

5000 Series 3000 Digital Series 3000 Series

IP Control Protocol Specifications

UHF Wireless Systems
Digital UHF Wireless Systems

ATW-R5220

ATW-R5220DAN

ATW-DR3120

ATW-DR3120DAN

ATW-R3210N

Revision history

Date	Version	Description of change
2019/01/09	1.0.0	First version
2019/12/19	1.1.0	Adding ATW-R3210N, Minor error correction

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1 Preface

1.1 Purpose of this document

This document refers to the command specification of the wireless system developed by Audio-Technica Limited.

1.2 Definition of technical terms/Numerical value regulation

The following table defines technical terms and numerical values, which are used in this document.

Technical Term	Definition
Host	Device, which outputs the control commands. Refers to application software and control devices.
Device	Device, which receives control commands.
AT Device	Refers to devices developed by audio-technica.
Message	A character string, which is embedded in a data format and sent and received with one message.
Command	A command to control a device. Embedded in a message.
Parameter	Used in combination with commands. A setting value, which defines the operation of a command.

<Numerical values>

Binary code · · · · Shown with a “b” after the character string.

Example: 1010 0110b

Hexadecimal system · · · Shown with an “0x” before the character string.

Example: 0xA6

2 Basic Specification

The IP control function executes the operation of the wireless system through TCP or UDP protocol.

2.1 Transmission Interface

Table 2-1 Communication Interface

No	Item	Content	Remarks
1.	Communication type	Full duplex	
2.	Transfer rate	10Mbps / 100Mbps	
3.	Port number	TCP:17300 UDP:17000	Static. Not changable.
4.	Maximum data length ¹	287byte (including "Carriage Return")	Ethernet header 32byte, Control command 255byte
5.	Connector type	Device: RJ45 connector (10/100Mbps suitable) Cable: More than CAT5e	

¹ File Transfer Request and Export Request are exceptions.

2.2 Command Protocol

Transmitting and receiving commands are classified as follows.

Table 2-2 Communication Interface

No	Command	Content	Remarks
1.	<u>Set Command</u>	Action Command	Changes wireless system settings
2.	<u>Get Command</u>	Action Command	wireless system setting; Status acquisition
3.	ACK	Acknowledgment	Response to "Set Command"
4.	NAK	Negative Acknowledgment	Response to "Set Command"
5.	Answer	Setting Status Notification	Answer to "Get Command"
6.	Information	Changing Status Notification	wireless system setting; Information on changing status
7.	Request	Action Request	Executes action request to Host

2.2.1 Common Command

- ① For delimiter, half-width space (␣ : 0x20) will be used.
- ② Commands use basically ASCII code. For specific commands UTF-8 is used (Example: Device naming etc.)
- ③ The termination of a command is CR(0x0d).

[Example].

sprch␣S␣0000␣00␣NC␣1, , 1, , , 1, 471250000, 01, 01, 0␣↵

sprch␣ACK␣↵

sprch␣NAK␣01␣↵

gprch␣0000␣00␣NC␣2, , 0, , , 1, 580925000, 03, 12, 1␣↵

MD␣nprch␣0000␣00␣NC␣1, 0, 0, 11, 0, 1234, 0, 808750000, 0, 0␣↵

- ␣ . . . means space
- ↵ . . . means CR(0x0d)
- ■ . . . means command parameter

2.2.2 Set Command/Get Command/Request Command

The table below shows command protocol of the action commands.

Table 2-3 Command protocol of action commands

No.	Item	Content	Size	Remarks
1.	Command	Command string	5byte	Refer to "3.Table of commands"
2.	Handshake Select	Sequence execution system	1byte	H: Handshake method (Unused) O: One-Way method S: ACK/NAK format
3.	Model ID	Unused	4byte	Fixed 0000
4.	Unit No	Unused	2byte	Fixed 00
5.	Continue Select	Divided message system	2byte	NC: No divided message CS: Head of divided message CM: Divided message CE: End of divided message
6.	Parameter	Command parameter	0byte~	Refer to chapter 4
7.	End Character	Sign for end of message	1byte	CR (0x0D)

2.2.2.1 Abbreviation of parameters

When a command is sent by the host, the following parameters can be abbreviated. This is done by using comma (,) punctuation for unspecified data.

Example. When a whole abbreviation of the parameter

sprch_S_0000_00_NC_ , , , , , , , , , , _↵

However, depending on the command

- "Error" can occur when a whole abbreviation of the parameter
- "Unspecified" can occur when no abbreviation of the parameter

Cases above and parameters which cannot be abbreviated are described by each command from chapter 4.2 on.

2.2.3 ACK

Below, is the acknowledgment command format.

Table 2-4 Response to the acknowledgment command format

No	Item	Content	size	Remarks
1.	Command	Command string	5byte	Refer to “3. Table of commands”
2.	ACK	ACK	3byte	Fixed ACK
3.	End Character	Sign for end of message	1byte	CR (0x0D)

2.2.4 NAK

Below, is the negative acknowledgment command format.

Table 2-5 Response to negative acknowledgment command format

No	Item	Content	size	Remarks
1.	Command	Command string	5byte	Refer to “3. Table of commands”
2.	NAK	NAK	3byte	Fixed NAK
3.	Error Code	Error code	2byte	Refer to Table 2-6
4.	End Character	Sign for end of message	1byte	CR (0x0D)

2.2.4.1 Error code

Below, are the error codes.

Table 2-6 Error Code

Error code	Error content	Remarks
01	Grammar error	<ul style="list-style-type: none"> No mandatory request Failure in mandatory request command string Defined length of a command string is not appropriate Max. length of command string including line feed code is exceeded
02	Invalid command	<ul style="list-style-type: none"> Cannot find command (Refers to an unknown command or a command, which the device cannot use.)
03	Divided Transmission Error	<ul style="list-style-type: none"> Referred to “CM” or “CE” in a state, when “CS” Continue Select is not received.
04	Parameter error	<ul style="list-style-type: none"> Refers to an invalid RX Parameter is out of the defined range When trying to change a parameter, which cannot be changed (i.e. change “Priority” during talk,...)
05	Transmit timeout	Unused
90	Busy	Unable to process due to busy state
92	Busy (Safe Mode)	Unable to process due to p-Fail (power interruption)
93	Busy (Extension ²)	Unable to process due to Extension mode (CU link)
99	Other errors	Other errors than above

² Extension . . . Other CU than Primary when CU link. Set Command transmission to Extension CU will be error.

2.2.5 Answer

Below, is the setting status notification.

Table 2-7 Command format of setting status notification

No	Item	Content	size	Remarks
1.	Command	Command string	5byte	Refer to "3.Table of commands"
2.	Model ID	Unused	4byte	Fixed 0000
3.	Unit No	Unused	2byte	Fixed 00
4.	Continue Select	Divided message system	2byte	NC: No divided message CS: Head of divided message CM: Divided message CE: End of divided message
5.	Parameter	Command parameter	0byte~	Refer to chapter 4 and 5
6.	End Character	Sign for end of message	1byte	CR (0x0D)

2.2.6 Information

Below, is the changing status notification.

Table 2-8 Command format of changing status notification

No	Item	Content	size	Remarks
1.	Modify	MD	2byte	Fixed MD
2.	Command	Command string	5byte	Refer to "3.Table of commands"
3.	Model ID	Unused	4byte	Fixed 0000
4.	Unit No	Unused	2byte	Fixed 00
5.	Continue Select	Divided message system	2byte	NC: No divided message CS: Head of divided message CM: Divided message CE: End of divided message
6.	Parameter	Command parameter	0byte~	Refer to chapter 5
7.	End Character	Sign for end of message	1byte	CR (0x0D)

2.2.7 Request

Below, is the requesting status notification. (This command is not used for wireless system)

Table 2-9 Command format of c status notification

No	Item	Content	size	Remarks
1.	Request	RQ	2byte	Fixed RQ
2.	Command	Command string	5byte	Refer to "3.Table of commands"
3.	Model ID	Unused	4byte	Fixed 0000
4.	Unit No	Unused	2byte	Fixed 00
5.	Continue Select	Divided message system	2byte	NC: No divided message CS: Head of divided message CM: Divided message CE: End of divided message
6.	Parameter	Command parameter	0byte~	Refer to chapter 4
7.	End Character	Sign for end of message	1byte	CR (0x0D)

3 Command List

Table 3-1 Command List

No.	Category	Command	Command Name	Remarks	type			Ref.	
					set	get	info		
1	Model Info	gprmi	Model parameter information acquisition request	Obtain the model parameter information.		○			
2		gveri	Version information acquisition request	Obtain the version information.		○			
3	System Setting	sprch	RX parameter setting change request	Change the parameter settings of each RX.	○				
4		gprch	RX parameter setting acquisition request	Obtain the parameter settings of each RX.		○			
5		nprdh	RX parameter setting change notification	Notify the change in the parameter settings of each RX.			○		
6		sprcm	Common parameter setting change request	Change the parameter settings common to all RX.	○				
7		gprcm	Common parameter setting acquisition request	Obtain the parameter settings common to all RX.		○			
8		nprcm	Common parameter setting change notification	Notify the change in the parameter settings common to all RX.			○		
9		Frequency Setting	sprrx	Receive parameter setting change request	Change the receive parameter settings.	○			
10			gprrx	Receive parameter setting acquisition request	Obtain the receive parameter settings.		○		
11	nprrx		Receive parameter setting change notification	Notify the change in the receive parameter settings.			○		
12	Audio Setting	sprad	Audio parameter setting change request	Change the audio parameter settings.	○				
13		gprad	Audio parameter setting acquisition request	Obtain the audio parameter settings.		○			
14		nprad	Audio parameter setting change notification	Notify the change in the audio parameter settings.			○		
15	Group Setting	sprgr	Group parameter setting change request	Change the group parameter settings.	○				
16		gprgr	Group parameter setting acquisition request	Obtain the group parameter settings.		○			
17		nprgr	Group parameter setting change notification	Notify the change in the group parameter settings.			○		
18	TX Setting	sprtx	TX parameter setting change request	Change the parameter settings to configure TX.	○				
19		gprtx	TX parameter setting acquisition request	Obtain the parameter settings to configure TX.		○			
20	Network Setting	snetw	Network setting change request	Change the network parameter settings.	○				
21		gnetw	Network setting acquisition request	Obtain the network parameter settings.		○			
22		sdant	Dante setting change request	Change the Dante parameter settings.	○				
23		gdant	Dante setting acquisition request	Obtain the Dante parameter settings.		○			
24		silog	Log setting change request	Change the log settings.	○				
25		gilog	Log setting acquisition request	Obtain the log settings.		○			
26		sitlv	Level notification interval setting request	Set the level notification interval.	○				
27		Status	gstch	RX status acquisition request	Obtain the status of each RX.		○		
28	gstcm		Common status acquisition request	Obtain the status common to all RX.		○			
29	nstch		RX status change notification	Notify the status change of each RX.			○		
30	nbumd		Frequency back-up mode change notification	Notify the frequency back-up mode change.			○		
31	nstmt		MUTE status change notification	Notify the MUTE status change.			○		
32	naltm		Temperature alert notification	Notify the temperature increase of the receiver.			○		
33	nstpw		Power status change notification	Notify the power status change.			○		
34	nrbot		Reboot notification	Notify that the system was rebooted.			○		
35	Operation Info	gopfq	Operating frequency information acquisition request	Obtain the operating frequency information.		○			
36	Boot Mode	gmode	Mode acquisition request	Obtain the boot mode.		○			
37	Request	ruloc	UI LOCK request (for scan and walktest)	Perform UI LOCK.	○				
38		rfrst	Reset request (to factory settings)	Reset to the factory settings.	○				
39		rdflp	Display flip and flash request (for identify)	Flip and flash the display.	○				
40		rmute	Mute request (multi-point)	Mute the sound.	○				
41		rspan	Spectrum analyzer function start request	Start the spectrum analyzer function.	○				
42		rrbot	Reboot request	Reboot the system.	○				
43		Level	garlv	Level Acquisition Request	Obtain the audio and RSSI levels and TONE information.		○		
44	narlv		Level notification	Notify the audio and RSSI levels and TONE information.			○		

4 TCP communication

When controlling the wireless system from the host, communication will be based on TCP protocol.

4.1 Communication control

The graphic below illustrates the communication control flow of the IP control.

