Sargas Railroad AEI RF Reader

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1. BRIEF OVERVIEW

The Sargas reader was originally designed to read ISO 18000-6C toll and access control RF tags. It has now been modified to read railroad AEI RF tags (ISO 10374).

Softrail also redesigned the Sargas interface so that it closely resembles the reader interfaces railroads and suppliers have already developed. This will make it easy for designers to convert their systems to the Sargas reader.

The interface is based on the concept of sending text commands directly over an USB or network connection to the Sargas. This will allow users to test and experiment with the interface by using standard communication applications such as HyperTerminal, Putty, RealTerm, etc.

Some of key features besides size and price of the Sargas are:

- It has both a USB and Ethernet network interface
- It can handle two remote antennas
- It allows up to six systems to connect over the Ethernet network and simultaneously receive AEI tag data
- It can read AEI tags at speed greater than 100 miles per hour
- It has two isolated digital input and two isolated digital outputs
- It can translate tag data into a text format showing the railcar's initial and number

2. Installing the Sargas

You can connect to the Sargas reader either via a network (ethernet) or a USB cable.

- Attach coaxial cables from the ANT1 and ANT2 RP-SMA connectors on the reader to two antennas (see Figure 1).

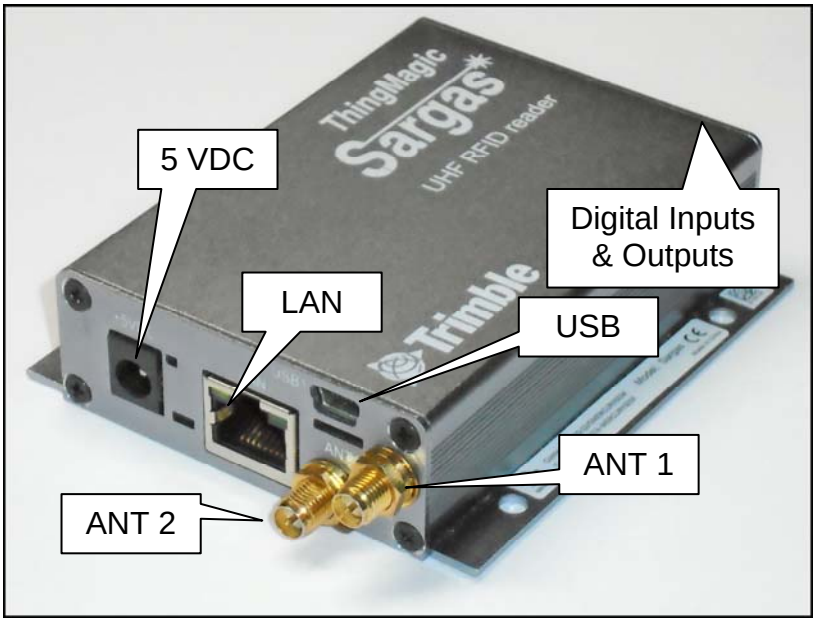

Figure 1- Sargas Railroad AEI RF Reader Module

- Connect a 5V DC power supply (1 amp) to the Sargas Reader. Do not power the reader with a USB cable.

2.1. If connecting with a network cable to connect do the following:

- Attach the LAN cable to your network or directly to your PC.
- When the green LED to the right of the power connector turns on, the reader has obtained a network address from the network's DHCP server, or negotiated one with your PC. This can take several minutes.
- Disable any proxy settings on your PC's IP profile: In your browser LAN settings, disable both automatic configuration and proxy server.
- Enter the URL as indicated into your web browser. The URL of the reader is printed on the side of the module. In Figure 2 the Sargas' URL is Sargas-45b229. If the Sargas Reader is directly connected to a PC, add ".local" to the URL. When prompted, enter "web" as the username and "radio" as the password.

Figure 2 - Sargas URL

2.2. If connecting with an USB cable do the following:

- Attach the USB cable from USB1 directly to your PC. It may take a few minutes for your computer to install the drivers.
- When ready for use, use your browser to connect to http://192.168.7.2. When prompted, enter "web" as the username and "radio" as the password.

After a few moments, you will be connected to the Sargas Web User Interface (WebUI) (see Figure 3).

Please note that most of the functions in the WebUI have been disabled. You can see the reader's status and change the ethernet settings, but almost nothing else.

Figure 3 - Sargas WebUI

- To change the network settings click on “Settings” and then on “Ethernet Interface” which will cause the screen in Figure 4 to appear.

