DATA FORMAT DEFINITION DOCUMENT

ADDENDUM

to

SeaBat 7k Data Format, Volume I
Version 1.00, Revision E
Document Number 11542

RESON, Inc.
100 Lopez Road
Goleta, California 93117
United States of America

RESTRICTED USE AND DISTRIBUTION ONLY

Revision History:

Date	ECO	Author	Rev	Description
06/19/09	N/A	DMD (AMO)	E	Version 1.00 Addendum
05/11/06	06126	JM (MD)	E	Version 1.00
11/8/2004	04551	MJF (MD)	D	Version 0.54
10/6/2004	04422	MJF (MD)	C	Version 0.53
07/19/04	04179	MJF (MD)	B	Version 0.52
03/11/04		MD	A	Preliminary Release

TABLE OF CONTENTS

LIST OF TABLES

1 INTRODUCTION

1.1 Purpose and Overview

This document serves as a supplement to the Data Format Definition Document (DFD), SeaBat 7k Data Format, Volume I. This addendum introduces and describes new data records developed since the release of version 1.00, revision E.

For in-depth information on SeaBat 7k data format, see the main DFD.

1.2 Terms and Acronyms

The following table contains definitions of terms and acronyms used in this document.

Table 1: Terms and Acronyms

Term	Definition
7k Data Format	A record-based data format defined for data logging and network transmission for use, in part, with the SeaBat™ 7k systems
Altitude	Distance from the seafloor to the sensor
BITE	Built-In Test Environment
COG	Center of Gravity
Depth	Distance from the sea surface to the sensor
DFD	Data Format Definition (this document)
Heading	True heading
N/A	Not applicable
Pitch	Rotation about the across-ship (X) axis
Roll	Rotation about the along-ship (Y) axis
Rx	Receiver
SeaBat™ 7k	Generic term used to describe the SeaBat™ 7000 series of sonar systems, related software components and protocols
TPE	Total Propagated Error
Tx	Transmitter
VRP	Vessel Reference Point
Yaw	Rotation about the vertical (Z) axis

2 RECORD TYPE DEFINITIONS

2.1 Overview

The following table summarizes new record type identifiers for the RESON 7k sonar and generic sensors.

Not all records shown in this section are available for all systems. Availability of certain records will depend on the specific installation. In most cases, only SeaBat-relevant data is produced from the 7kCenter.

Table 2: Record Type Definitions

Record Type	Description
7003	7k firmware and hardware configuration
7012[1]	7k ping motion data
7017[1]	7k detection data setup
7018[1]	7k beamformed data
7021	7k built-in test environment data
7023	8k wet end version
7026[1]	7k detection data
7027[1]	7k raw detection data
7028[1]	7k snippet data

2.2 7003 – 7k Firmware and Hardware Configuration

Description: This record is produced by the 7kCenter series. It contains the configuration information about the sonar hardware and firmware. The record is created on system startup and does not change during operation. The record can be manually requested from the 7kCenter. This record is not available for subscription.

The dynamic data section is encoded using HTM. A sample is provided below.

[1] These records are available by subscription only.

Data Definition:

DRF	RTH	RD	OD	DRF

Table 3: 7003 – Record Type Header

Name	Size	Description
Devices	u32	Hardware device count
Info length	u32	Varies with device type

HTM SAMPLE – 7101

HARDWARE TABLE

Name	Hex Address	Frequency	Enumerator	UI	M2
SYS1 8101 Wet End	21	240000	N/A	8101	N/A
TX1	2A	240000	N/A	0	N/A
RX1	26	N/A	N/A	0	N/A
LM	30	N/A	N/A	7101	N/A

LM TABLE

Field	Bytes	Sensor Type	Name	Min	Max
1	2	0	Addresses Destination (MSB) Source (LSB	0	0
2	2	0	Data Length	0	0
3	2	0	Type of Command	0	0
5	2	2	FPGA Die Temperature (°C)	-5.0	95.0
8	2	4	5V	4.5	5.5