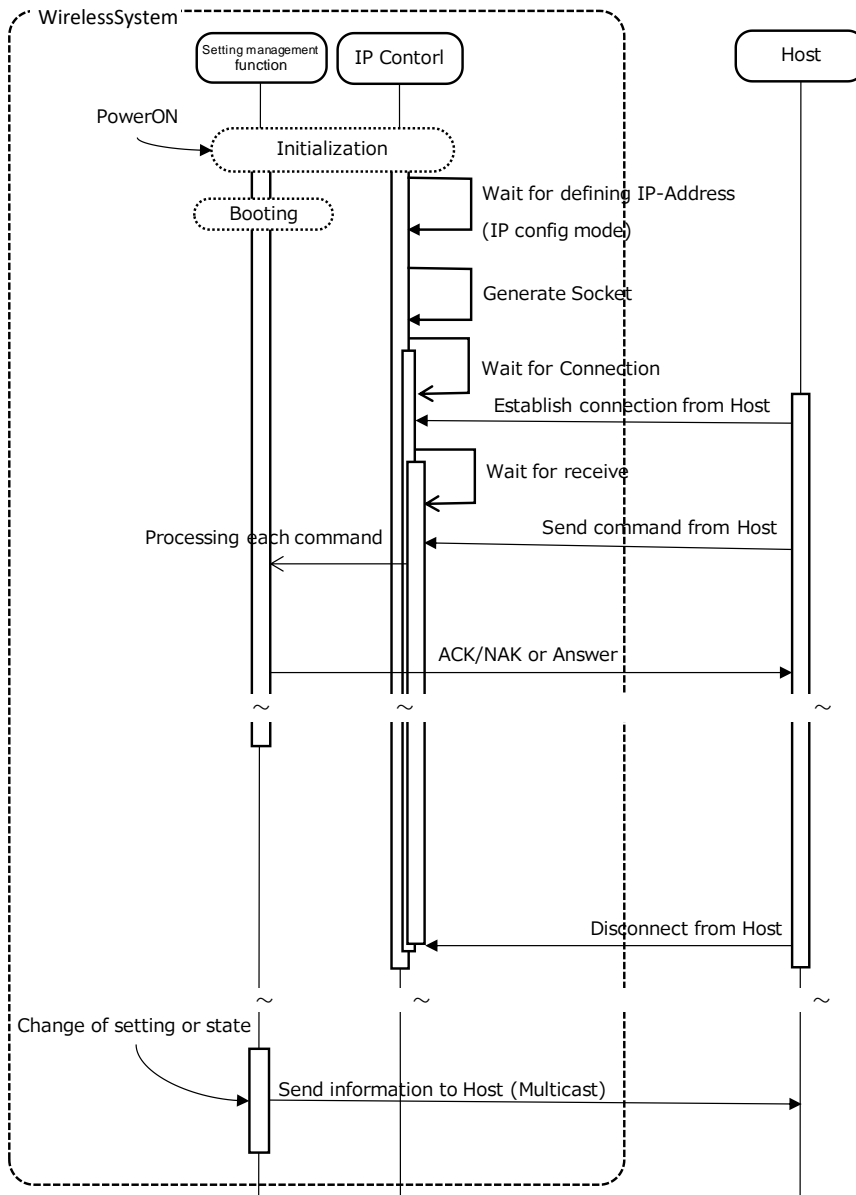


Fig. 4-1 Communication Control Flow

- After the system start, “Initializing” follows “Waiting for connection”
- After established host connection, on “Waiting for connection” follows “Waiting for transmission”
- The received command will be processed depending on the internal process task and a result (ACK/NAK) will be sent. But because this process is asynchronous, it is also possible to receive commands during processing (without waiting for ACK/NAK or Answer, the next command can be sent). Although based on the command, NAK(90:BUSY) can also occur.
- If the host will be disconnected, “Waiting for transmission” changes to “Waiting for connection”

4.1.1 Start of communication

The host establishes a connection to the wireless system.

Simultaneous connection is limited to 1. If this limit is exceeded, the connection will fail.

Table 4-1 Communication control parameter

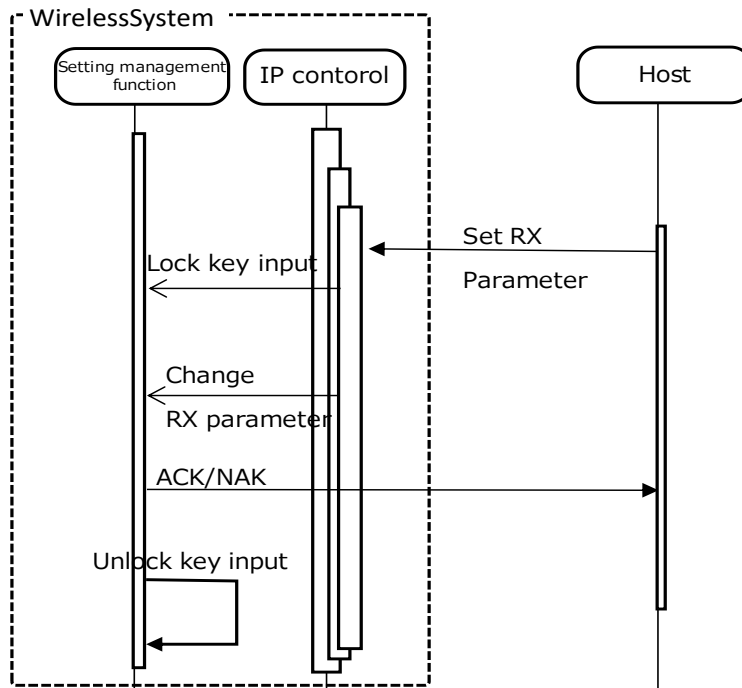
No	Name	Default Setting	Remarks
1.	IPAddress	Auto	
2.	Port No	17300	

4.1.2 Control sequence

4.1.2.1 Set Command

As "Set Command" response, the wireless system sends back ACK/NAK to the source.

<Example> Refer below for change request of RX parameter setting.



Graph 4-2 Set Command Processing Sequence

In terms of Set Command, when errors like grammar error, parameter failure etc. occur, the command NAK will sent to the source and run the key input unlock.

4.1.2.2 Get Command

As "Get Command" response, the wireless system sends back Answer to the source.

<Example> Refer below for Receive Parameter Setting Acquisition Request sequence.

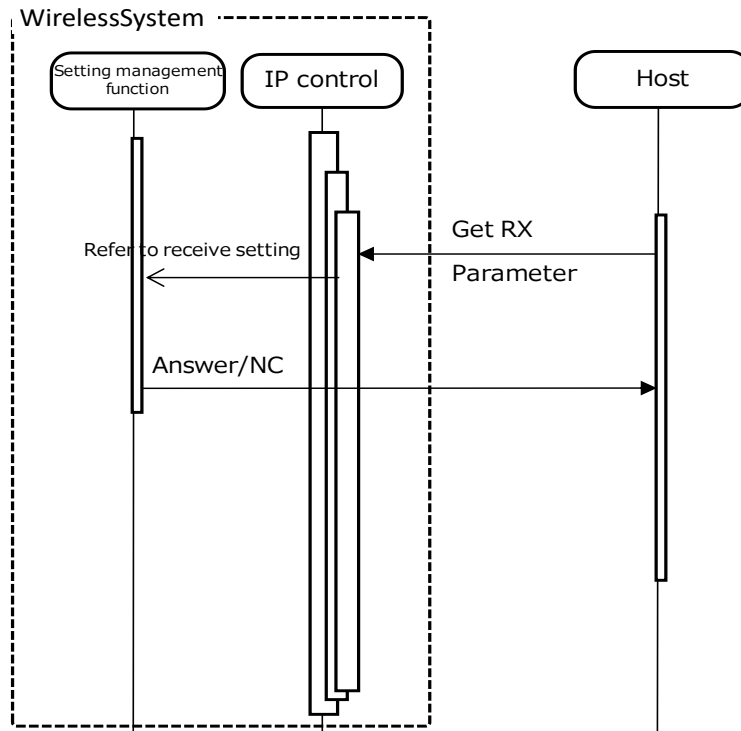


Fig. 4-3 Get Command Process Sequence

Also for Get Command, when errors like grammar error, parameter failure etc. occur, the command NAK will sent to the source.

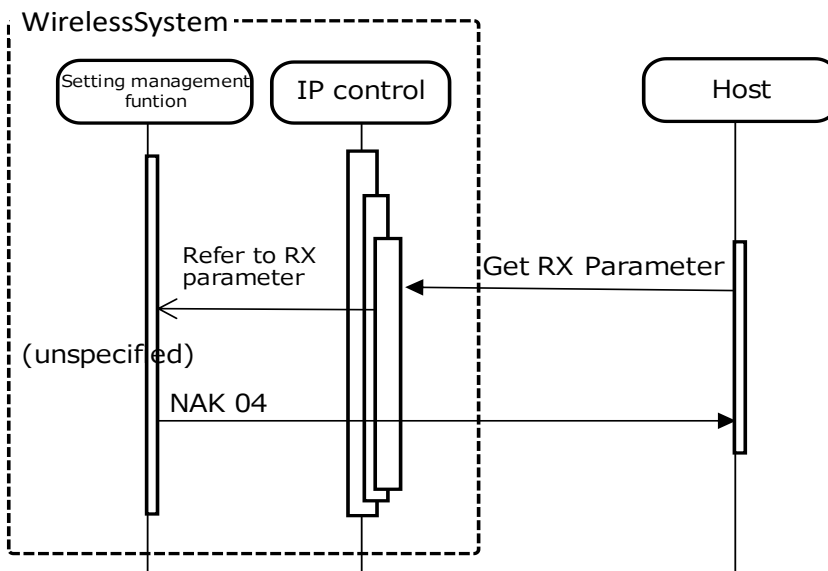


Fig. 4-4 Get Command Process Sequence (NAK)

4.1.2.3 Request Command

The request command sends whether the command was accepted or not to the sender via ACK/NAK and then performs the requested process if it was accepted (ACK response).

There is a subsequent command available to send the measurement result to the sender.

[1] Command involving reset

<Example> The sequence of reset request (to factory settings) is shown below.

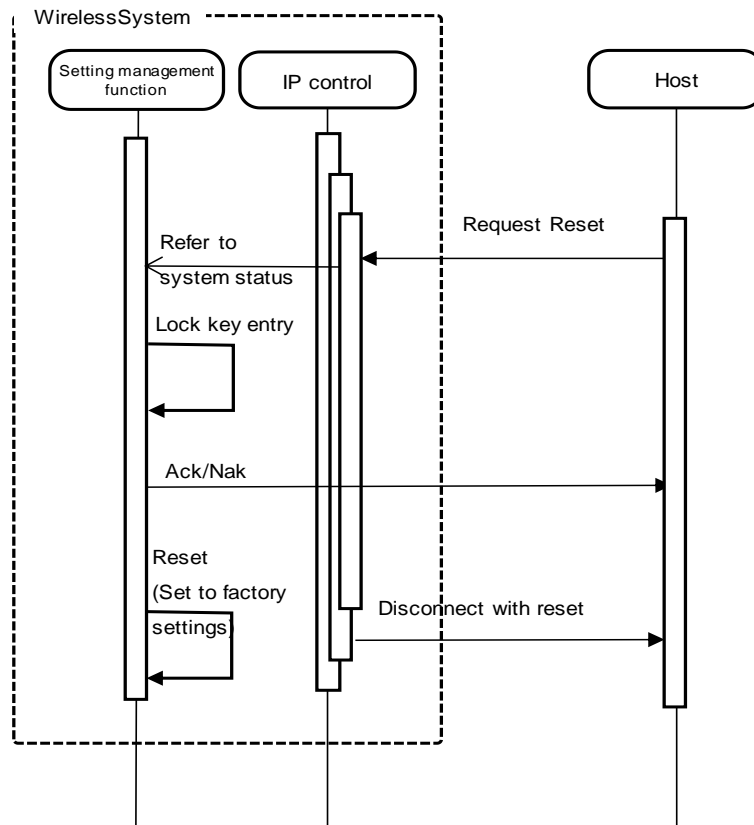


Fig. 4-5 Request Command Process Sequence (Command Involving Reset)

* For NAK responses (telegraphic error, system busy status, etc.), the system is not reset. Key entry is also unlocked.

[2] Command sending the result after measurement
 <Example> The sequence of group scan request (start) is shown below.

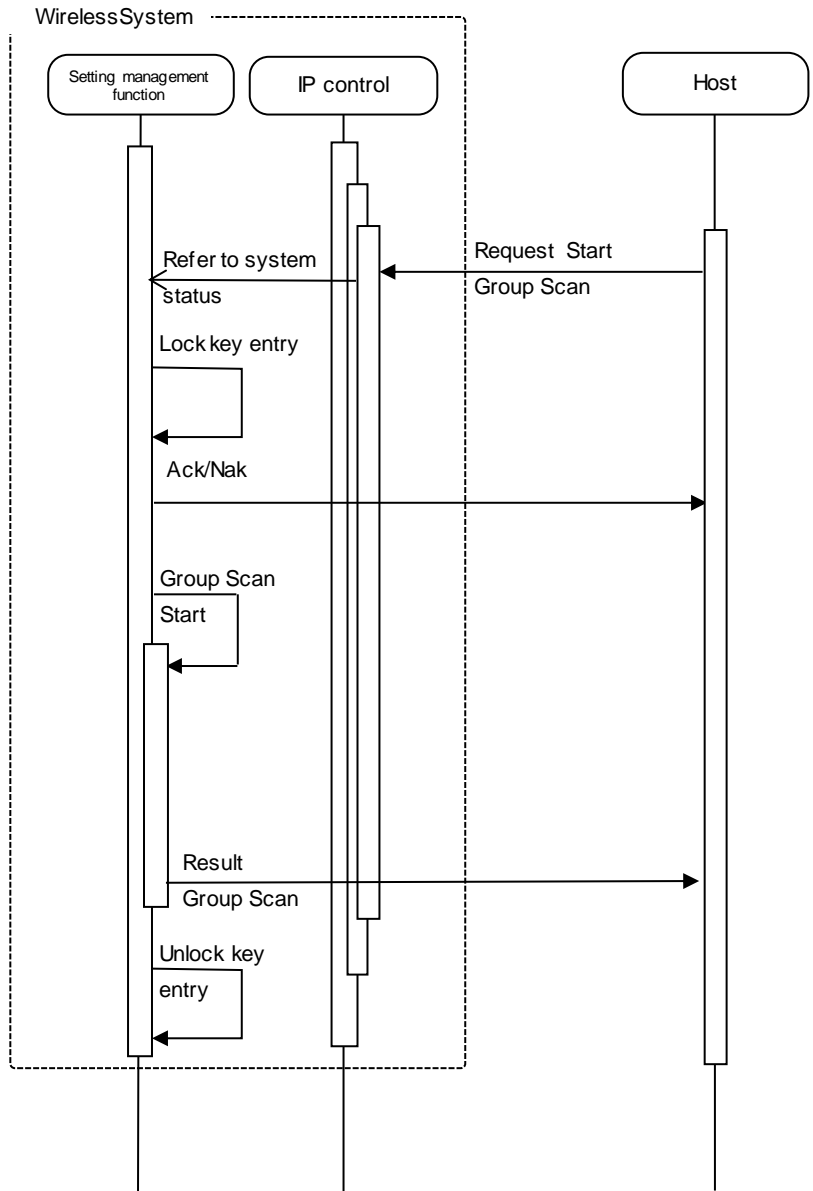


Fig. 4-6 Request Command Process Sequence (Request to Start Command Sending the Result after Measurement)

* For NAK responses (telegraphic error, system busy status, etc.), no process responding to the request is performed. Key entry is also unlocked.