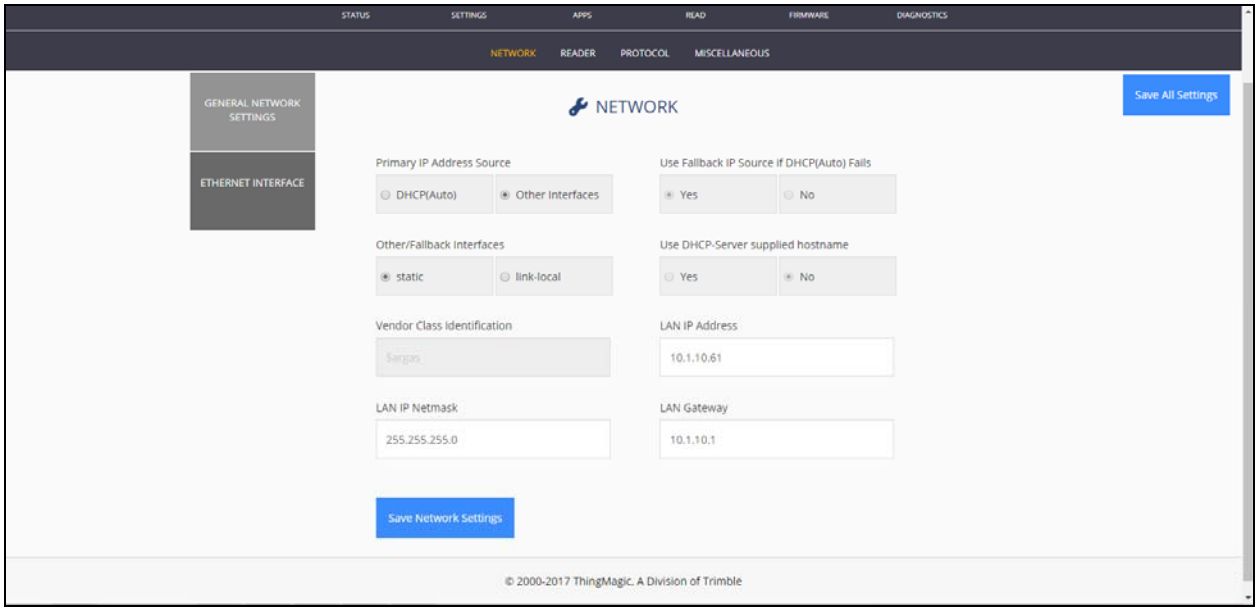

Figure 4 - Sargas Network Settings

Please note that because the Sargas Railroad AEI RF Reader has a special railroad interface, many of the configuration parameters shown in its browser pages have been disabled. The Sargas Railroad AEI RF Reader has been pre-configured to read AEI tags from both antennas as soon as it is powered up. Figure 5 is a HyperTerminal display that shows the communication with the Sargas over a network connection.

As soon a network connection is made on **port 2711** the Sargas will send an information record and begin reading AEI tags. The tag data will be translated into a readable text line showing railcar’s initial and number. If using an USB connection the user’s system must send a “?” to receive the information record.

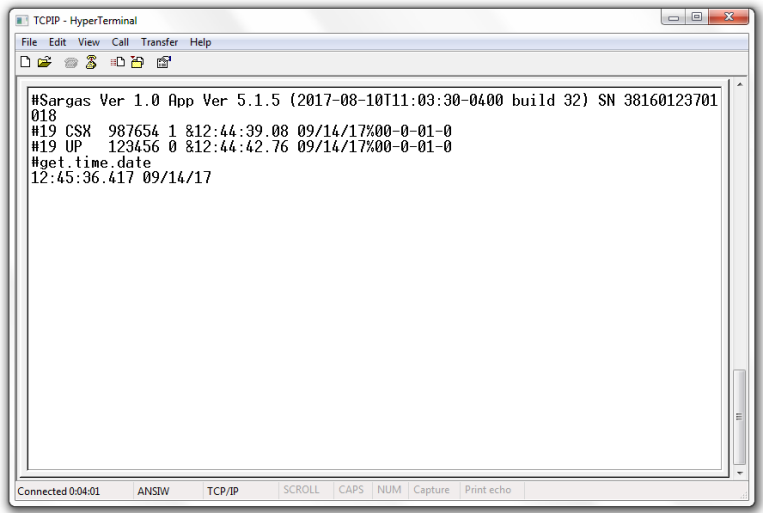

Figure 5 - Sargas Startup Communications

All command and data records start with a # character (hex 23) and end with a carriage return (hex 0D).