9	2	4	2.5Vref	2.4	2.6
10	2	4	1.5V	1.3	1.7
12	2	4	3.3V	3.0	3.6
13	2	4	2.5V	2.2	2.8
14	2	4	1.0V	0.9	1.1
23	2	5	Controller CPLD	0	0
24	2	5	Controller FPGA	0	0
25	2	5	Controller DSP Boot	0	0
26	2	5	Controller DSP System	0	0
32	2	1	LM Downlink	0	65535
33	2	1	FPGA Status Field	0	65535
35	2	1	LM Uplink (from LM)	0	65535

SYS1 TABLE

Field	Bytes	Sensor Type	Name	Min	Max
1	2	0	Addresses Destination (MSB) Source (LSB)	0	0
2	2	0	Data Length	0	0
3	2	0	Type of Command	0	0
4	4	6	Head Temperature (°C)	-20.0	70.0
5	4	7	Leak V	3.8	6.0
6	4	8	-5V	-5.5	-4.5

7	4	9	+12	11.0	13.0
8	4	9	-12	-13.0	-11.0
9	4	10	Dipswitch	0	0

2.3 7012 – 7k Ping Motion Data

Description: This record is produced by the 7kCenter series. It contains the motion data applied to the Tx/Rx steering during the ping. The 7kCenter updates this record on every ping. This record is available by subscription only.

NOTE
These are not actual steering angles. In order to get actual steering angles this data should be used in conjunction with base transmit and receive angles from record 7004 – 7k Beam Geometry.

Data Definition:

DRF	RTH	RD	OD	DRF

Table 4: 7012 – Record Type Header

Name	Size	Description
Sonar Id	u64	Sonar serial number
Ping number	u32	Sequential number
Multiping sequence	u16	Flag to indicate multiping sequence. Always 0 (zero) if not in multiping mode; otherwise this represents the sequence number of the ping in the multiping sequence.
Samples (N)	u32	Number of samples
Flags	u16	BIT FIELD: • 0: Pitch stabilization applied/pitch field present • 1: Roll stabilization applied/roll field present • 2: Yaw stabilization applied/heading field present • 3: Heave stabilization applied/heave field present • 4-15: Reserved

Name	Size	Description
Error flags	u32	BIT FIELD: • 0: PHINS reference 0 = valid 1 = invalid • 1-3: Reserved for PHINS • 4: Roll Angle >15 degrees • 5: Roll Angle >35 degrees • 6: Roll Rate > 10 degrees • 7-15: Reserved
Sampling rate	f32	Sampling frequency in Hz
Pitch	f32	Pitch value at the ping time in radians
Roll	f32 *N	Roll value per sample in radians
Heading	f32 *N	Heading value per sample in radians
Heave	f32 *N	Heave value per sample in meters

NOTE
The fields, Pitch, Roll, Heading, and Heave, are present only if corresponding flags are set. The new fields may be added (refer to the record size in the record header for the total size). For sign explanations, see the section Sign Conventions in the main DFD.

2.4 7017 – 7k Detection Data Setup

Description: This record is produced by the 7kCenter series. It contains the description of various parameters used in detection computations. The 7kCenter updates this record on every ping. This record is available by subscription only.

Data Definition:

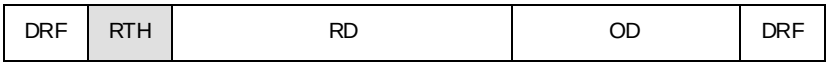

Table 5: 7017 – Record Type Header

Name	Size	Description
Sonar Id	u64	Sonar serial number
Ping number	u32	Sequential number
Multiping sequence	u16	Flag to indicate multiping sequence. Always 0 (zero) if not in multiping mode; otherwise this represents the sequence number of the ping in the multiping sequence.
N	u32	Number of detection points