<Example> The sequence of group scan request (stop) is shown below.

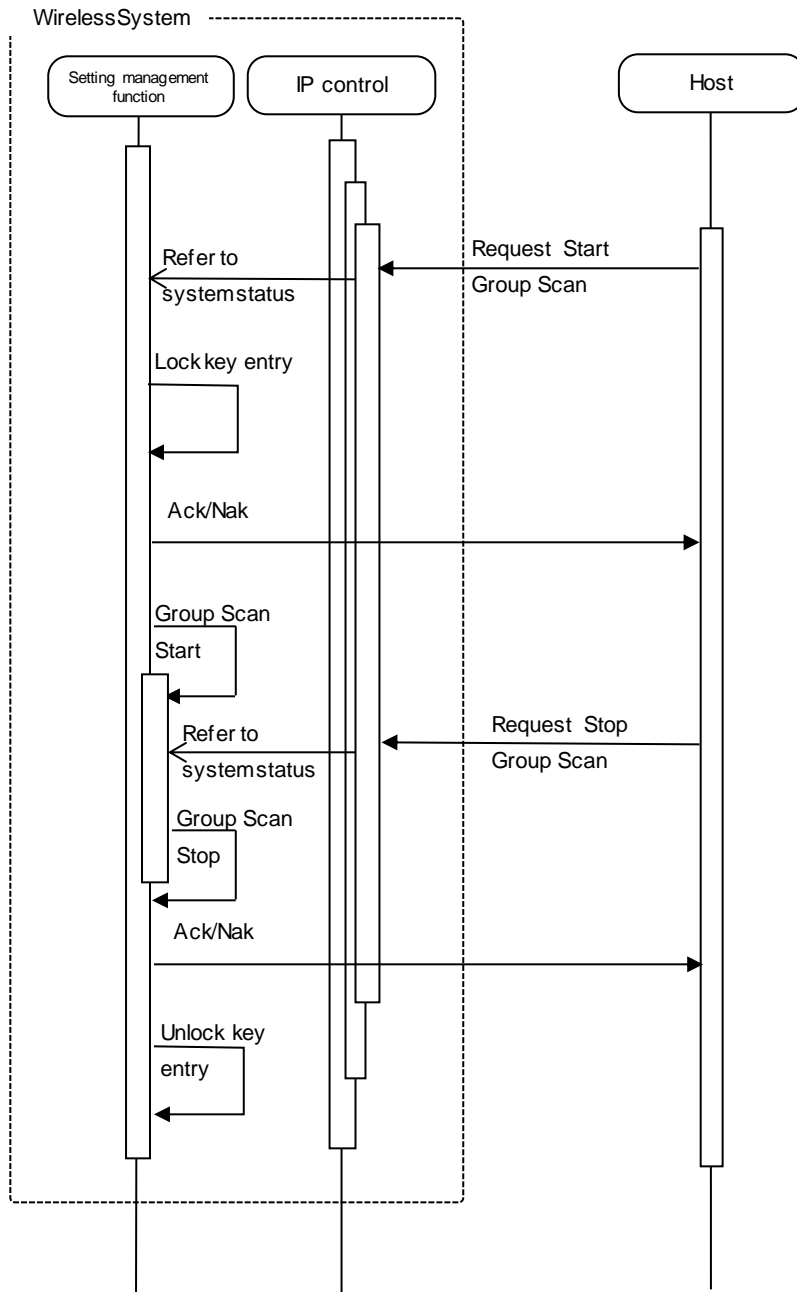


Fig. 4-7 Request Command Process Sequence (Request to Stop Command Sending the Result after Measurement)

* If the command is stopped, the result is not sent.

[3] Command sending the measured value at real-time

<Example> The sequence of spectrum analyzer function request (start) is shown below.

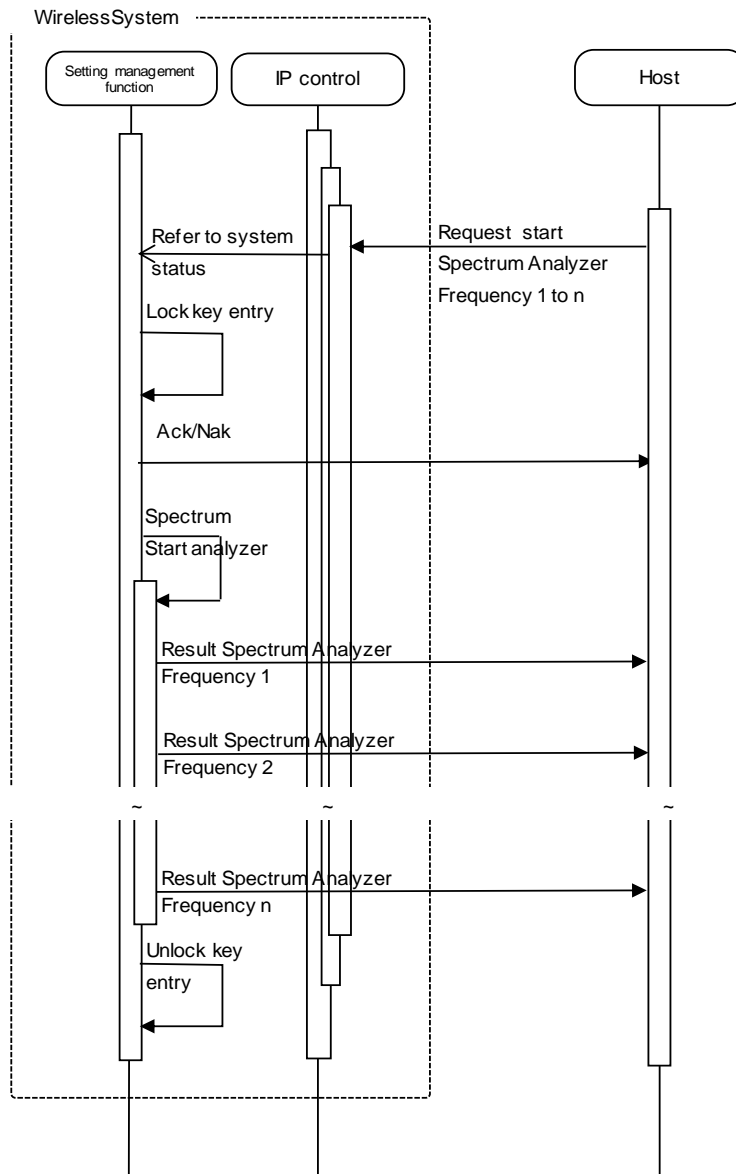


Fig. 4-8 Request Command Process Sequence (Request to Start Command Sending the Measured Value at Real-time)

- * For NAK responses (telegraphic error, system busy status, etc.), no process responding to the request is performed. Key entry is also unlocked.

<Example> The sequence of spectrum analyzer function request (stop) is shown below.

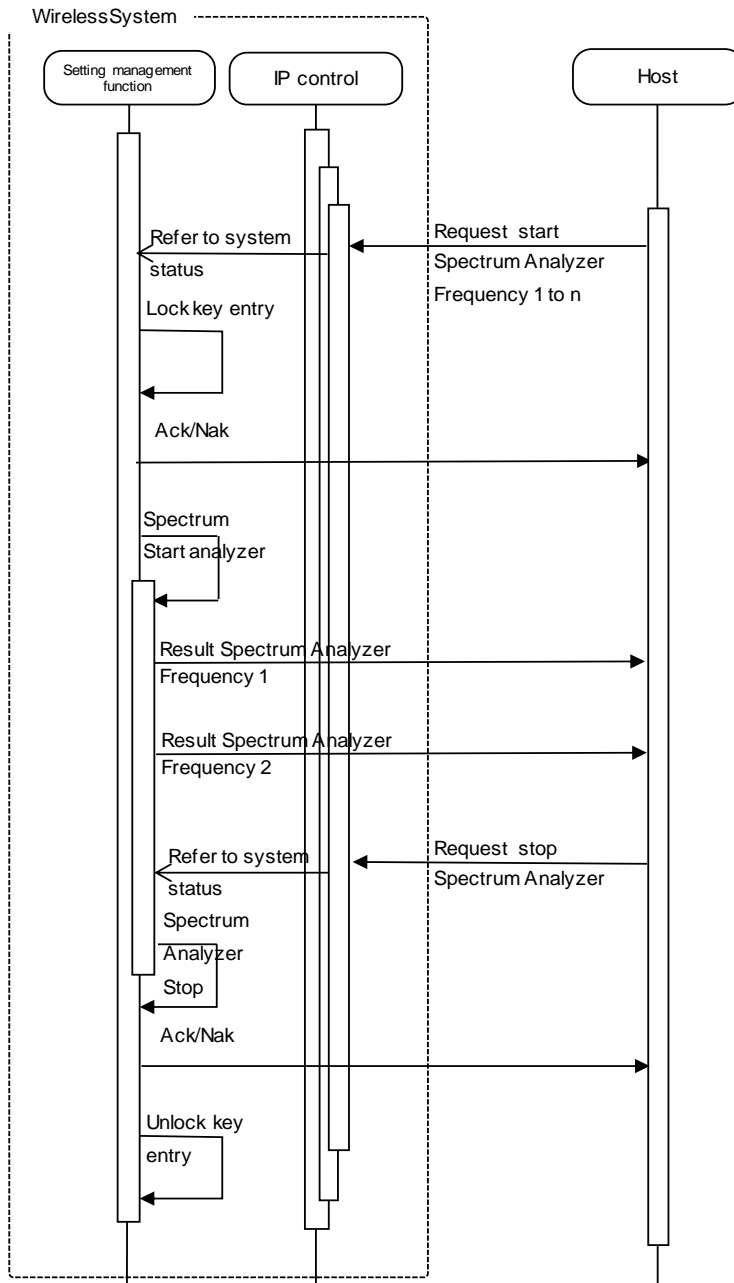


Fig. 4-9 Request Command Process Sequence (Request to Stop Command Sending the Measured Value at Real-time)

* If the command is stopped, subsequent measured values are not sent.

4.1.3 Communication error

4.1.3.1 Transmitting error

Refer below, in case of ACK/NAK transmitting error sequence.

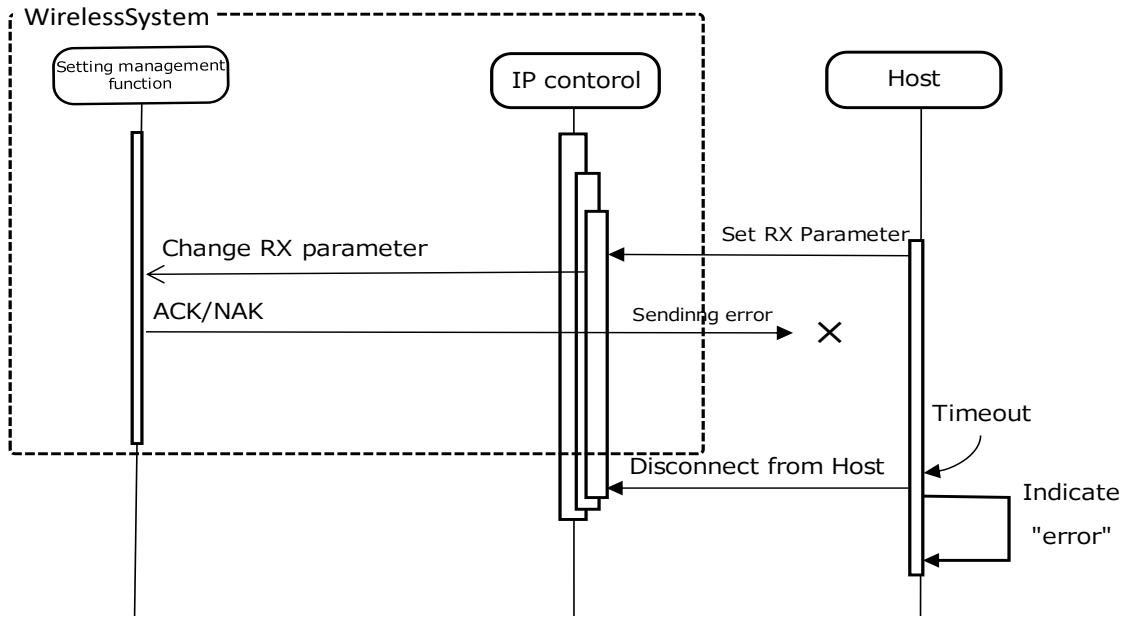


Fig. 4-10 Transmitting Error Sequence

4.1.3.2 Receiving error

Refer below, in case of ACK/NAK receiving error sequence.

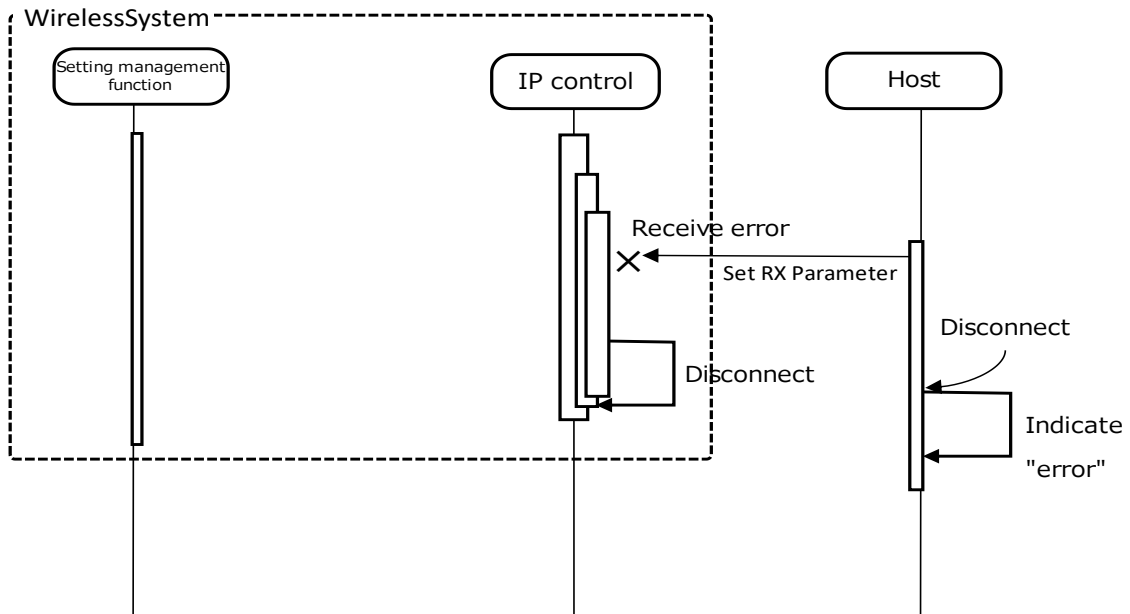


Fig. 4-11 Receiving Error Sequence

4.1.3.3 Divided Message Receiving Timeout

Divided Message is not used for IP control.

