acoustic power output is an average expressed in dB re 1µP @ 1meter (nominal).
3. All dimensions are for internal attachment with the exception of the CART32_1s.
4. Longevities vary, based in part upon environmental conditions to which they are subjected. For this reason, longevity is defined as 80% of the specified value at time of order. Calculations are based on the battery manufacturer's specifications at a code burst interval of 5 seconds. For CART tags, the code burst interval is defined as the time between any consecutive pulse.
5. All tags are guaranteed to meet stated specifications upon shipment. Any Lotek tags found to be defective, with respect to material or workmanship, will be repaired or replaced.
6. Periodic design modifications to individual models may alter specifications. Selection of external attachment design or other options may further affect stated specifications. It is recommended that specifications be confirmed when placing an order.