Name	Size	Description
Data block size (S)	u32	Size of detection information block in bytes
Detection algorithm	u8	0 = G1_Simple 1 = G1_BlendFilt 2 = G2 3-255: Reserved for future use
Flags	u32	BIT FIELD: • 0: 1= User-defined depth filter enabled • 1: 1 = User-defined range filter enabled • 2: 1 = Automatic filter enabled • 3: 1 = Nadir search limits enabled • 4: 1 = Automatic window limits enabled • 5-31: Reserved for future use
Minimum depth	f32	Minimum depth for user-defined filter in meters
Maximum depth	f32	Maximum depth for user-defined filter in meters
Minimum range	f32	Minimum range for user-defined filter in meters
Maximum range	f32	Maximum range for user-defined filter in meters
Minimum nadir search	f32	Minimum depth for automatic filter nadir search in meters
Maximum nadir search	f32	Maximum depth for automatic filter nadir search in meters
Automatic filter window	u8	Automatic filter window size in percent of the depth
Reserved	u32 *16	Reserved for future use

NOTE
The following data section is repeated for each detection point as defined in RTH. The size of each field is always defined in RTH (S). If the size of this definition does not match the size specified in the record's header, the user must assume that there is an updated revision of this record and that new fields are added at the end.

Table 6: 7017 – Record Data

Name	Size	Description
Beam descriptor	u16	Beam number the detection is taken from

Name	Size	Description
Detection point	f32	Beam steering angle with reference to receiver's acoustic center in the sonar reference frame, at the detection point; in radians
Flags	u32	BIT FIELD: • 0: 1 = Automatic limits valid • 1: 1 = User-defined limits valid • 2-8: Quality type, defines the type of the quality field • 9: 1 = Quality passes user-defined criteria or no user-defined criteria was specified • 10-31: Reserved for future use
Automatic limits minimum sample	u32	Minimum sample number for automatic limits
Automatic limits maximum sample	u32	Maximum sample number for automatic limits
User-defined limits minimum sample	u32	Minimum sample number for user-defined limits
User-defined limits maximum sample	u32	Maximum sample number for user-defined limits
Quality	32 bits	Detection quality, see *Table 7*
Reserved	(S-30) bytes	Reserved for future use

The quality field above should be treated as follows, according to the quality type specified in the record data's flags (bits 2-8):

Table 7: 7017 – Detection Quality

Name	Size	Description
0	u32	Quality is not available/not used
1	u32	BIT FIELD: • 0: 1 = Brightness filter passed • 1: 1 = Colinearity filter passed
2-31		Reserved for future use

2.5 7018 – 7k Beamformed Data

Description: This record is produced by the 7kCenter series. It contains the sonar beam magnitude and phase data. The 7kCenter updates this record on every ping. This record is available by subscription only.

Data Definition:

DRF	RTH	RD	OD	DRF

Table 8: 7018 – Record Type Header

Name	Size	Description
Sonar Id	u64	Sonar serial number
Ping number	u32	Sequential number
Multiping sequence	u16	Flag to indicate multiping sequence. Always 0 (zero) if not in multiping mode; otherwise this represents the sequence number of the ping in the multiping sequence.
Beams (N)	u16	Total number of beams in ping record
Samples (S)	u32	Total number of samples in ping record
Reserved1	u32 *8	Reserved for future use

DRF	RTH	RD	OD	DRF

Table 9: 7018 – Record Data

Name	Size	Description
Sample 0, Beam 0, Amp	u16	Amplitude value for first sample, first beam (First sample represents range 0 meters)
Sample 0, Beam 0, Phs	i16	Phase value for first sample, first beam (First sample represents range 0 meters) (Phase values are in radians scaled by 10430)
…	…	…
Sample 0, Beam N-1, Amp	u16	Amplitude value for first sample, last beam
Sample 0, Beam N-1, Phs	i16	Phase value for first sample, last beam
…	…	…
Sample S-1, Beam N-1, Amp	u16	Amplitude value for last sample, last beam
Sample S-1, Beam N-1, Phs	i16	Phase value for last sample, last beam

2.6 7021 – 7k Built-In Test Environment Data

Description: This record is produced by the 7kCenter series. It contains both the Built-In Test Environment (BITE) data and board request data (uplink/downlink). The 7kCenter updates this record when any of the values have changed and publishes it every second. The record can be manually requested or subscribed to from the 7kCenter.