4.1.4 End of Communication

The host can disconnect at a random timing while ending the communication.

When a disconnection occurs, the Wireless System clears the status of the applied connection (eg.

While sending a file, etc.) and transitions to "Waiting for connection". Further, the same process applies also in case of a disconnected cable etc.

In case of a repeated communication, the host establishes a connection.

4.2 Command details

Sent commands are arranged the following way as shown in the example below and as pointed out in each categories "Command format table" and "Example".

It is possible to change each parameter, by changing any value which are listed in the table below

Further, it is also possible to change only specific parameters. Parameters, which does not need to be changed, have no entry and will be omitted.

[Example] sprch_S_0000_00_NC_1,,9,,,1,807250000,,,1_↓

Setting target RX: RX1
TCH concealment level designation:
Omitted

RSSI receive limit judgment settings:
LEVEL 10
HD mode: Omitted
PIN code: Omitted

Back-up frequency ON/OFF: ON
Back-up frequency: 471.250 MHz

AF Meter (TX or RX): RX

No	item	Description	type	value	value Description
1	Command	Command string	string	sprch	
2	Handshake Select	Sequence execution method	string	S	
3	Model ID	Not used	string	0000	Not used
4	Unit No	Not used	string	00	Not used
5	Continue Select	Message split method	string	NC	No split
6	Parameter	Parameter			
	RX	Target RX	string	1	RX1
				2	RX2
	TCH ciphering strength	TCH concealment level designation	string	0	Standard
				1	Advanced
	Squelch	RSSI receive limit judgment settings (squelch)	string	nn	
	HD mode	HD mode	string	0	OFF
				1	ON
	PIN	PIN code	string	nnnn	4-digit decimal string
	Back Up Frequency	Back-up frequency information			
	Back Up Frequency Enable	Back-up frequency ON/OFF	string	0	OFF
				1	ON
	Frequency Info	Frequency settings			
	Back Up Frequency	Back-up frequency	string	nnnnnnn	9-digit decimal string (Hz)
	Back Up Group	Back-up group	string	nn	
	Back Up Ch	Back-up gchannel	string	nn	
	AF Meter	AF Meter (TX or RX)	string	0	TX
				1	RX
7	End Character	Message end character	binary	↓	CR(0x0d)

4.2.1 Model Parameter Information Acquisition Request

The Wireless System that received the model parameter information acquisition request sends the model parameter information to the host via Answer.

[1] Get Command

The command format of the model parameter information acquisition request is shown below.

[Example] gprmi_0_0000_00_NC_↵

Table 4-2 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprmi		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gprmi_0000_00_NC_ "ATW-R5220", "DG1", 470125000, 699875000, 000025000, 1, 1, 0, 1, 0, 1, 0, "JP" ↵

Table 4-3 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gveri		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	Model Name	Model name	char	"		If this item contains less than 16 characters, a single-byte blank space is set at the end.
			string	xxxxxxxxxxxxxxxx	16 single-byte characters	
			char	"		
	Band Code	Band code	char	"		If this item contains less than 4 characters, a single-byte blank space is set at the end.
			string	xxxx	4 single-byte characters	
			char	"		
	Corresponding Frequency	Supported frequency				
		Hed Frequency	Supported frequency head	string	nnnnnnnn	9-digit decimal string (Hz)
		End Frequency	Supported frequency end	string	nnnnnnnn	9-digit decimal string (Hz)
	RF Frequency Step	RF frequency step (minimum resolution)	string	nnnnnnnn	9-digit decimal string (Hz)	
	Receive CH Num	Number of receive channels	string	nn		
	AES256/DH Support	AES256/DH support	string	0	Not supported	
					1	
	AT_CODEC: 3 Support	AT_CODEC: 3 support	string	0	Not supported	
					1	
	4bit 128k Support	4-bit 128 k support	string	0	Not supported	
					1	
	64k Support	64 k support	string	0	Not supported	
					1	
	192k Support	192 k support	string	0	Not supported	
					1	
	HD mode Support	HD mode support	string	0	Not supported	
					1	
	Destination Code	Destination code	char	"		If this item contains less than 6 characters, a single-byte blank space is set at the end.
			string	JP	6 single-byte characters	
			char	"		
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.2 Version Information Acquisition Request

The Wireless System that received the version information acquisition request sends the version information to the host via Answer.

[1] Get Command

The command format of the version information acquisition request is shown below.

[Example] gver i_0_0000_00_NC_↵

Table 4-4 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gveri		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gveri_0000_00_NC_ "001.000.000", "002.000.000", "003.000.000", "004.000.000", " ", " ", " " ↵

Table 4-5 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gveri		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	ZIP File Version	ZIP integrated file version	char	"		If this item contains less than 12 characters, a single-byte blank space is set at the end.
			string	nnn.nnn.nnn	12 single-byte characters	
			char	"		
	MCU F/W Version	MCU F/W version	char	"		If this item contains less than 12 characters, a single-byte blank space is set at the end.
			string	nnn.nnn.nnn	12 single-byte characters	
			char	"		
	SoC (DSP+ARM) F/W Version	SoC (DSP+ARM) F/W version	char	"		Blank for ATW-R5220 / R3210N (Not supported) If this item contains less than 12 characters, a single-byte blank space is set at the end.
			string	nnn.nnn.nnn	12 single-byte characters	
			char	"		
	FPGA F/W Version	FPGA F/W version	char	"		Blank for ATW-R5220 / R3210N (Not supported) If this item contains less than 12 characters, a single-byte blank space is set at the end.
			string	nnn.nnn.nnn	12 single-byte characters	
			char	"		
	TX(BP) F/W Version1	Body-pack Tx F/W version	char	"		The latest version of synced TX. Not synced : 12 single-byte spaces (fixed)
			string	nnn.nnn.nnn	12 single-byte characters	
			char	"		
	TX(HH) F/W Version2	Handheld Tx F/W version	char	"		The latest version of synced TX. Not synced : 12 single-byte spaces (fixed)
			string	nnn.nnn.nnn	12 single-byte characters	
			char	"		
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.3 RX Parameter Setting Change Request

The Wireless System that received the RX parameter setting change request sends the processing result to the host via ACK or NAK.

[1] Get Command

The command format of the RX parameter setting change request from the host is shown below.

[Example] sprch_S_0000_00_NC_1,"ATWR5220",,1,,,0,480750000,,_↓

Table 4-6 Command Format

No	item	Description	type	value	value Description	remarks	
1	Command	Command string	string	sprch			
2	Handshake Select	Sequence execution method	string	S			
3	Model ID	Not used	string	0000	Not used		
4	Unit No	Not used	string	00	Not used		
5	Continue Select	Message split method	string	NC	No split		
6	Parameter	Parameter					
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N	
				2	RX2		
	RX Name	RX name	string	xxxxxxx	8 single-byte characters or less	The available characters are A to Z, 0 to 9, symbols (_+,#&), and single-byte space. Lowercase alphabets are converted to uppercase alphabets. If this item contains less than 8 characters, a single-byte blank space is set at the end.	
				char			"
				char			"
	AES 256	AES 256	string	0	OFF	Ignored for ATW-R5220 / R3210N (Not supported)	
				1	ON		
	Squelch	RSSI receive limit judgment settings (squelch)	string	0	OFF	Ignored for ATW-DR3120 (Not supported) 1 to squelch level	
				nn	1 to 16		
	RF mode	RF mode	string	0	Normal	Ignored for ATW-R5220 / R3210N (Not supported)	
				1	HD Mode		
	PIN	PIN code	string	nnnn	4-digit decimal string	Ignored for ATW-R5220 / R3210N (Not supported)	
	Back Up Frequency	Back-up frequency information					
	Back Up Frequency Enable	Back-up frequency ON/OFF	string	0	OFF	Ignored for ATW-DR3120 HH1 band (Not supported)	
				1	ON		
	Frequency Info	Frequency settings (For the Group and Ch parameter ranges, see 6.6 Group Table.)					
	Back Up Frequency	Back-up frequency	string	nnnnnnnn	9-digit decimal string (Hz)	When Back Up Frequency is set, set Back Up Group and Back Up Ch to blank. Ignored for ATW-DR3120 HH1 band (Not supported)	
	Back Up Group	Back-up group	string	nn	1 or above	When Back Up Group and Back Up Ch are set, set Back Up Frequency to blank. Ignored for ATW-DR3120 HH1 band (Not supported)	
	Back Up Ch	Back-up channel	string	nn	1 or above	When Back Up Group and Back Up Ch are set, set Back Up Frequency to blank. Ignored for ATW-DR3120 HH1 band (Not supported)	
	AF Meter	AF Meter (TX or RX)	string	0	RX		
				1	TX		
7	End Character	Message end character	binary	↓	CR(0x0d)		

[2] ACK/NAK

[Example] sprch_ACK_↓

Table 4-7 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sprch		The received command is set.
2	ACK	ACK	string	ACK		
3	End Character	Message end character	binary	↓	CR(0x0d)	

[Example] sprch_NAK_01_↓

Table 4-8 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sprch		The received command is set.
2	NAK	NAK	string	NAK		
3	Error Code	Error code	string	00 to 99	Error code	Refer to Chapter 2.2.4.
4	End Character	Message end character	binary	↓	CR(0x0d)	

4.2.4 RX Parameter Setting Acquisition Request

The Wireless System that received the RX parameter setting acquisition request sends the RX parameter setting to the host via Answer.

[1] Get Command

The command format of the RX parameter setting acquisition request from the host is shown below.

[Example] gprch_0_0000_00_NC_1_↓

Table 4-9 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprch		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	CH	Target channel	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
7	End Character	Message end character	binary	↓	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gprch_0000_00_NC_1,"ATWR5220",,1,,0,470125000,0,0,0_↓

Table 4-10 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprch		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Only RX1 on ATW-R3210N
				2	RX2	
	RX Name	RX name	char	"		If this item contains less than 8 characters, a single-byte blank space is set at the end.
			string	xxxxxxxx	8 single-byte characters	
			char	"		
	AES 256	AES 256	string	0	OFF	Blank for ATW-R5220 / R3210N (Not supported)
				1	ON	
	Squelch	RSSI receive limit judgment settings (squelch)	string	0	OFF	Blank for ATW-DR3120 (Not supported) 1 to squelch level
				nn	1 to 16	
	RF mode	RF mode	string	0	Normal	Blank for ATW-R5220 / R3210N (Not supported)
				1	HD Mode	
	PIN	PIN code	string	nnnn	4-digit decimal string	Blank for ATW-R5220 / R3210N (Not supported)
	Back Up Frequency	Back-up frequency information				
	Back Up Frequency Enable	Back-up frequency ON/OFF	string	0	OFF	Blank for ATW-DR3120 HH1 band (Not supported)
				1	ON	
	Frequency Info	Frequency settings (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Back Up Frequency	Back-up frequency	string	nnnnnnnn	9-digit decimal string (Hz)	Blank for ATW-DR3120 HH1 band (Not supported)
	Back Up Group	Back-up group	string	nn	1 or above	When Back Up Frequency is manually set, set Back Up Group and Back Up Ch to 0. Blank for ATW-DR3120 HH1 band (Not supported)
	Back Up Ch	Back-up channel	string	nn	1 or above	When Back Up Frequency is manually set, set Back Up Group and Back Up Ch to 0. Blank for ATW-DR3120 HH1 band (Not supported)
	AF Meter	AF Meter (TX or RX)	string	0	RX	
				1	TX	
6	End Character	Message end character	binary	↓	CR(0x0d)	

4.2.5 Common Parameter Setting Change Request

The Wireless System that received the common parameter setting change request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the common parameter setting change request from the host is shown below.

[Example] sprcm_S_0000_00_NC_1,,↵

Table 4-11 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sprcm		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	ANT DC power	ANT DC power	string	0	OFF	
				1	ON	
	Brightness	Brightness	string	0	Low	
				1	High	
	RX LOCK	RX LOCK	string	0	Unlock	
				1	Lock	
	ACCESS	ACCESS	string	0	Free Turning	Blank for ATW-DR3120 HH1 band (Not supported)
				1	User Group Only	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.6 Common Parameter Setting Acquisition Request

The Wireless System that received the common parameter setting acquisition request sends the common parameter setting to the host via Answer.

[1] Get Command

The command format of the common parameter setting acquisition request from the host is shown below.

[Example] gprcm_0_0000_00_NC_↵

Table 4-12 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprcm		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gprcm_0000_00_NC_0,1,0,0_↵

Table 4-13 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprcm		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	ANT DC power	ANT DC power	string	0	OFF	
				1	ON	
	Brightness	Brightness	string	0	Low	
				1	High	
	RX LOCK	RX LOCK	string	0	Unlock	
				1	Lock	
	ACCESS	ACCESS	string	0	Free Turning	Blank for ATW-DR3120 HH1 band (Not used)
				1	User Group Only	
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.7 Receive Parameter Setting Change Request

The Wireless System that received the receive parameter setting change request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the receive parameter setting change request from the host is shown below.

