



10.20 7000 – 7k Sonar Settings

Description: This record is produced by the SeaBat™ 7k sonar 7-P processor series. It contains the current sonar settings. The 7-P processor updates this record for each ping. This record is available by subscription only.

Data Definition:

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Table 32: 7000 - Record Type Header

NAME	SIZE	DESCRIPTION
Sonar Id	u64	Sonar serial number.
Ping number	u32	Sequential number.
Multi-Ping Sequence	u16	Flag to indicate Multi-Ping Sequence. Always 0 (zero) if not in Multi-Ping mode; otherwise this is the sequence number of the ping in the multi-ping sequence.
Frequency	f32	Transmit frequency in Hertz.
Sample rate	f32	Sample rate in Hertz
Receiver bandwidth	f32	In Hertz.
Tx Pulse width	f32	In seconds.
Tx Pulse type identifier	u32	0 – CW 1 – Linear chirp
Tx Pulse envelope identifier	u32	0 – Tapered rectangular 1 – Tukey
Tx Pulse envelope parameter	f32	Some envelopes don't use this parameter.
Tx Pulse reserved	u32	Additional pulse information.
Max ping rate	f32	Maximum ping rate in pings per second.
Ping period	f32	Seconds since last ping.
Range selection	f32	Range selection in meters.
Power selection	f32	Power selection in dB re 1µPa
Gain selection	f32	Gain selection in dB.



NAME	SIZE	DESCRIPTION
Control flags	u32	BITFIELD: 0-3: Auto range method. 4-7: Auto bottom detect filter method. 8: Bottom detect range filter. 9: Bottom detect depth filter. 10-14: Auto receiver gain method. 15-31: Reserved.
Projector identifier	u32	Projector selection.
Projector beam steering angle vertical	f32	In radians.
Projector beam steering angle horizontal	f32	In radians.
Projector beam –3dB beam width vertical	f32	In radians.
Projector beam –3dB beam width horizontal	f32	In radians.
Projector beam focal point	f32	In meters.
Projector beam weighting window type	u32	0 – Rectangular 1 – Chebychev
Projector beam weighting window parameter	f32	N/A
Transmit flags	u32	BITFIELD: 0-3: Pitch stabilization method. 4-7: Yaw stabilization method. 8-31: Reserved.
Hydrophone identifier	u32	Hydrophone selection.
Receive beam weighting window	u32	0 – Chebychev 1 – Kaiser
Receive beam weighting parameter	f32	N/A



NAME	SIZE	DESCRIPTION
Receive flags	u32	BITFIELD: 0-3: Roll stabilization method. 4-7: Dynamic focusing method. 8-11: Doppler compensation method. 12-15: Match filtering method. 16-19: TVG method. 20-23: Multi-Ping Mode. 0 = No Multi-Ping If non-zero, this represents the number of pings in the multi-ping sequence. 24-31: Reserved
Receive Beam Width	f32	Angle in radians
Bottom detection filter info	f32	Min range (if range filter active).
Bottom detection filter info	f32	Max range (if range filter active).
Bottom detection filter info	f32	Min depth (if depth filter active).
Bottom detection filter info	f32	Max depth (if depth filter active).
Absorption	f32	Absorption in dB/km.
Sound velocity	f32	Sound Velocity in m/s
Spreading	f32	Spreading loss in dB.
Reserved	u16	Reserved for future pulse shape description.

10.21 7001 – 7k Configuration

Description: This record is produced by the SeaBat™ 7k sonar 7-P processor series. It contains the configuration information about the sonar capabilities. Each sonar's configuration can be found in the record's Module info section (see *Table 34*). The record is created on system startup and does not change during operation. The record can be manually requested from the 7-P processor. This record is not available for subscription. For details about requesting records see record 7500 together with Appendix A.

The dynamic data section for each device is encoded using XML. A sample is provided below.