Data Definition:

Table 10: 7021 – Record Type Header

Name	Size	Description
N	u16	Number of boards reporting

Table 11: 7021 – Record Data for Each Device (N)

Name	Size	Description
Source name	u8 *64	Null terminated ASCII string, e.g. “TX1”
Source address	u8	Source address
Frequency	f32	Frequency for transmitter or 0
Enumerator	u16	Enumerator for transmitter or 0
Downlink time sent	7kTime	Downlink time sent
Uplink time received	7kTime	Uplink time received
BITE time received	7kTime	BITE time received
Status	u8	BIT FIELD: Bit 0: • 0 Uplink OK • 1 Uplink Error Bit 1: • 0 Downlink OK • 1 Downlink Error Bit 2: • 0 Bite OK • 1 Bite Error
NBF	u16	Number of valid bite fields (BF) for this board

Name	Size	Description
BITE status bits	UINT64 *4	BIT FIELD: Bit 0: • 0 BF #0 within range • 1 BF #0 out of range Bit 255: • 0 BF #255 within range • 1 BF #255 out of range
BF #0: Reserved	u16	Reserved
BF #0: Name	u8 *64	Null terminated ASCII string, e.g. “3.3V”
BF #0: Device Type	u8	1 = Error count 2 = FPGA die temperature 3 = Humidity 4 = Serial 8-channel ADC 5 = Firmware version 6 = Head Temp,_8K WetEnd 7 = Leak V,_8K WetEnd 8 = 5 Volt,_8K WetEnd 9 = 12 Volt,_8K WetEnd, 10 = DipSwitch,_8K WetEnd
BF #0: Minimum	f32	
BF #0: Max	f32	
BF #0: Value	f32	Current value
…..		
…..		
BF #NB-1 Reserved		Reserved
BF #NB-1 Name	u8 *64	Null terminated ASCII string, e.g. “3.3V”

Name	Size	Description
BF #NB-1 Device Type	u8	1 = Error count 2 = FPGA die temperature 3 = Humidity 4 = Serial 8-channel ADC 5 = Firmware version 6 = Head Temp,_8K WetEnd 7 = Leak V,_8K WetEnd 8 = 5 Volt,_8K WetEnd 9 = 12 Volt,_8K WetEnd, 10 = DipSwitch,_8K WetEnd
BF #NB-1 Min	f32	
BF #NB-1 Max	f32	
BF #NB-1 Value	f32	Current value

2.7 7023 – 8k Wet End Version

Description: This record provides the 8k Wet End version as a NULL terminated string.

Data Definition:

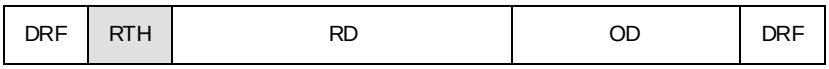

Table 12: 7023 – Record Type Header

Name	Size	Description
Version string	u8 *32	ASCII string, max length 31 characters + null

2.8 7026 – 7k Detection Data

Description: This record is produced by the 7kCenter series. It contains the corrected detection results. The 7kCenter updates this record on every ping. This record is available by subscription only.