[Example] sprrx_S_0000_00_NC_1,,01,01,↵

Table 4-14 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sprrx		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
	Frequency Info	Frequency settings (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Frequency	Receive RF frequency	string	nnnnnnnn	9-digit decimal string (Hz)	When Frequency is set, set Group and Ch to blank.
	Group	Receive group	string	nn	1 or above	When Group and Ch are set, set Frequency to blank.
	Ch	Receive channel	string	nn	1 or above	When Group and Ch are set, set Frequency to blank.
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.8 Receive Parameter Setting Acquisition Request

The Wireless System that received the receive parameter setting acquisition request sends the receive parameter settings to the host via Answer.

[1] Get Command

The command format of the receive parameter setting acquisition request from the host is shown below.

[Example] gprrx_0_0000_00_NC_1↵

Table 4-15 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprrx		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gprrx_0000_00_NC_1,470125000,01,01↵

Table 4-16 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprrx		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	RX	Obtained RX	string	1	RX1	Only RX1 on ATW-R3210N
				2	RX2	
	Frequency Info	Frequency settings (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Frequency	Receive RF frequency	string	nnnnnnnn	9-digit decimal string (Hz)	
	Group	Receive group	string	nn	1 or above	When Frequency is manually set, set Group and Ch to 0. When Frequency is manually set, set Group and Ch to blank.
	Ch	Receive channel	string	nn	1 or above	When Frequency is manually set, set Group and Ch to 0. When Frequency is manually set, set Group and Ch to blank.
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.9 Audio Parameter Setting Change Request

The Wireless System that received the audio parameter setting change request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the audio parameter setting change request from the host is shown below.

[Example] sprad_S_0000_00_NC_1,0,11_↓

Table 4-17 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sprad		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
	Audio	Audio settings				
	Audio Mix	Audio output mix designation	string	0	OFF	Ignored for ATW-R5220 / R3210N (Not supported) For DR3120, set this item regardless of the target channel because this is common to all channels.
				1	ON	
	Line/Mic	Audio output LINE/MIC	string	0	Mic	Ignored for ATW-R5220 / R3210N (Not supported)
				1	Line	
	Output level	Output level	string	nn	0 to 32	For details, see 6.1 Output Level Table.
7	End Character	Message end character	binary	↓	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.10 Audio Parameter Setting Acquisition Request

The Wireless System that received the audio parameter setting acquisition request sends the audio parameter settings to the host via Answer.

[1] Get Command

The command format of the audio parameter setting acquisition request from the host is shown below.

[Example] gprad_0_0000_00_NC_1_↓

Table 4-18 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprad		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
7	End Character	Message end character	binary	↓	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gprad_0000_00_NC_1,0,11_↓

Table 4-19 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprad		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	RX	Obtained RX	string	1	RX1	
				2	RX2	
	Audio	Audio settings				
	Audio Mix	Audio output mix designation	string	0	OFF	Ignored for ATW-R5220 / R3210N (Not supported) For DR3120, set this item regardless of the target channel because this is common to all channels.
				1	ON	
	Line/Mic	Audio output LINE/MIC	string	0	Mic	Blank for ATW-R5220 / R3210N (Not supported)
				1	Line	
	Output level	Output level	string	nn	0 to 32	For details, see 6.1 Output Level Table.
6	End Character	Message end character	binary	↓	CR(0x0d)	

4.2.11 Group Parameter Setting Change Request

The Wireless System that received the group parameter setting change request sends the processing result to the host via ACK or NAK.

* Not used for DR3120 HH1 band.

[1] Set Command

The command format of the group parameter setting change request from the host is shown below.

[Example] sprgr_S_0000_00_NC_01, 1, 60, 580925000, 581275000, 582725000, 582975000, 583625000, 585300000, 587325000, 588525000, 588950000, 592900000, 594575000, 598075000, 599150000, 601250000, 610550000, 615850000, 616675000, 618625000, 620250000, 620850000, 622525000, 625425000, 627550000, 627925000, 630850000, 632850000, 636775000, 639500000, 641975000, 644050000, 646475000, 646725000, 647500000, 647850000, 650150000, 654550000, 655775000, 659550000, 666575000, 668500000, 669200000, 673175000, 673900000, 674350000, 675825000, 676550000, 676800000, 683450000, 687525000, 688500000, 688825000, 689825000, 694550000, 695100000, 695350000, 696525000, 696825000, 698800000, 699600000, 699850000_↵

Table 4-20 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sprrx		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Group No.	User group number	string	nn	1 or above	Required
	Groupe Enable	Group disable/enable	string	0	Disable	
				1	Enable	
	CH table	channel map				
	CH Num	Number of channels	string	nn	0 or above	Required
	Group CH Data	channel detailed information (Information is repeated as many times as the number of channels or less. One or more pieces of information must be set.) 1st information in the list (channel 1), 2nd information in the list (channel 2), ..., nth information in the list (channel n)				
		Freq	string	nnnnnnnn	9-digit decimal string (Hz)	When the group channel is not set, set this to 0. (When the setting is not changed, leave it blank.)
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.12 Group Parameter Setting Acquisition Request

The Wireless System that received the group parameter setting acquisition request sends the group parameter settings to the host via Answer.

[1] Get Command

The command format of the group parameter setting acquisition request from the host is shown below.

[Example] gprgr_0_0000_00_NC_↵

Table 4-21 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprad		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	Group	Target group	string	nn	1 or above	Required
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gprgr_0000_00_NC_01, 1, 1, 60, 580925000, 581275000, 582725000, 582975000, 583625000, 585300000, 587325000, 588525000, 588950000, 592900000, 594575000, 598075000, 599150000, 601250000, 610550000, 615850000, 616675000, 618625000, 620250000, 620850000, 622525000, 625425000, 627550000, 627925000, 630850000, 632850000, 636775000, 639500000, 641975000, 644050000, 646475000, 646725000, 647500000, 647850000, 650150000, 654550000, 655775000, 659550000, 666575000, 668500000, 669200000, 673175000, 673900000, 674350000, 675825000, 676550000, 676800000, 683450000, 687525000, 688500000, 688825000, 689825000, 694550000, 695100000, 695350000, 696525000, 696825000, 698800000, 699600000, 699850000_↵

Table 4-22 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprrx		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Group No.	Obtained user group	string	nn	1 or above	
	Groupe Enable	Group disable/enable	string	0	Disable	
				1	Enable	
	Groupe Kind	Group type	string	0	Preset	Always 1 (User) for ATW-R5220
				1	User	
	CH table	channel map				
	CH Num	Number of channels	string	nn	0 or above	
	CH Data	Channel detailed information (Information is repeated as many times as the number of channels or less.) 1st information in the list (channel 1), 2nd information in the list (channel 2), ..., nth information in the list (channel n)				
	Freq	Frequency settings	string	nnnnnnnn	9-digit decimal string (Hz)	0 when the group channel is not set.
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.13 TX Parameter Setting Change Request

The Wireless System that received the TX parameter setting change request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the TX parameter setting change request from the host is shown below.

[Example] sprtx_s_0000_00_NC_1, 0, 0, 0, , 3, 2, 10, 2, , 2_↵

Table 4-23 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sprtx		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
	Frequency Info	Transmit frequency information	string	0	NoChange	
				1	Set the current receive frequency.	
	TxName	TX display string	string	0	NoChange	
				1	Set the current channel name.	
	UI Lock	UI lock	string	0	NoChange	
				1	Unlock	
				2	Lock	
	Mic/Inst	Mic/Inst switch	string	0	NoChange	Ignored for ATW-R5220 / R3210N(Not supported)
				1	Mic	
				2	Inst	
	RF Power	TX transmit power designation	string	0	NoChange	
				n	1 to 3	
	Batt	TX battery type	string	0	NoChange	
				1	Alkaline	
				2	Ni-MH	
	Gain	TX audio gain (microphone gain)	string	0	NoChange	
				nn	1 to 16	
	HPF	Audio input filter settings (HPF)	string	0	NoChange	Set ON with the corresponding frequency setting for ATW-DR3120 Set ON for ATW-R5220 / R3210N
				1	OFF	
				2	ON/80Hz	
				3	ON/120Hz	
	DWL OPE Mode	DWL operation mode (normally, HD)	string	0	NoChange	Ignored for ATW-R5220 / R3210N (Not supported)
				1	Normal	
				2	HD	
	sensitivity	Sensitivity	string	0	NoChange	
				1	0DB	
				2	+10DB	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.14 TX Parameter Setting Acquisition Request

The Wireless System that received the TX parameter setting acquisition request sends the TX parameter settings to the host via Answer.

[1] Get Command

The command format of the TX parameter setting acquisition request from the host is shown below.

[Example] gprtx_0_0000_00_NC_↵

Table 4-24 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprtx		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gprtx_0000_00_NC_1,0,0,,0,2,0,6,,2,,0_↵

Table 4-25 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gprtx		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
	Frequency Info	Transmit frequency information	string	0	NoChange	
				1	Set the current receive frequency.	
	TxName	TX display string	string	0	NoChange	
				1	Set the current channel name.	
	UI Lock	UI lock	string	0	NoChange	
				1	Unlock	
				2	Lock	
	Mic/Inst	Mic/Inst switch	string	0	NoChange	Blank for ATW-R5220 / R3210N (Not supported)
				1	Mic	
				2	Inst	
	RF Power	TX transmit power designation	string	0	NoChange	
				n	1 to 3	
	Batt	TX battery type	string	0	NoChange	
				1	Alkaline	
				2	Ni-MH	
	Gain	TX audio gain (microphone gain)	string	0	NoChange	
				nn	1 to 16	
	HPF	Audio input filter settings (HPF)	string	0	NoChange	Set ON with the corresponding frequency setting for ATW-DR3120 Set ON for ATW-R5220 / R3210N
				1	OFF	
				2	ON/80Hz	
				3	ON/120Hz	
				4	ON/160Hz	
	sensitivity	Sensitivity	string	0	NoChange	
				1	0DB	
				2	+10DB	
6	End Character	Message end character	binary	␣	CR(0x0d)	

4.2.15 Network Parameter Setting Change Request

The Wireless System that received the network parameter setting change request sends the processing result to the host via ACK or NAK.

To apply the change, a reboot is required. This command does not automatically reboot the system.

[1] Set Command

The command format of the network parameter setting change request from the host is shown below.

[Example] snetw_S_0000_00_NC_1, 192.168.0.30, 255.255.255.0, 192.168.0.1, 0, 1, 1, 225.0.0.100, 17000, 1, 172.16.13.15, 8000, +1300, 1, 07010000, 09302330, 101_␣

Table 4-26 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	snetw		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	IP Setting	IP settings				
	IP Config mode	IP address acquisition method	string	0 1	Auto Static	
	IP address	IP address	string	nnn.nnn.nnn.nnn		Required when Static is selected
	Subnet mask	Subnet mask	string	nnn.nnn.nnn.nnn		Required when Static is selected
	Gateway	Gateway	string	nnn.nnn.nnn.nnn		
	Allow Discovery	Automatic device detection setting	string	0 1	Off On	
	IP Control Notification	IP control notification setting				
	Notification	Notification enable	string	0 1	Off On	
	Level Notification	Level notification	string	0 1	Off On	
	Multicast Address	Multicast address	string	nnn.nnn.nnn.nnn		
	Multicast Port No	Multicast port number	string	nnnnn	1 to 65535	
	NTP Server	NTP server setting				
	NTP	NTP enable	string	0 1	Off On	
	NTP Server Address	NTP server address	string	nnn.nnn.nnn.nnn		
	NTP Server Port No	NTP server port number	string	nnnnn		
	Time Zone	Timezone (time difference from UTC)	string	+HHmm	1-digit sign (+/-) + hour/minute string (HHmm)	
	Daylight Saving Time	Daylight saving time setting				
	DST	DST enable	string	0 1	Off On	
	Start DateTime	Start time	string	MMDDHHmm		
	End DateTime	End time	string	MMDDHHmm		
	Device ID	Device ID	string	nnn	0 to 255	
7	End Character	Message end character	binary	␣	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.16 Network Parameter Setting Acquisition Request

The Wireless System that received the network parameter setting acquisition request sends the network parameter settings to the host via Answer.

[1] Get Command

The command format of the network parameter setting acquisition request from the host is shown below.

[Example] gnetwQ0000Q0QNC␣

Table 4-27 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gnetw		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	␣	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gnetw_0000_00_NC_1, 192.168.0.20, 255.255.255.0, 192.168.0.1, 00-0A-45-12-34-56, 0, 1, 1, 0, 225.0.0.100, 17000, 1, 172.16.13.15, 8000, +1300, 1, 07010000, 09302330, 101_␣

Table 4-28 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gnetw		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	IP Setting	IP settings				
	IP Config mode	IP address acquisition method	string	0	Auto	
				1	Static	
	IP address	IP address	string	nnn.nnn.nnn.nnn		
	Subnet mask	Subnet mask	string	nnn.nnn.nnn.nnn		
	Gateway	Gateway	string	nnn.nnn.nnn.nnn		
	MAC Address	MAC address	string	xx-xx-xx-xx-xx-xx		
	Allow Discovery	Automatic detection setting	string	0	Off	
				1	On	
	IP Control Notification	IP control notification setting				
	Notification	Notification enable	string	0	Off	
				1	On	
	Level Notification	Level notification	string	0	Off	
				1	On	
	Multicast Address	Multicast address	string	nnn.nnn.nnn.nnn		
	Multicast Port No	Multicast port number	string	nnnnn	1 to 65535	
	NTP Server	NTP server setting				
	NTP	NTP enable	string	0	Off	
				1	On	
	NTP Server Address	NTP server address	string	nnn.nnn.nnn.nnn		
	NTP Server Port No	NTP server port number	string	nnnnn		
	Time Zone	Timezone (time difference from UTC)	string	+HHmm	1-digit sign (+/-) + hour/minute string (HHmm)	
	Daylight Saving Time	Daylight saving time setting				
	DST	DST enable	string	0	Off	
				1	On	
	Start DateTime	Start time	string	MMDDHHmm		
	End DateTime	End time	string	MMDDHHmm		
	Device ID	Device ID	string	nnn	0 to 255	
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.17 Dante Parameter Setting Change Request

The Wireless System that received the Dante parameter setting change request sends the processing result to the host via ACK or NAK. To apply the change, a reboot is required. This command does not automatically reboot the system.