The Sargas Railroad AEI RF Reader uses two types of command formats for most functions. The commands that consist of a number (#20 for example) are in a format used by many existing AEI RF readers. The plain text commands (#set.time for example) are used as both a replacement and enhancement to the most commonly used command set. This second command set will allow the users to take advantage of some of the capabilities in the Sargas reader that other readers lack.

3. Connections

The Sargas interface allows commands and data to be sent using either an USB or a network connection. Simultaneous connections to both the USB and network connections are not allowed.

However, multiple network connections (up to 6) will be permitted. Two network ports will be assigned for this interface. Port 2711 will only allow one connection at a time. The host connected to this port will act as administrator and will be able to send the full set of commands to the Sargas reader.

Port 2712 will allow up to five connections. Devices connected to this port will receive tag data records. They will not be able to issue commands to the Sargas reader that control how it operates such as turning the RF on or off or how the tag data is to be received and formatted. Commands that request information from the reader (digital input status, current time, etc.) will be allowed.

The reason for allowing multiple connections is that there are railroad sites where multiple devices from multiple vendors would like to access AEI data from a single reader at the site.

When a network connection is made the Sargas reader it will send the host system the following message, which contains the Sargas reader's version and serial number.

#Sargas Ver X.XX SN SSSSSSSSSS(cr) where:
X.XX is the version number
SSSSSSSSS is the serial number

When a USB connection is made the host system will a "?" character to the Sargas reader, which will respond with this same message, which contains the Sargas reader's version and serial number.

4. Data Structure

Data send from the AEI tag to the reader consists of 128 bits of data. Four of these bits are frame markers (bits 62, 63, 126 & 127 starting with bit 0) and four are checksum bits (bits 60, 61, 124 & 125 starting with bit 0). These bits are not reported by the Sargas reader and are removed from the stream, which reduces the number of bits sent to the host system from the Sargas reader to 120 bits.

The 120 bits of data is sent in one of following three formats.

- Broken down into four data fields as defined in the Association of American Railroads Standard (AAR) S-9203
- 20 6-bit ASCII characters
- 30 hexadecimal characters

The host system can specify which format the tag data records will be sent (see paragraphs 5.7. 5.8 and 5.9). The default is the first example showing tag data translated into the railcar's initial and number.

The following shows examples of these three types of tag data record messages for the same tag:

#19 UP 002289 1 &10:11:17.01 03/16/17%00-0-10-1(cr)

#FXO3 "/&KAD S&10:07:27.06 03/16/17%00-0-27-1(cr)

#9B8BD30023C6AE1900000000000033&14:04:33.899 09/14/17%0-01*-026(cr)

All tag data records start with an "#"character (hex 23) and end with a carriage return character (cr, hex 0D).

4.1. AAR Formatted Fields Tag Data Record

The first data example shows the tag data broken down into the AAR's formatted fields.

Only tags that have a value of hex 33 (decimal 51 or 6-bit ASCII character "S") in bits 114 to 119 (starting with bit 0 and the 20th 6-bit ASCII character just before the "&" character) should be broken down into the AAR formatted fields. If not, the tag data record should be in the 6-bit ASCII format.

#FXO3 "/&KAD S&10:07:27.06 03/16/17%00-0-27-1-192(cr)

For the tag data record above, only four of the formatted fields are reported in the example tag data record shown below.

#19 UP 002289 1 &10:11:17.01 03/16/17%00-0-10-1-199(cr)

The following is the breakdown of the fields:

Field Name	Value in Example	Bits in Data Stream	Conversion Method	Allowable Values
Equipment Code	19	Bits 0 - 4	Binary	5 = Locomotive 19 = Railcar
Equipment Initial	UP(space)(space)	Bits 7 - 25	Base 27 Conversion See Appendix A for more details	A(space)(space)(space) to ZZZZ
Car Number	002289	Bits 26 - 45	Binary	0 to 999999
Side Indicator Code	1	Bit 46	Binary	0 or 1

After the "%" character is the auxiliary data. The following is the breakdown of this data:

xx-y-zz-q

- xx = reader ID (not used, set to 00)
- y = antenna number (0 or 1)
- zz = number times this tag was read (00 to FF hexadecimal)
- q = status of inputs
  - 0 = input 0 low, input 1 low
  - 1 = input 0 high, input 1 low
  - 2 = input 0 low, input 1 high
  - 3 = input 0 high, input 1 high

4.2. 6-Bit ASCII Tag Data Record

In the second example the 20 6-bit ASCII characters after the "#" character represent the 120 bits of tag data. The following table shows the binary equivalent for the 6-bit ASCII characters.