Data Definition:

DRF	RTH	RD	OD	DRF

Table 13: 7026 – Record Type Header

Name	Size	Description
Sonar Id	u64	Sonar serial number
Ping number	u32	Sequential number
Multiping sequence	u16	Flag to indicate multiping sequence. Always 0 (zero) if not in multiping mode; otherwise this represents the sequence number of the ping in the multiping sequence.
N	u32	Number of detection points
Data field size (S)	u32	Size of detection information block in bytes
Corrections/Methods	u64	BIT FIELD: Bit 0: • 1 = Geometrical corrections for cylindrical arrays is applied Bit 1-2: • 0 = Manually entered surface sound velocity is used • 1 = Measured surface sound velocity is used • 2, 3 = Reserved for future use Bit 3: • Roll stabilization applied Bit 4: • Pitch stabilization applied Bits 5-63: • Reserved for future use
Detection algorithm	u8	0 = G1_Simple 1 = G1_BlendFilt 2 = G2 3-255: Reserved for future use

Name	Size	Description
Flags	u32	BIT FIELD: Bit 0: • 1 = Quality Filter is applied. Only detections that pass user-defined criteria are generated. Bit 1: • 1 = Motion error(s) detected. Data may not be accurate. Bit 2-3: Reference frame • 0 = Sonar • 1 = Vessel • 2-3 = Reserved Bit 4-31: • Reserved for future use
Reserved	u32 *16	Reserved for future use

NOTE
The following data section is repeated for each detection point as defined in RTH. The size of each field is always defined in RTH (S). If the size of this definition does not match the size specified in the record's header, the user must assume that there is an updated revision of this record and that new fields are added at the end.

Table 14: 7026 – Record Data

Name	Size	Description
Detection range	f32	Two-way travel time to the bottom/target in seconds
Angle X	f32	Across-track angle to detection point in radians
Angle Y	f32	Along-track angle to detection point in radians
Range error	f32	Measurement error in seconds
Angle X error	f32	Measurement error in radians
Angle Y error	f32	Measurement error in radians
Reserved	(S-24) bytes	Reserved for future use

2.9 7027 – 7k RAW Detection Data

Description: This record is produced by the 7kCenter series. It contains non-compensated detection results. The 7kCenter updates this record on every ping. This record is available by subscription only.

Data Definition:

DRF	RTH	RD	OD	DRF

Table 15: 7027 – Record Type Header

Name	Size	Description
Sonar Id	u64	Sonar serial number
Ping number	u32	Sequential number
Multiping sequence	u16	Flag to indicate multiping sequence. Always 0 (zero) if not in multiping mode; otherwise this represents the sequence number of the ping in the multiping sequence.
N	u32	Number of detection points
Data field size (S)	u32	Size of detection information block in bytes
Detection algorithm	u8	0 = G1_Simple 1 = G1_BlendFilt 2 = G2 3-255: Reserved for future use
Flags	u32	BIT FIELD: 0-31: Reserved for future use
Sampling rate	f32	Sonar's sampling frequency in Hz
Tx angle	f32	Applied transmitter steering angle, in radians
Reserved	u32 *16	Reserved for future use

NOTE
The following data section is repeated for each detection point as defined in RTH. The size of each field is always defined in RTH. If the size of this definition does not match the size specified in the record's header, the user must assume that there is an updated revision of this record and that new fields are added at the end.

DRF	RTH	RD	OD	DRF

Table 16: 7027 – Record Data

Name	Size	Description
Beam descriptor	u16	Beam number the detection is taken from
Detection point	f32	Non-corrected fractional sample number with reference to receiver's acoustic center with the zero sample at the transmit time
Rx angle	f32	Beam steering angle with reference to receiver's acoustic center in the sonar reference frame, at the detection point; in radians
Flags	u32	BIT FIELD: • 0: 1 = Magnitude based detection • 1: 1 = Phase based detection • 2-8: Quality type, defines the type of the quality field below • 9-31: Reserved for future use
Quality	32 bits	Detection quality, see *Table 17*
Uncertainty	f32	Detection uncertainty represented as an error normalized to the detection point
Reserved	(S-22) bytes	Reserved for future use

NOTE
Transmitter and receiver steering angles provided in this record are total steering angles applied. Refer to record 7004 – 7k Beam Geometry and/or record 7012 – 7k Ping Motion Data in order to isolate steering components. For sign explanations, see the section Sign Conventions in the main DFD.