* Return NAK for a model without Dante.

[1] Set Command

The command format of the Dante parameter setting change request from the host is shown below.

[Example] `sdant_S_0000_00_NC_1,192.168.2.12,255.255.255.0,192.168.2.1↵`

Table 4-29 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sdant		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	IP Setting	IP settings				
	IP Config mode	IP address acquisition method	string	0	Auto	
				1	Static	
	IP address	IP address	string	nnn.nnn.nnn.nnn		
	Subnet mask	Subnet mask	string	nnn.nnn.nnn.nnn		
	Gateway	Gateway	string	nnn.nnn.nnn.nnn		
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.18 Dante Parameter Setting Acquisition Request

The Wireless System that received the Dante parameter setting acquisition request sends the Dante parameter settings to the host via Answer.

* Return NAK for a model without Dante.

[1] Get Command

The command format of the Dante parameter setting acquisition request from the host is shown below.

[Example] `gdant_0_0000_00_NC_↓`

Table 4-30 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gdant		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↓	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example]: Models with Dante `gdant_0000_00_NC_1, 1, 192.168.2.12, 255.255.255.0, 192.168.2.1, 001, FE-DC-BA-98-76-54, "UltimoX2", "4.1.2.1", "4.1.1.1", "DANTE_NAME", 2, "DANTE_CH1", "DANTE_CH2"↓`

[Example]: Models without Dante `gdant_0000_00_NC_0, 1, 192.168.2.12, 255.255.255.0, 192.168.2.1, 001, , , , , 0↓`

Table 4-31 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gdant		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	IP Setting	IP settings				
		IP Config mode	string	0	Auto	
				1	Static	
		IP address	string	nnn.nnn.nnn.nnn		
		Subnet mask	string	nnn.nnn.nnn.nnn		
		Gateway	string	nnn.nnn.nnn.nnn		
	MAC Address	MAC address	string	xx-xx-xx-xx-xx-xx		Blank for models without Dante
	Dante Info	Dante information				
		Model Name	char	"		Blank for models without Dante
			string	xxxxxxxxxxxxxxxxxx		
			char	"		
		Firmware Version	char	"		Blank for models without Dante
			string	nnn.nnn.nnn.nnn		
			char	"		
		Hardware Version	char	"		Blank for models without Dante
			string	nnn.nnn.nnn.nnn		
			char	"		
		Device Name	char	"		Blank for models without Dante
			string	xxxxxxxxxxxxxxxxxx		
			char	"		
	Channel Info Map	Channel information map				
	Channel Num	Number of channels	string	nn	1 or above	0 for models without Dante, with subsequent parameters omitted
	Channel Data	Channel detailed information (Information is repeated as many times as the number of channels or less.) 1st information in the list (Channel 1), 2nd information in the list (Channel2), ... , nth information in the list (Channel n)				
		Channel Label	char	"		
			string	xxxxxxxxxxxxxxxxxx		
			char	"		
6	End Character	Message end character	binary	↓	CR(0x0d)	

4.2.19 Log Setting Change Request

The Wireless System that received the log setting change request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the log setting change request from the host is shown below.

[Example] `silog_S_0000_00_NC_0_↓`

Table 4-32 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	silog		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	Enable	Log settings	string	0	Off	Required
				1	On	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.20 Log Setting Acquisition Request

The Wireless System that received the log setting acquisition request sends the log settings to the host via Answer.

[1] Get Command

The command format of the log setting acquisition request from the host is shown below.

[Example] gillog_0_0000_00_NC_↵

Table 4-33 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gilog		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gillog_0000_00_NC_0_↵

Table 4-34 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gilog		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	Enable	Log settings	string	0	Off	
				1	On	
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.21 Level Notification Interval Setting Change Request

The Wireless System that received the level notification interval setting change request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the level notification interval setting change request from the host is shown below.

[Example] sitlv_S_0000_00_NC_100_↵

Table 4-35 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	sitlv		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	Interval	Notification interval	string	nnn	100 (1) to 60000 (600) msec	100ms/step
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.22 RX Status Acquisition Request

The Wireless System that received the RX status acquisition request sends the RX status to the host via Answer.

[1] Get Command

The command format of the RX status acquisition request from the host is shown below.

[Example] gstch_0_0000_00_NC_↵

Table 4-36 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gstch		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] : R5220 gstch_0000_00_NC_2,1,0,2,0,2,1,0,0,0,0,2,0,0,0,0_↵

[Example] : R3210N gstch_0000_00_NC_2,1,0,2,0,1,1,0,0,0,0_↵

[Example] : DR3120 gstch_0000_00_NC_1,1,1,0_↵

Table 4-37 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gstch		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	ANT Data Num	Number of ANT data	string	n	1 to	Always 1 for DR3120
	ANT	Each ANT detailed information (Information is repeated as many times as the number of ANT data or less.)				
	ANT	Notification ANT	string	1	ANT A	Always 1 for DR3120
				2	ANT B	
	ANT DC Overload	ANT DC overcurrent detection	string	0	Not supported	
				1	Detect	
	RX Num	Number of RX data	string	n	1 to	Always 0 for DR3120 without each channel information
	RX	Each RX detailed information (Information is repeated as many times as the number of RX data or less.)				
	RX	Notification RX	string	1	RX1	
				2	RX2	Only RX1 on ATW-R3210N
	Interference Sts	Interference status information				
	Interference Alert Low	Interference alert (Low)	string	0	Not supported	
				1	Interfere	
	Interference Alert High	Interference alert (High)	string	0	Not supported	
				1	Interfere	
	1 st PII Lock	1st local PLL lock	string	0	Unlock	
				1	Lock	
	2 nd PII Lock	2nd local PLL lock	string	0	Unlock	
				1	Lock	
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.23 Common Status Acquisition Request

The Wireless System that received the common status acquisition request sends the common status to the host via Answer.

[1] Get Command

The command format of the common status acquisition request from the host is shown below.

[Example] gstcm_0_0000_00_NC_↵

Table 4-38 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gstcm		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gstcm_0000_00_NC_0,39.500,42.500,42.375,40.3752_↵

Table 4-39 Answer Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gstcm		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	Dante Existence	Dante availability	string	0	Not available	
				1	Available	
	TEMP	Temperature information in the set				
	TEMP1	Set temperature 1	string	nn.nnn	°C	
	TEMP2	Set temperature 2	string	nn.nnn	°C	Always 0.000 for DR3120 / R3210N
	TEMP3	Set temperature 3	string	nn.nnn	°C	Always 0.000 for DR3120 / R3210N
	TEMP4	Set temperature 4	string	nn.nnn	°C	Always 0.000 for DR3120 / R3210N
6	End Character	Message end character	binary	␣	CR(0x0d)	

4.2.24 Level Acquisition Request

The Wireless System that received the level acquisition request sends the level to the host via Answer.

[1] Get Command

The command format of the level acquisition request from the host is shown below.

[Example] garlv_0_0000_00_NC_1_␣

Table 4-40 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	garM		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on R3210N
				2	RX2	
7	End Character	Message end character	binary	␣	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gstch_0000_00_NC_1, 10, 9, 8, -80, 9, -78, 1, 0, 0, 0, , 0, 0, 0, 0, , 0, 1, 1, 0, 0, 1, 7, 0, 4, 474325000, 0, 0_␣

Table 4-41 Answer Command Format

No	item	Description	type	value	value Description	remarks	
1	Command	Command string	string	garlv			
2	Model ID	Not used	string	0000	Not used		
3	Unit No	Not used	string	00	Not used		
4	Continue Select	Message split method	string	NC	No split		
5	Parameter	Parameter					
	RX	Obtained RX	string	1	RX1		
				2	RX2	Only RX1 on ATW-R3210N	
	Audio Sts	Audio status					
	TX Level	TX audio level (AF level meter)	string	nn	0 to 16	For details, see 6.3 AF Level Table.	
	RX Level	RX audio level (AF level meter)	string	nn	0 to 16	For details, see 6.3 AF Level Table.	
	RF Sts	RF status					
	ANT-A RSSI Meter	ANT-A RSSI Meter value	string	nn	0 to 12	For details, see 6.4 RF Level Table.	
	ANT-A RSSI	ANT-A RSSI	string	nn	-96 to -45 dBm		
	ANT-B RSSI Meter	ANT-B RSSI Meter value	string	nn	0 to 12	For details, see 6.4 RF Level Table.	
	ANT-B RSSI	ANT-B RSSI	string	nn	-96 to -45 dBm		
	ANT SELECT	Demodulation ANT select (diver select)	string	0	Not supported		
				1	A		
				2	B		
	MUTE Sts	Mute status					
	AF Mute Sts	AF mute status					
	S Squelth	S squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)	
				1	Mute		
	N Squelth	N squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)	
				1	Mute		
	T Squelth	T squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)	
				1	Mute		
	ACCH	ACCH Mute	string	0	Unmute	Blank for ATW-R5220 / R3210N (Not supported)	
				1	Mute		
	Microcomputer	Microcomputer mute	string	0	Unmute	Mute status due to the receiver's operation such as group scan (excluding frequency change)	
				1	Mute		
	Remote	Remote mute	string	0	Unmute	Mute status due to a remote mute request	
				1	Mute		
	Monitor Mode	Monitor mode mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)	
				1	Mute		
	XLR Mute	XLR output mute	string	0	Unmute		
				1	Mute		
	Dante Mute	Dante output mute	string	0	Unmute	Blank for models without Dante	
				1	Mute		
	TX Mute	TX Mute	string	0	Unmute		
				1	Mute		
	Tone Enable Sts	Tone enable/disable					
	Tone Enable	Tone enable	string	0	Disable		
				1	Enable		
	Tone Data Enable	Tone data enable	string	0	Disable	Always Enable for ATW-DR3120 when Tone Enable is set	
				1	Enable		
	Tone STS	TONE status (ALL0 when TONE Enable is set and TONE Data Enable is other than Enable)					
	TX LOCK	TX LOCK	string	0	Unlock		
				1	Lock		
	HPF	Audio input filter settings (HPF)	string	0	OFF		
				1	ON		
	RF Power	TX transmit power designation	string	0	OFF	For details, see 6.2 TX transmit power Table.	
				n	1 to 3		
	Gain	TX Gain setting	string	nn	-10 (0) to 20 (15) dB	2dB/Step	
	Batt Info	Battery information					
	Batt Type	TX battery type	string	0	Alkaline		
				1	Ni-MH		
	Batt Power	TX battery level	string	0	0-19		
				1	20-39		
				2	40-59		
				3	60-79		
				4	80-100		
	RF Freq Info	RF transmit frequency information					
	Frequency	Frequency	string	nnnnnnnn	9-digit decimal string (Hz)		
	Group No.	Group	string	xn		Group set on the receiver. When Frequency is manually set on the receiver, set Group and Ch to 0.	
	CH	CH	string	nn		Channel set on the receiver. When Frequency is manually set on the receiver, set Group and Ch to 0.	
6	End Character	Message end character	binary	↓	CR(0x0d)		

4.2.26 Mode Acquisition Request

The Wireless System that received the mode acquisition request sends the boot mode to the host via Answer.

[1] Get Command

The command format of the mode acquisition request from the host is shown below.

[Example] gmode_0_0000_00_NC_↵

Table 4-44 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	gmode		
2	Handshake Select	Sequence execution method	string	O		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] Answer

The command format of Answer from the Wireless System is shown below.

[Example] gmode_0000_00_NC_0, "ATW-R5220", "001.000.000" ↵

Table 4-45 Answer Command Format

No	item	Description	type	value	value Description	remarks	
1	Command	Command string	string	gmode			
2	Model ID	Not used	string	0000	Not used		
3	Unit No	Not used	string	00	Not used		
4	Continue Select	Message split method	string	NC	No split		
5	Parameter	Parameter					
	Mode	Boot mode	string	0	Normal mode		
				1	Adjustment mode	The specification is not yet determined as of December 2017.	
				2	FW update mode	When the boot loader is running, this parameter is returned to the system.	
				3	Service mode	The specification is not yet determined as of December 2017.	
				4	TX update mode		
				5	Debug mode	DR3120 only	
	Model Name	Model name	char	"		If this item contains less than 16 characters, a single-byte blank space is set at the end.	
				string	xxxxxxxxxxxxxxxx		16 single-byte characters
				char	"		
	Boot Loader Version	Version (Boot loader or firmware)	char	"		If this item contains less than 12 characters, a single-byte blank space is set at the end.	
				string	nnn.nnn.nnn		12 single-byte characters
				char	"		
6	End Character	Message end character	binary	↵	CR(0x0d)		

4.2.27 UI LOCK Request (for Scan and Walktest)

The Wireless System that received the UI LOCK request sends the processing result to the host via ACK or NAK.

* The following command performs UI LOCK during the process from when a command is received and responded to when the final Result is sent.

In the meantime, UI cannot be locked or unlocked.

When UI is locked with this command, if a specific command is received, UI is unlocked when the process is completed.

- Setting change request command: From when the command is received to when the response is sent
- Group scan, spectrum analyzer function, system walktest, auto squelch: From when the command is received to when the final Result is sent

[1] Set Command

The command format of the UI LOCK setting change request from the host is shown below.

[Example] ruloc_S_0000_00_NC_1_0_↵

Table 4-46 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	ruloc		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required
				2	RX2	Only RX1 on ATW-R3210N
	LOCK	Lock operation	string	0	Unlock	Required
				1	Lock	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.28 Reset Request (to Factory Settings)

The Wireless System that received the reset request (to factory settings) sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the reset request (to factory settings) from the host is shown below.