6-Bit ASCII Character	Decimal Value		6-Bit ASCII Character	Decimal Value		6-Bit ASCII Character	Decimal Value		6-Bit ASCII Character	Decimal Value
(space)	0		0	16		@	32		P	48
!	1		1	17		A	33		Q	49
"	2		2	18		B	34		R	50
#	3		3	19		C	35		S	51
$	4		4	20		D	36		T	52
%	5		5	21		E	37		U	53
&	6		6	22		F	38		V	54
'	7		7	23		G	39		W	55
(	8		8	24		H	40		X	56
)	9		9	25		I	41		Y	57
*	10		:	26		J	42		Z	58
+	11		;	27		K	43		[	59
,	12		<	28		L	44		\	60
-	13		=	29		M	45		]	61
.	14		>	30		N	46		^	62
/	15		?	31		O	47		_ Underline	63

Between the "&" and "%" character in the tag data record is the time and date the tag was first read. The following is the breakdown of the time / date data:

HH:MM:SS.hh MM/DD/YY
- HH = hours
- MM = minutes
- SS = seconds
- hh = hundreds of a second
- MM = month
- DD = day
- YY = year

After the "%" character is the auxiliary data. The following is the breakdown of this data:

xx-y-zz-q
- xx = reader ID (not used, set to 00)
- y = antenna number (0 or 1)
- zz = number times this tag was read (00 to FF hexadecimal)
- q = status of digital inputs
  - 0 = input 0 low, input 1 low
  - 1 = input 0 high, input 1 low
  - 2 = input 0 low, input 1 high
  - 3 = input 0 high, input 1 high

4.3. Hexadecimal Tag Data Record

The following third data example shows the tag data broken down into 30 hexadecimal characters.

#9B8BD30023C6AE1900000000000033&14:04:33.899 09/14/17%0-01*-026(cr)

The time / date is somewhat different than two previous tag data record formats. Instead of time being reported in hundredths of a second it is reported in milliseconds.

HH:MM:SS.mmm MM/DD/YY
- HH = hours
- MM = minutes
- SS = seconds
- mmm = milliseconds
- MM = month
- DD = day
- YY = year

After the "%" character is the auxiliary data. The following is the breakdown of this data:

y-zz*sss

- y = antenna number (0 or 1)
- zz = number times this tag was read (00 to FF hexadecimal)
- sss or -sss (if the RSS is negative) = RSSI

4.4. Tag Data Transmission Modes

There are two modes of tag data record transmission. The first is called non-polled where the reader will send the tag data automatically when it reads a tag.

The second mode is called polled where the reader will only sent a tag data record when the host system requests the data by sending the reader a controlled E character (hex 05) or a send.more.data command (see paragraph 5.13).

The host system can specify how the data will be sent by issuing a command (see paragraphs 5.11 and 5.12)

4.5. Digital Input Change Messages

When either one of the two digital inputs changes state a message is automatically sent to the host system from the Sargas reader.

The following is the structure of the message:

#digital.input N AAAA&HH:MM:SS.mmm MM/DD/YY(cr)

where N is the number of the input (0 or 1)
AAAA is either "high" or "low"
HH = hours
MM = minutes
SS = seconds
mmm = milliseconds
MM = month
DD = day
YY = year

Examples:

#digital.input 0 low&12:13:12.123 10/23/17(cr)
#digital.input 1 high&12:15:12.567 10/23/17(cr)

5. Commands

5.1. Command List

The following table shows a list of commands and default values:

Description	Default	Administrator Only Port 2711	Sargas Railroad Command	Existing AEI Reader Equivalent	Reference Paragraph
Check communications		Yes	#are.you.alive		5.2
Set time		Yes	#set.time HH:MM:SS.MMM	#20HH:MM:SS	5.3
Set date		Yes	#set.date MM/DD/YY	#21MM/DD/YY	5.4
Get time and date		No	#get.time.date	#22	5.5
Tag timeout	Set to 120 seconds	Yes	#tag.timeout NNN	#44N	5.6
Report tag as ASCII string		Yes	#tag.ascii	#452	5.7
Decode tag data into AAR format	Yes	Yes	#tag.aar	#453	5.8
Report tag hexadecimal string		Yes	#tag.hex		5.9
Display reader information		No	#reader.info		5.10
No polling of tag data	Yes	Yes	#reader.nopoll	#610	5.11
Poll for tag data		Yes	#reader.poll	#613	5.12
Send more tag data		Yes	#send.more.data	Control E character (hex 05)	5.13
Turn off RF		Yes	#reader.rf.off	#6400	5.14
Turn on RF	Yes	Yes	#reader.rf.on	#6401	5.15
Control RF via digital input		Yes	#reader.rf.input N AAAA	#641	5.16
Set reader frequency	915.50	Yes	#reader.frequency NNN.NN	#647XXX	5.17
Set RF power	30	Yes	#reader.rf.power A NN	#644NN	5.18
Enable antenna	Both antennas enabled	Yes	#antenna.enable A	#85N	5.19
Disable antenna		Yes	#antenna.disable A		5.20
Get digital input		No	#get.input N		5.21
Get digital output		No	#get.output N		5.22
Set digital output		Yes	#set.output N AAAA		5.23
Reboot		Yes	#reader.reboot		5.24

5.2. Are You Alive Command #are.you.alive

Description:
Host devices will want to know if they can communicate with the Sargas reader and will issue this command expecting a response.

Command Structure:
#are.you.alive(cr)

Response for both types of commands:
#Done(cr)

Examples:
#are.you.alive(cr)
#Done(cr)

5.3. Set Time Command #20 or #set.time

When using a network connection, only the host device designated as the administrator can issue this command.

Description:
Sets the time in the Sargas reader.

Command Structure:
#20HH:MM:SS(cr)

#20HH:MM:SS:hh(cr)

#set.time HH:MM:SS.mmm(cr)
HH = hours
MM = minutes
SS = seconds
mmm = millseconds

Response for both types of commands:
#Done(cr)
#Error(cr)

Examples:
#2010:13:17(cr)
#Done(cr)

#set.time 10:13:17.000(cr)
#Done(cr)

5.4. Set Date Command #21 or #set.date

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

Sets the date in the Sargas reader.

Command Structure:

#21MM/DD/YY(cr)

set.date MM/DD/YY(cr)

MM = month
DD = day
YY = year

Response for both type of commands:

#Done(cr)
#Error(cr)

Examples:

#2102/25/17(cr)
#Done(cr)

#set.date 02/25/17(cr)
#Done(cr)

5.5. Get Time / Date Command #22 or #get.time.date

Description:

Gets the Sargas reader's current time and date

Command Structure:

#22(cr)

#get.time.date(cr)

Response for both types of commands:

#HH:MM:SS:hh MM/DD/YY(cr)

HH = hours
MM = minutes
SS = seconds
hh = hundreds of a second
MM = month
DD = day
YY = year

#Error(cr)

Examples:

#22(cr)
#10:13:17:12 02/25/17(cr)

#get.time 10:13:17(cr)
#10:13:17.345 02/25/17(cr)

5.6. Tag Timeout Command #44 or #tag.timeout

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

The reader reads an AEI tag every 12.5 milliseconds. Therefore, the reader will probably read the same AEI tag multiple times. This command allows the user to specify how often the reader will send the same tag data record to the host system when it reads the same tag over and over again. This command has no effect when a different tag is read.

Command Structure:

#44N(cr) where the values of N are:

0 = send tag data the next time it is read
1 = wait 2 minutes before sending the same tag data again (default)
2 = wait 15 seconds before sending the same tag data again
3 = wait 30 seconds before sending the same tag data again

#tag.timeout NNN(cr) where NNN is the timeout in seconds when the same tag will be sent again.

Response for both types of commands:

#Done(cr)
#Error(cr)

Examples:

#440(cr)
#Done(cr)

#tag.timeout 15(cr)
#Done(cr)

5.7. Report Tag Data as ASCII String Command #452 or #tag.ascii

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command causes the reader to send the 120 bits of tag data as string of 20 6-bit ASCII characters.

Command Structure:

#452(cr)

#tag.ascii(cr)

Response for both types of commands:

#Done(cr)
#Error(cr)

Examples:

#452(cr)
#Done(cr)

#tag.ascii(cr)
#Done(cr)

5.8. Decode Tag Data into the AAR Format Command #453 or #tag.aar

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command causes the reader to decode the tag data into the AAR formatted fields.