The quality field above should be treated as follows, according to the quality type specified in the record data's flags (bits 2-8):

Table 17: 7027 – Detection Quality

Name	Size	Description
0	u32	Quality is not available/not used
1	u32	BIT FIELD: • 0: 1 = Brightness filter passed • 1: 1 = Colinearity filter passed

Name	Size	Description
2-31		Reserved for future use

2.10 7028 – 7k Snippet Data

Description: This record is produced by the 7kCenter series. It contains the sonar snippet imagery data. The 7kCenter updates this record on every ping. This record is available by subscription only. It is not available for forward-looking sonar.

Data Definition:

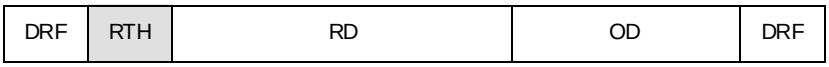

Table 18: 7028 – Record Type Header

Name	Size	Description
Sonar Id	u64	Sonar serial number
Ping number	u32	Sequential number
Multiping sequence	u16	Flag to indicate multiping sequence. Always 0 (zero) if not in multiping mode; otherwise this represents the sequence number of the ping in the multiping sequence.
N	u16	Number of detection points
Error flag	u8	If *set*, record will not contain any data. Flag itself will indicate an error: 0 = OK 6 = Bottom detection failed Other = Reserved
Control flags	u8	Control settings from RC 1118 command: • 0: Automatic snippet window is used • 1: Quality Filter enabled • 2: Minimum window size is required • 3: Maximum window size is required • 4-7: Reserved
Reserved	u32*7	Reserved for future use

Table 19: 7028 – Record Data

Name	Size	Description
Beam descriptor[1]	u16	Beam number
Snippet start[1]	u32	First sample included in the snippet
Detection sample[1]	u32	Detection point
Snippet End[1]	u32	Last sample included in the snippet
…	…	…
Beam descriptor[N]	u16	Beam number
Snippet start[N]	u32	First sample included in the snippet
Detection sample[N]	u32	Detection point
Snippet end[N]	u32	Last sample included in the snippet
First snippet	Dynamic, u16	Amplitude series for each sample. Array is populated with samples from the first sample to the last as defined above.
…	…	…
Last beam	Dynamic, u16	Amplitude series for each sample. Array is populated with samples from the first sample to the last as defined above.

3 7K REMOTE CONTROL DEFINITIONS

3.1 Overview

The following table summarizes new remote control identifiers for the Record Data section of the 7500 record. The SeaBat™ 7k series system supports all commands or a subset of the below commands.

Table 20: 7k Remote Control Definitions

Identifier	Description	Possible Return Records
1016	Bottom detection adaptive gate window and filters	
1017	Receiver gain type	
1020	Transmit pulse envelope identifier	
1029	Projector position relative to receiver	7501, 7502
1034	Match filter parameters	
1035	Coverage sector	
1036	Coverage mode	
1099	Stop 7kCenter	7501, 7502
1114	External trigger	
1115	Trigger out	
1116	PPS edge control	
1118	Snippet control	

3.2 1016 – Bottom Detection Adaptive Gate Window and Filters

Description: Controls the bottom detection adaptive gate operation. The nadir search minimum and maximum values are used only if the Adaptive Gate Depth Filter option is enabled (see RC command 1009 – Bottom Detection Mask in the main DFD). The minimum and maximum must differ by at least 2 meters.

Table 21: 7500 Record Data – Command 1016

Name	Size	Description
Window Size	i32	Bottom detection gate size as a percentage of the approximate nadir depth. Valid range is 1-100.
Search Minimum	f32	Minimum depth for initial bottom detection on nadir beam (meters).
Search Maximum	f32	Maximum depth for initial bottom detection on nadir beam (meters).