[Example] rfrst_S_0000_00_↵

Table 4-47 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	rfrst		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

The system is reset after ACK is sent.

4.2.29 Display Flip and Flash Request (for Identify)

The Wireless System that received the display flip and flash request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the display flip and flash request from the host is shown below.

[Example] rdfip_S_0000_00_NC_1_↵

Table 4-48 Command Format

No	item	Description	type	value	value Description	remarks	
1	Command	Command string	string	rdflp			
2	Handshake Select	Sequence execution method	string	S			
3	Model ID	Not used	string	0000	Not used		
4	Unit No	Not used	string	00	Not used		
5	Continue Select	Message split method	string	NC	No split		
6	Parameter	Parameter					
		RX	Target RX	string	1	RX1	Currently not used
					2	RX2	
		OPERATION	Operation	string	0	Stop	Required
					1	Start	
7	End Character	Message end character	binary	↵	CR(0x0d)		

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

When Start is selected, the display is flipped and flipped back repeatedly at one second intervals for 10 seconds after ACK is sent.

4.2.30 Mute Request

The Wireless System that received the mute request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the mute request from the host is shown below.

[Example] `rmute_S_0000_00_NC_1,1,↵`

Table 4-49 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	rmute		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required Only RX1 on ATW-R3210N
				2	RX2	
	MUTE OPERATION					
	XLR Mute	XLR output mute	string	0	Unmute	
				1	Mute	
	Dante Mute	Dante output mute	string	0	Unmute	Ignored for models without Dante
				1	Mute	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

4.2.31 Spectrum Analyzer Function Start Request

The Wireless System that received the spectrum analyzer function start request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the spectrum analyzer function start request from the host is shown below.

[Example] `rspan_S_0000_00_NC_01,480000000,490000000,25000,1,↵`

Table 4-50 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	rspan		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Target RX	string	1	RX1	Required
					2	
	Hed Frequency	Head frequency	string	nnnnnnnn	9-digit decimal string (Hz)	Required when Start is selected
	End Frequency	End frequency	string	nnnnnnnn	9-digit decimal string (Hz)	Required when Start is selected
	Frequency Step	Frequency step	string	nnnnnnnn	9-digit decimal string (Hz)	Required when Start is selected
	OPERATION	Start/stop	string	0	Stop	Required
				1	Start	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

When Start is selected, the measurement result is sent for each frequency after ACK is sent.

[3] Result

The command format of Result from the Wireless System is shown below.

The result for each frequency is sent from time to time.

[Example] `rspan_0000_00_NC_1,480000000,00182,00088,↵`

Table 4-51 Result Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	rspan		
2	Model ID	Not used	string	0000	Not used	
3	Unit No	Not used	string	00	Not used	
4	Continue Select	Message split method	string	NC	No split	
5	Parameter	Parameter				
	RX	Target RX	string	1	RX1	
				2	RX2	
	Frequency	Frequency	string	nnnnnnnn	9-digit decimal string (Hz)	
	ANT A Result	ANT-A measured value	string	nnnnn	5-digit decimal string (dBu)	RSSI level
	ANT B Result	ANT-B measured value	string	nnnnn	5-digit decimal string (dBu)	RSSI level
6	End Character	Message end character	binary	↵	CR(0x0d)	

4.2.32 Reboot Request

The Wireless System that received the reboot request sends the processing result to the host via ACK or NAK.

[1] Set Command

The command format of the reboot request from the host is shown below.

[Example] rrobot_S_0000_00_NC↵

Table 4-52 Command Format

No	item	Description	type	value	value Description	remarks
1	Command	Command string	string	rrbot		
2	Handshake Select	Sequence execution method	string	S		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter		-	No parameter	
7	End Character	Message end character	binary	↵	CR(0x0d)	

[2] ACK/NAK

Refer to the RX parameter setting change request [2].

The system is rebooted after ACK is sent.

5 UDP communication

For Information (State Change Notification) sent from the wireless system, UDP protocol will be used.

5.1 Communication control

Refer to chapter 4.1, for communication control flow

5.1.1 Start of communication

The Host executes a group registration for Multicast address.

Table 5-1 Communication Control Parameter

No	Name	Default Setting	Remarks
1.	IP Address	225.000.000.100	Multicast address
2.	Port No	17000	

5.1.2 Control sequence

5.1.2.1 Information

If the state of the wireless system changes, the below State Change Notification will be executed.

<Example> Refer below for a RX parameter setting change notification sequence.

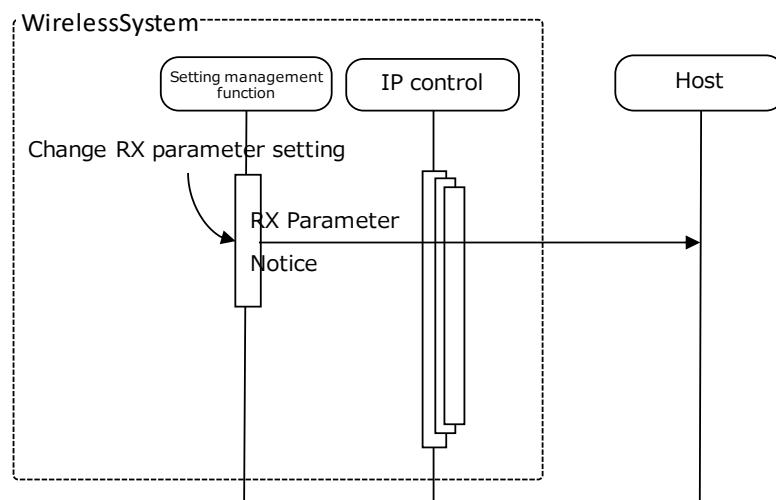


Fig. 5-1 Information Command Process Sequence

5.1.3 Communication error

Refer to chapter 4.1.3. for transmitting error sequence.

5.1.4 End of communication

The Host can delete the group registration at any timing.

5.2 Command Details

5.2.1 Level Notification

A level notification is sent periodically from the Wireless System.

It is reported at the interval set in the level notification interval setting change request. (The default is 100 msec.)

When Notification- Enable is set to 0 (Not used) or Notification- Enable Audio Level is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nau|v_0000_00_NC_2,1,0,0,0,-96,0,-96,0,0,0,0,,0,0,0,0,,0,0,0,0,0,0,0,0,0,0,0,0,0,0,00000000,0,0,
2,10,9,8,-80,9,-78,1,0,0,0,,0,0,0,0,,0,1,1,0,0,1,7,0,4,474325000,0,0_↓

Table 5-2 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	naulv		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	Level Map	Level data map				
	RX Num	Number of RX data	string	n	1 to	
	RX	Each RX level detailed information (Information is repeated as many times as the number of data or less.)				
	RX	Notification RX	string	1	RX1	
				2	RX2	Only RX1 on ATW-R3210N
	Audio Sts	Audio status				
	TX Level	TX audio level (AF level meter)	string	nn	0 to 16	For details, see 6.4 AF Level Table.
	RX Level	RX audio level (AF level meter)	string	nn	0 to 16	For details, see 6.4 AF Level Table.
	RF Sts	RF status				
	ANT-A RSSI Meter	ANT-A RSSI Meter value	string	nn	0 to 12	For details, see 6.5 RF Level Table.
	ANT-A RSSI	ANT-A RSSI	string	nn	-96 to -45 dBm	
	ANT-B RSSI Meter	ANT-B RSSI Meter value	string	nn	0 to 12	For details, see 6.5 RF Level Table.
	ANT-B RSSI	ANT-B RSSI	string	nn	-96 to -45 dBm	
	ANT SELECT	Demodulation ANT select (diver select)	string	0	Not supported	
				1	A	
				2	B	
	Mute Sts	Mute status				
	AF Mute Sts	AF mute status				
	S Squelth	S squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	N Squelth	N squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	T Squelth	T squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	ACCH	ACCH Mute	string	0	Unmute	Blank for ATW-R5220 / R3210N (Not supported)
				1	Mute	
	Micro computer	Microcomputer mute	string	0	Unmute	Mute status due to the receiver's operation such as group scan (excluding frequency change)
				1	Mute	
	Remote	Remote mute	string	0	Unmute	Mute status due to a remote mute request
				1	Mute	
	Monitor Mode	Monitor mode mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	XLR Mute	XLR output mute	string	0	Unmute	
				1	Mute	
	Dante Mute	Dante output mute	string	0	Unmute	Blank for models without Dante
				1	Mute	
	TX Mute	TX Mute	string	0	Unmute	
				1	Mute	
	Tone Enable Sts	Tone enable/disable				
	Tone Enable	Tone enable	string	0	Disable	
				1	Enable	
	Tone Data Enable	Tone data enable	string	0	Disable	Always Enable for ATW-DR3120 when Tone Enable is set
				1	Enable	
	Tone STS	TONE status (ALL0 when TONE Enable is set and TONE Data Enable is other than Enable)				
	TX LOCK	TX LOCK	string	0	Unlock	
				1	Lock	
	HPF	Audio input filter settings (HPF)	string	0	OFF	
				1	ON	
	RF Power	TX transmit power designation	string	0	OFF	For details, see 6.2 TX transmit power Table.
				n	1 to 3	
	Gain	TX Gain setting	string	nn	-10 (0) to 20 (15) dB	2dB/Step
	Batt Info	Battery information				
	Batt Type	TX battery type	string	0	Alkaline	
				1	Ni-MH	
	Batt Power	TX battery level	string	0	0-19	
				1	20-39	
				2	40-59	
				3	60-79	
				4	80-100	
	RF Freq Info	RF transmit frequency information				
	Frequency	Frequency	string	nnnnnnnn	9-digit decimal string (Hz)	
	Group No.	Group	string	xn		Group set on the receiver. When Frequency is manually set on the receiver, set Group and Ch to 0.
	CH	CH	string	nn		Channel set on the receiver. When Frequency is manually set on the receiver, set Group and Ch to 0.
7	End Character	Message end character	binary	↓	CR(0x0d)	

5.2.2 RX Parameter Setting Change Notification

A RX parameter setting change notification is sent when the RX parameter settings are changed.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nprch_0000_00_NC_1, "ATWR5220", , 10, , , 0, 0, 474325000, 03, 04_↓

Table 5-3 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nprch		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Notification RX	string	1	RX1	
				2	RX2	Only RX1 on ATW-R3210N
	RX Name	RX name	char	"		The available characters are A to Z, 0 to 9, symbols (_+,#&), and single-byte space. Lowercase alphabets are converted to uppercase alphabets. If this item contains less than 8 characters, a single-byte blank space is set at the end.
			string	xxxxxxxx	8 single-byte characters or less	
			char	"		
	TCH Secret Strength	TCH concealment level designation	string	0	Standard	Blank for ATW-R5220 / R3210N (Not supported)
				1	Advanced	
	Squelch	RSSI receive limit judgment settings (squelch)	string	0	OFF	Squelch level Blank for ATW-DR3120 (Not supported)
				nn	1 to 16	
	RF mode	RF mode	string	0	Normal	Blank for ATW-R5220 / R3210N (Not supported)
				1	HD Mode	
	PIN	PIN code	string	nnnn		Blank for ATW-R5220 / R3210N (Not supported)
	Back Up Frequency	Back-up frequency information (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Back Up Frequency Enable	Back-up frequency ON/OFF	string	0	OFF	Blank for ATW-DR3120 HH1 band (Not supported)
				1	ON	
	Back Up Frequency	Back-up frequency	string	nnnnnnnn	9-digit decimal string (Hz)	When Back Up Frequency is manually set, set Back Up Group and Back Up Ch to 0. Blank for ATW-DR3120 HH1 band (Not supported)
	Back Up Group	Back-up group	string	nn	1 or above	Blank for ATW-DR3120 HH1 band (Not supported)
	Back Up Ch	Back-up channel	string	nn	1 or above	Blank for ATW-DR3120 HH1 band (Not supported)
	AF Meter	AF Meter (TX or RX)	string	0	TX	
				1	RX	
7	End Character	Message end character	binary	↓	CR(0x0d)	

5.2.3 Receive Parameter Setting Change Notification

A receive parameter setting change notification is sent when the receive parameter settings are changed.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nprrx_0000_00_NC_1, 470125000, 01, 01_↓

Table 5-4 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nprrx		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Notification RX	string	1	RX1	Only RX1 on ATW-R3210N
				2	RX2	
	Frequency Info	Frequency settings (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Frequency	Receive RF frequency	string	nnnnnnnn	9-digit decimal string (Hz)	When Frequency is set, Ch and Group are set to 0.
	Group	Receive group	string	nn	0 or above	
	Ch	Receive group channel	string	nn	0 or above	
7	End Character	Message end character	binary	↓	CR(0x0d)	

5.2.4 Audio Parameter Setting Change Notification

An audio parameter setting change notification is sent when the audio parameter settings are changed.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nprad_0000_00_NC_1, 0, 15_↵

Table 5-5 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nprad		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Notification RX	string	1	RX1	
				2	RX2	Only RX1 on ATW-R3210N
	Audio	Audio output level setting				
	Audio Mix	Audio output mix designation	string	0	OFF	Ignored for ATW-R5220 / R3210N (Not supported) For DR3120, set this item regardless of the target channel because this is common to all channels.
				1	ON	
	Line/Mic	Audio output LINE/MIC	string	0	Mic	Blank for ATW-R5220 / R3210N (Not supported)
				1	Line	
	Volume	Output level	string	nn	0 to 32	For details, see 6.1 Output Level Table.
7	End Character	Message end character	binary	↵	CR(0x0d)	

5.2.5 Group Parameter Setting Change Notification

A group parameter setting change notification is sent when the group parameter settings are configured or changed.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

* Not used for DR3120 HH1 band.