Command Structure:

#453(cr)

#tag.aar(cr)

Response for both types of commands:

#Done(cr)
#Error(cr)

Examples:

#453(cr)
#Done(cr)

#tag.aar(cr)
#Done(cr)

5.9. Report Tag Data as Hexadecimal String Command #tag.hex

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command causes the reader to send the 120 bits of tag data as string of 30 hexadecimal characters.

Command Structure:

#tag.hex(cr)

Response:

#Done(cr)
#Error(cr)

Examples:

#tag.hex(cr)
#Done(cr)

5.10. Display Reader Information Command #505 or #reader.info

Description:

This command causes the reader to send its version and serial number

Command Structure:

#505(cr)

#reader.info(cr)

Response for both types of commands:

#Sargas Ver X.XX SN SSSSSSSSSS(cr) where:

X.XX is the version number

SSSSSSSSS is the serial number

#Error(cr)

Examples:

#505(cr)
#Sargas Ver 1.10 SN 7161529272(cr)

#reader.info(cr)
#Sargas Ver 1.10 SN 7161529272(cr)

5.11. Reader No Polling Command #610 or #reader.nopoll

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

The reader can send tag data to the host system automatically when the reader reads an AEI tag or can wait until the host system requests the data by polling the reader. This command tells the reader send the data automatically.

Command Structure:

#610(cr)

#reader.nopoll(cr)

Response for both types of commands:
:

#Done(cr)
#Error(cr)

Examples:

#610(cr)
#Done(cr)

#reader.nopoll(cr)
#Done(cr)

5.12. Reader Polling Command #613 or #reader.poll

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

The reader can send tag data to the host system automatically when the reader reads an AEI tag or can wait until the host system requests the data by polling the reader. This command tells the reader send the data only when it is polled (control E hex 05 or send.more.data).

Command Structure:

#613(cr)

#reader.poll(cr)

Response for both types of commands:

#Done(cr)
#Error(cr)

Examples:

#613(cr)
#Done(cr)

#reader.poll(cr)
#Done(cr)

5.13. Request More Tag Records Command Control E (hex 05) or #send.more.data

Description:

The reader can send tag data to the host system automatically when the reader reads an AEI tag or can wait until the host system requests the data by polling the reader. This command tells the reader to send the next tag data record.

Command Structure:

Control E Character (hex 05)

#send.more.data(cr)

Response for both types of commands:

#No tag data(cr)

#9B8BD30023C6AE1900000000000033&14:04:33.899 09/14/17%0-01*-026 (cr)
Tag data record 30 hexadecimal characters example

#Error(cr)

Examples:

Control E Character (hex 05)
#No tag data(cr)

#send.more.data(cr)
#No tag data(cr)

5.14. Turn RF Off Command #6400 or #reader.rf.off

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command tells the reader to stop reading AEI tags by turning off the RF.

Command Structure:

#6400(cr)

#reader.rf.off(cr)

Response for both types of commands:

#Done(cr)
#Error(cr)

Examples:

#6400(cr)
#Done(cr)

#reader.rf.off(cr)
#Done(cr)

5.15. Turn RF On Command #6401 or #reader.rf.on

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command tells the reader to start reading AEI tags by turning on the RF.

Command Structure:

#6401(cr)

#reader.rf.on(cr)

Response:

#Done(cr)
#Error(cr)

Examples:

#6401(cr)
#Done(cr)

#reader.rf.on(cr)
#Done(cr)

5.16. Control RF via Digital Input Command #641 or #reader.rf.input

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command tells the reader to turn off the RF based on status of one of the digital inputs being high or low.

Command Structure:

#641(cr) turns RF on when digital input 0 is high

#reader.rf.input N AAAA(cr) where:

N identifies the digital input (0 or 1)

AAAA is the input value that turns the RF on (high or low)

Response for both types of commands:

#Done(cr)

#Error(cr)

Examples:

#641(cr)

#Done(cr)

#reader.rf.input 0 high(cr)

#Done(cr)

5.17. Set Reader Operating Frequency #647XXX or #reader.frequency

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command sets the reader's operating frequency. Please note the RF must be off when the frequency is changed.