3.3 1017 – Receiver Gain Type

Description: Sets the receiver gain type.
***This command is only available for selected systems*.**

Table 22: 7500 Record Data – Command 1016

Name	Size	Description
Gain type	u32	0 – TVG 1 – Reserved for Auto Gain 2 – Fixed 3 +- Reserved
Reserved	u32 *4	Reserved

3.4 1020 – Transmit Pulse Envelope Identifier

Description: Sets the Transmit Pulse Envelope.
***This command is only available for selected systems*.**

Table 23: 7500 Record Data – Command 1020

Name	Size	Description
Envelope type	u32	0 – Rectangular 1 – Tukey 2 – FFFFFFFFFF- Reserved
Shading value	f32	Window Shading Value Tukey (0.0-1.0)
Reserved	u32 *4	Reserved

3.5 1029 – Projector Position Relative to Receiver

Description: These are the x, y, z offsets of the transmitter array relative to the position of the receiver array. Positive y is forward, positive x is to the right, and positive z is up, relative to the receiver facing forward.

Table 24: 7500 Record Data – Command 1029

Name	Size	Description
Offset X	f32	In meters
Offset Y	f32	In meters
Offset Z	f32	In meters

3.6 1034 – Match Filter Parameters

Description: Sets the match filter parameters.
This command is only available for selected systems.

Table 25: 7500 Record Data – Command 1034

Name	Size	Description
Window type	u32	0 – Rectangular 1 – Kaiser 2 – Reserved for Hamming 3 – Reserved for Blackmann 4 – Reserved for Triangular 5 – Reserved for X (Taylor) 6 – FFFFFFFFFF – Reserved
Shading value	f32	Window shading value
Reserved	U32 *4	Reserved

3.7 1035 – Coverage Sector

Description: Sets the current coverage sector.
***This command is only available for selected systems*.**

Table 26: 7500 Record Data – Command 1035

Name	Size	Description
Coverage sector	f32	Coverage sector in radians

3.8 1036 – Coverage Mode

Description: Sets the current coverage mode.
***This command is only available for selected systems*.**

Table 27: 7500 Record Data – Command 1036

Name	Size	Description
Coverage mode	u8	0 – Reduce spacing 1 – Reduce beams

3.9 1099 – Stop 7kCenter

Description: Causes 7kCenter process to stop. Should always be acknowledged.
This command has no parameters.

NOTE
This command may cause all settings to be lost.

3.10 1114 – External Trigger

Description: Starts pinging on external trigger. Should always be acknowledged.
This command has no parameters.

3.11 1115 – Trigger Out

Description: Sets output trigger on ping command.

Table 28: 7500 Record Data – Command 1115

Name	Size	Description
State	u32	BIT FIELD: • 0: 1 = enabled; 0 = disabled • 1-31: reserved (must be zero)
Length	f64	Trigger length (is seconds)
Offset	f64	Trigger delay after ping command (in seconds)

3.12 1116 – PPS Edge Control

Description: Sets PPS input edge control.

Table 29: 7500 Record Data – Command 1116

Name	Size	Description
PPS Edge	u32	BIT FIELD: • 0: 0 = Rising; 1 = Falling • 1+: Reserved

3.13 1118 – Snippet Control

Description: Limits snippet sample range.

NOTE
This command may affect old 7008 record's format.

Table 30: 7500 Record Data – Command 1118

Name	Size	Description
Flags	u32	BIT FIELD (1 = enabled): • 0: Use automatic snippet window • 1: Include at least samples around bottom detection (min. window size is valid) • 2: Include at most samples around bottom detection (max. window size is valid) • 3-31: Reserved
Min. Window	u32	Min snippet window (Flags[2])
Max. Window	u32	Max snippet window (Flags[3])

Automatic snippet window, if enabled, is constructed to allow 3dB overlap between beams.

In snippet control command one of the three control flags has to be enabled.

The "default" values are the following:

- Automatic window is enabled
- Minimum window size is enabled and equals to 10
- Maximum window size is enabled and equals to 150