[Example] MD_nprgr_0000_00_NC_01, 1, 1, 60, 580925000, 581275000, 582725000, 582975000, 583625000, 585300000, 587325000, 588525000, 588950000, 592900000, 594575000, 598075000, 599150000, 601250000, 610550000, 615850000, 616675000, 618625000, 620250000, 620850000, 622525000, 625425000, 627550000, 627925000, 630850000, 632850000, 636775000, 639500000, 641975000, 644050000, 646475000, 646725000, 647500000, 647850000, 650150000, 654550000, 655775000, 659550000, 666575000, 668500000, 669200000, 673175000, 673900000, 674350000, 675825000, 676550000, 676800000, 683450000, 687525000, 688500000, 688825000, 689825000, 694550000, 695100000, 695350000, 696525000, 696825000, 698800000, 699600000, 699850000_↵

Table 5-6 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nprgr		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Group No.	Obtained user group	string	nn	1 or above	
	Groupe Kind	Group type	string	0	Preset	Always 1 (User) for ATW-R5220
				1	User	
	Groupe Enable	Group disable/enable	string	0	Disable	
				1	Enable	
	User group CH table	User group channel map				
	Group CH Num	Number of group channels	string	nn	0 or above	
	Group CH Data	Group channel detailed information (Information is repeated as many times as the number of group channels or less.)				
	Freq	Frequency settings	string	nnnnnnnn	9-digit decimal string (Hz)	0 when the group channel is not set.
7	End Character	Message end character	binary	↵	CR(0x0d)	

5.2.6 Common Parameter Setting Change Notification

A common parameter setting change notification is sent when the common parameter settings are changed.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nprcm_0000_00_NC_0, 1, 0, 0_↵

Table 5-7 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nprcm		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	ANT DC power	ANT DC power	string	0	OFF	
				1	ON	
	Brightness	Brightness	string	0	Low	
				1	High	
	RX LOCK	RX LOCK	string	0	Unlock	
				1	Lock	
	ACCESS	ACCESS	string	0	Free Turning	Blank for ATW-DR3120 HH1 band (Not used)
				1	User Group Only	
7	End Character	Message end character	binary	↵	CR(0x0d)	

5.2.7RX Status Change Notification

A RX status change notification is sent when the RX status is changed.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] :R5220 MD_nstch_0000_00_NC_2,1,0,2,1,2,1,0,0,0,0,2,0,0,0,0_↵

[Example] :DR3120 MD_nstch_0000_00_NC_1,1,1,0_↵

※ This notification is not available for ATW-R3210N.

Table 5-8 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nstch		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	ANT Data Num	Number of ANT data	string	n	1 to	Always 1 for DR3120
	ANT	Each ANT detailed information (Information is repeated as many times as the number of ANT data or less.)				
	ANT	Notification ANT	string	1	ANT A	Always 1 for DR3120
				2	ANT B	
	ANT DC Overload	ANT DC overcurrent detection	string	0	Not supported	
				1	Detect	
	RX Num	Number of RX data	string	n	1 to	Always 0 for DR3120 without each channel information
	RX	Each RX detailed information (Information is repeated as many times as the number of RX data or less.)				
	RX	Notification RX	string	1	RX1	
				2	RX2	
	Interference Sts	Interference status information				
	Interference Alert Low	Interference alert (Low)	string	0	Not supported	
				1	Interfere	
	Interference Alert High	Interference alert (High)	string	0	Not supported	
				1	Interfere	
	1 st Pll Lock	1st local PLL lock	string	0	Unlock	
				1	Lock	
	2 nd Pll Lock	2nd local PLL lock	string	0	Unlock	
				1	Lock	
7	End Character	Message end character	binary	↵	CR(0x0d)	

5.2.8 Frequency Back-up Mode Change Notification

A frequency back-up mode change notification is sent when the frequency back-up mode is changed.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

* Not used for DR3120 HH1 band.

[Example] MD_nbumd_0000_00_NC_1,470125000,1,1,480125000,1,1,0_↵

Table 5-9 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nbumd		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Notification RX	string	1	RX1	
				2	RX2	Only RX1 on ATW-R3210N
	RX Frequency Info	Receive frequency information (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Frequency	Receive RF frequency	string	nnnnnnnn	9-digit decimal string (Hz)	
	Group	Receive group	string	nn	0 or above	
	Ch	Receive channel	string	nn	0 or above	
	Buck up Frequency Info	Back-up frequency setting (For the Group and Ch parameter ranges, see 6.6 Group Table.)				
	Frequency	Back-up RF frequency	string	nnnnnnnn	9-digit decimal string (Hz)	
	Group	Back-up group	string	nn	0 or above	
	Ch	Back-up channel	string	nn	0 or above	
7	End Character	Message end character	binary	↵	CR(0x0d)	

5.2.9 MUTE Status Change Notification

A MUTE status change notification is sent when the MUTE status is changed.

When Notification- Enable is set to 0 (Not used) or Notification- Enable Audio Level is set to 1 (Used) in the IP control settings, this is not sent.

[Example] MD_nstmt_0000_00_NC_1,0,0,0,,0,0,0,0,,0_↵

Table 5-10 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nstmt		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	RX	Notification RX	string	1	RX1	
				2	RX2	
	MUTE Sts	Mute status				
	AF Mute Sts	AF mute status				
	S Squelth	S squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	N Squelth	N squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	T Squelth	T squelch mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	ACCH	ACCH Mute	string	0	Unmute	Blank for ATW-R5220 / R3210N (Not supported)
				1	Mute	
	Microcomputer	Microcomputer mute	string	0	Unmute	Mute status due to the receiver's operation such as group scan (excluding frequency change)
				1	Mute	
	Remote	Remote mute	string	0	Unmute	Mute status due to a remote mute request
				1	Mute	
	Monitor Mode	Monitor mode mute	string	0	Unmute	Blank for ATW-DR3120 (Not supported)
				1	Mute	
	XLR Mute	XLR output mute	string	0	Unmute	
				1	Mute	
	Dante Mute	Dante output mute	string	0	Unmute	Blank for models without Dante
				1	Mute	
	TX Mute	TX Mute	string	0	Unmute	
				1	Mute	
7	End Character	Message end character	binary	↵	CR(0x0d)	

5.2.10 Temperature Alert Notification

A temperature alert notification is sent when the power status is changed (turned ON/OFF).

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nstpw_0000_00_NC_1,60.753,62.400,70.000,75.123_↵

Table 5-11 Command Format

No	item	Description	type	value	value Description	remarks	
1	Modify	MD	string	MD			
2	Command	Command string	string	nstpw			
3	Model ID	Not used	string	0000	Not used		
4	Unit No	Not used	string	00	Not used		
5	Continue Select	Message split method	string	NC	No split		
6	Parameter	Parameter					
	WarningLevel	Warning level	string	1	Level1		
				2	Level2		
				3	Level3		
	TEMP	Temperature information in the set					
	TEMP1	Set temperature 1	string	nn.nnn	°C	Always 0.000 for R3210N	
	TEMP2	Set temperature 2	string	nn.nnn	°C	Always 0.000 for DR3120/R3210N	
	TEMP3	Set temperature 3	string	nn.nnn	°C	Always 0.000 for DR3120/R3210N	
	TEMP4	Set temperature 4	string	nn.nnn	°C	Always 0.000 for DR3120/R3210N	
7	End Character	Message end character	binary	↵	CR(0x0d)		

5.2.11 Power Status Change Notification

A power status change notification is sent when the power status is changed (turned ON/OFF).

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nstpw_0000_00_NC_1_↵

Table 5-12 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nstpw		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	Power Status	Power status	string	0	Off	R5220/R3210N can't notify Off.
				1	On	
7	End Character	Message end character	binary	↵	CR(0x0d)	

5.2.12 Reboot Notification

A reboot notification is sent when the system is rebooted.

When Notification- Enable is set to 0 (Not used) in the IP control settings, this is not sent.

[Example] MD_nrbot_0000_00_NC_1_1_↵

Table 5-13 Command Format

No	item	Description	type	value	value Description	remarks
1	Modify	MD	string	MD		
2	Command	Command string	string	nrbot		
3	Model ID	Not used	string	0000	Not used	
4	Unit No	Not used	string	00	Not used	
5	Continue Select	Message split method	string	NC	No split	
6	Parameter	Parameter				
	Operation	Operation	string	1	Local	
				2	Remote	
	Reset Reason	Reboot reason	string	1	Reboot	
				2	Reset (factory settings)	
				3	IP settings (including Dante)	
				4	Remote settings	
				5	NTP settings	
				6	Frequency limit settings	
				7	MCU UP DATE	
				8	FW(DSP,FPGA)UP DATE	Not used for ATW-R5220 / R3210N
7	End Character	Message end character	binary	↵	CR(0x0d)	

6 Appendix

6.1 Output Level Table

Value	R5220	DR3120	R3210N
	Data[dB]	Data[dB]	Data[dB]
0	-60.0	-12.0	-60.0
1	-58.0	-11.0	-58.0
2	-56.0	-10.0	-56.0
3	-54.0	-9.0	-54.0
4	-52.0	-8.0	-52.0
5	-50.0	-7.0	-50.0
6	-48.0	-6.0	-48.0
7	-46.0	-5.0	-46.0
8	-44.0	-4.0	-44.0
9	-42.0	-3.0	-42.0
10	-40.0	-2.0	-40.0
11	-38.0	-1.0	-38.0
12	-36.0	0.0	-36.0
13	-34.0	1.0	-34.0
14	-32.0	2.0	-32.0
15	-30.0	3.0	-30.0
16	-28.0	4.0	-28.0
17	-26.0	5.0	-26.0
18	-24.0	6.0	-24.0
19	-22.0	7.0	-22.0
20	-20.0	8.0	-20.0
21	-18.0	9.0	-18.0
22	-16.0	10.0	-16.0
23	-14.0	11.0	-14.0
24	-12.0	12.0	-12.0
25	-10.0	13.0	-10.0
26	-8.0	14.0	-8.0
27	-6.0	15.0	-6.0
28	-4.0	16.0	-4.0
29	-2.0	17.0	-2.0
30	0.0	18.0	0.0
31	-	19.0	-
32	-	20.0	-

6.2 TX Transmit Power Table

Value	R5220		DR3120		R3210N
	HH1 Band	左記以外	DG1J Band	左記以外	All band
	Data[mW]	Data[mW]	Data[mW]	Data[mW]	Data[mW]
1	Low: 2mW	Low: 2mW	Low: 2mW	Low: 2mW	Low: 10mW
2	High: 10mW	Mid: 10mW	High: 10mW	Mid: 10mW	High: 30mW
3	-	High: 50mW	-	High: 20mW	-

6.3 TX Mic Gain Table

Value	Data[dB]
0	No Change
1	-10.0
2	-8.0
3	-6.0
4	-4.0
5	-2.0
6	0.0
7	2.0
8	4.0
9	6.0
10	8.0
11	10.0
12	12.0
13	14.0
14	16.0
15	18.0
16	20.0

6.4 AF Level Table

Value	R5220		DR3120			R3210N	
	RX	TX	RX ※		TX	RX	TX
			MIC	LINE			
	Data[dBu]	Data[dBu]	Data[dBu]	Data[dBu]	Data[dBFS]	Data[dBu]	Data[dBu]
0	mute	mute	mute	mute	mute	mute	mute
1	-50.0	-59.0	-80.0	-50.0	-59.0	-40	-40
2	-42.0	-56.0	-72.0	-42.0	-56.0	-30	-30
3	-36.0	-48.0	-66.0	-36.0	-48.0	-24	-24
4	-30.0	-42.0	-60.0	-30.0	-42.0	-18	-18
5	-24.0	-36.0	-54.0	-24.0	-36.0	-15	-15
6	-18.0	-30.0	-48.0	-18.0	-30.0	-12	-12
7	-15.0	-24.0	-45.0	-15.0	-24.0	-10	-10
8	-12.0	-21.0	-42.0	-12.0	-21.0	-8	-8
9	-9.0	-18.0	-39.0	-9.0	-18.0	-6	-6
10	-6.0	-15.0	-36.0	-6.0	-15.0	-4	-4
11	-3.0	-12.0	-33.0	-3.0	-12.0	-2	-2
12	0.0	-9.0	-30.0	0.0	-9.0	0	0
13	3.0	-6.0	-27.0	3.0	-6.0	2	2
14	6.0	-3.0	-24.0	6.0	-3.0	4	4
15	9.0	0.0	-21.0	9.0	0.0	6	6
16	Over Load	Over Load	Over Load	Over Load	Over Load	---	Over Load

* In DR3120, a value in the Value item varies depending on the AUDIO LINE/MIC setting.

6.5 RF Level Table

Value	R5220	DR3120	R3210N
	Data[dBm]	Data[dBm]	Data[dBm]
0	Not received	Not received	Not received
1	-96.0	-94.0 ※	-96.0
2	-94.0	-94.0	-94.0
3	-92.0	-92.0	-92.0
4	-90.0	-90.0	-90.0
5	-88.0	-88.0	-88.0
6	-86.0	-86.0	-86.0
7	-84.0	-84.0	-84.0
8	-82.0	-82.0	-82.0
9	-80.0	-80.0	-80.0
10	-78.0	-78.0	-78.0
11	-76.0	-76.0	-76.0
12	-74.0	-74.0	-74.0
13	-72.0	-	-72.0

* This is a state when displayed dBm or valid ACCH information is received.

6.6 GroupTable (DR3120)

Value	R5220		DR3120			R3210N	
	All Band		HH1 Band	左記以外		All Band	
	Up to 60 Ch		Up to 32 Ch	Up to 32 Ch		Up to 32 Ch	
	Data[GROUP]		Data[GROUP]	Data[GROUP]		Data[GROUP]	
1	1	User	BA	Preset	1	Preset	1
2	2		BB		2		2
3	3		BC		3		3
4	4		BD		4		4
5	5		BE		5		5
6	6		BF		6		6
7	7		BG		7		7
8	8		BH		8		8
9	9		BI		9		9
10	10		BJ		10		10
11	-	Not use	BK	Not use	U1	Not use	U1
12	-		B1		U2		U2
13	-		B2		-		-
14	-		B3		-		-
15	-		B4		-		-
16	-		B5		-		-
17	-		B6		-		-