Command Structure:

#647XXX(cr) where XXX is a hexadecimal value from 0 to 118 that set the frequency from 860 to 930 MHz in 250 KHz steps. The following table shows some of these values:

Command	RF Frequency (MHz)
6470CF	911.75
6470D0	912.00
6470D1	912.25
6470D2	912.50
6470D3	912.75
6470D4	913.00
6470D5 to 6470E9	913.25 to 918.25 in .25 increments
6470EA	918.50
6470EB	918.75
6470EC	919.00
6470ED	919.25
6470EE to 647117	919.50 to 929.75 in .25 increments
647118	930.00

#reader.frequency xxx.xx(cr) where xxx.xx is the frequency in MHz.

Response for both types of commands:

#Done(cr)
#Error(cr)

Examples:

#6470EA(cr)
#Done(cr)

#reader.frequency 918.50(cr)
#Done(cr)

5.18. Set the RF Power #644NN or #reader.rf.power

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command sets the reader's RF power. Please note that the #644NN sets the power level for both antennas. The #reader.rf.power command allows power to be set for each individual antenna.

Command Structure:

#644NN(cr) where NN defines the power level based on the following table:

Variable	Attenuation Setting (dB)	Sargas Power Setting
00	0 default	30 default
01	1	27
02	2	24
03	3	21
04	4	18
05	5	15
06	6	12
07	7	9
08	8	6
09	9	3
0A	10	0

#reader.rf.power A NN(cr) where:

A identifies the antenna (0 or 1)
NN is the Sargas power setting

Response:

#Done(cr)
#Error(cr)

Examples:

#64400(cr)
#Done(cr)

#reader.rf.power 0 30(cr)
#Done(cr)

5.19. Enable Antenna Command #85 or #antenna.enable

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command tells the reader to enable an antenna to read AEI tags.

Command Structure:

#85N(cr) where A has the following values:

0 = turn antenna 0 on only.
1 = turn antenna 0 and 1 on

#antenna.enable A(cr) where A is the antenna

Response for both types of commands:

#Done(cr)
#Error(cr)

Examples:

#850(cr)
#Done(cr)

#antenna.enable 0(cr)
#Done(cr)

5.20. Disable Antenna Command #antenna.disable

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command tells the reader to disable an antenna to read AEI tags.

Command Structure:

#antenna.disable A(cr) where A is the antenna (0 or 1)

Response:

#Done(cr)
#Error(cr)

Examples:

#antenna.disable 0(cr)
#Done(cr)

5.21. Get Digital Inputs #get.input

Description:
This command retrieves the status from the two digital inputs.

Command Structure:

#get.input N(cr) where N is the number of the input (0 or 1)

Response:
#AAAA (cr) where AAAA is either “high” or “low”
#Error(cr)

Examples:

#get.input 0(cr)
#high(cr)

5.22. Get Digital Outputs #get.output

Description:
This command retrieves the status from the two digital outputs.

Command Structure:

#get.output N(cr) where N is the number of the input (0 or 1)

Response:
#AAAA (cr) where AAAA is either “high” or “low”
#Error(cr)

Examples:

#get.output 0(cr)
#high(cr)

5.23. Set Digital Output #set.output

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command sets the status the two digital outputs.

Command Structure:

#set.output N AAAA(cr) where:

N is the number of the output(0 or 1)

AAAA is “high” or “low”

Response:

#Done(cr)

#Error(cr)

Examples:

#set.output 0 high(cr)

#Done(cr)

5.24. Reboot #reader.reboot

When using a network connection, only the host device designated as the administrator can issue this command.

Description:

This command reboots the Sargas reader.

Command Structure:

#reader.reboot (cr):

Response:

none

Examples:

#reader.reboot(cr)

6. Technical Support and Updates

Periodically Softrail issues maintenance releases and new versions of the software. Maintenance releases are free and correct problems found with the program and/or provide minor enhancements to the program. Before contacting us with problems we suggest you contact your sales representative and review the issues with him and/or check our web page at www.aeitag.com to insure that you have the latest maintenance release of the program.

Technical support is free for the first one year after purchase, but is limited to two hours of support for each portable reader that is purchased. Time is charged in blocks of 15 minutes.

A maintenance agreement can be purchased to extend the period of technical support or add additional hours.

For technical support or more information on the maintenance agreement, contact Softrail at:

Softrail, Inc.
1098 Venetia Road
Eighty-Four, PA 15330

Tel. 888 872-4612 (toll free US and Canada only) or 724 942-1473
Fax. 724 942-1480
E-mail aei@signalcc.com
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