

CoolMaster Product Line PRM



Universal Interface Adapter for HVAC Systems





Attention

1. During the HVAC system automatic operations the CoolMaster Device* must be disconnected from the system. Examples of the automatic operations are:

- Test
- Reset
- Automatic charge

2. Do not change the original positions of the quadruple dip switch S inside CoolMaster Device when using it with VRV/VRF systems.

*CoolMaster Device refers to all CoolMaster Product Line including CoolMaster, CoolMasterPro, CoolMasterNet

WEEE Directive & Product Disposal



At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to the supplier for disposal.



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1 Document Revision History

0.10

- CoolMaster Product Line
- Updated HVAC Lines connectivity table

0.9

- ad command
- inhibit command
- added Blue Star

0.8

- feed command rework
- Added UID for 4-digit systems and HT
- CoolRemote connection

0.7

- Added Haier

0.6

- Added Chigo

0.5

- Added Midea, Kentatsu, Trane, Fujitsu

0.4 - Initial

0.3 - Preliminary

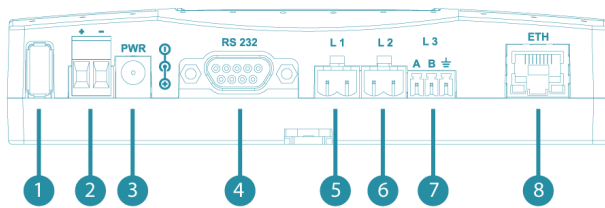
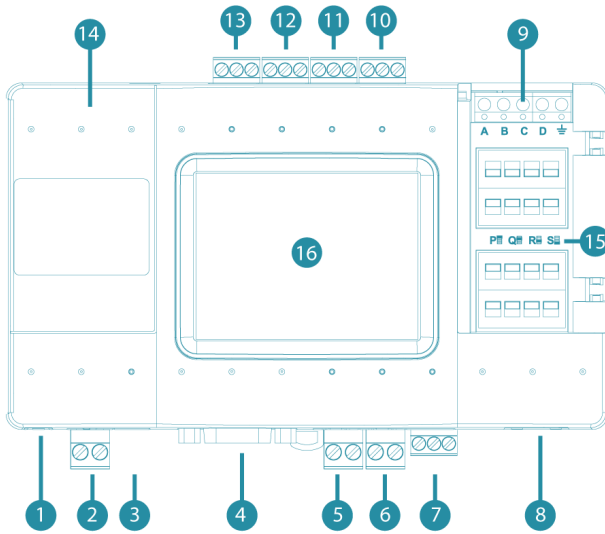
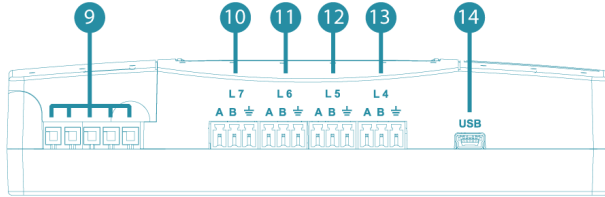


2 Acronyms

DTE	Data Terminal Equipment
ETH	Ethernet
GPIO	General Purpose Input/Output
HVAC	Heating Ventilation and Air Conditioning
TBD	To Be Defined



3 Layout



1. USB Host, HVAC Line L8
2. Power
3. Power Plug
4. RS232 Port
5. HVAC Line L1
6. HVAC Line L2
7. HVAC Line L3 or RS485 Port
8. Ethernet Port
9. GPIO
10. HVAC Line L7
11. HVAC Line L6
12. HVAC Line L5
13. HVAC Line L4
14. USB Device Port
15. DIP Switches P,Q, R,S
16. LCD with Touch Screen



4 Connectivity

4.1 HVAC Lines

CoolMaster Product Line supports eight HVAC Lines labeled as **L1 ... L8** (see [Layout](#)), intended for connection to various HVAC systems. All eight HVAC Lines can be used simultaneously (except **L1** with **L5** and **L2** with **L6**) and independently according to CoolMaster Product Line configuration. Most of the HVAC Lines are capable to support a number of HVAC Types as specified in table below, but one at a time, according to configuration of the specific Line.

HVAC Brand	Interface Line(s)	Interface Name	Connection Terminals	Line Maximum		Service Data
				Systems	IDU	
AUX(AU)	L4,L5,L6,L7		ODU A,B		64	N
Blue Star (BS)	L4,L5,L6,L7		ODU A,B	10	255	N
Chigo (CG)	L4,L5,L6,L7		ODU X,Y,E	16	64	N
Daikin (DK)	L1,L2	DIII-NET	ODU/IDU F1, F2	10	64	Y
Fujitsu (FJ)*	L8	LON	ODU X1,X2	16	128	Y
Gree GMV4 (GR)	L4,L5,L6,L7		ODU Conn	1	16	N
Gree GMV5/6*	L8		ODU G1,G2	32	128	Y
Hitachi (HT)	L1,L2	H-Link	ODU/IDU 1,2	>20	160	Y
Haier (HA)	L1,L2		ODU P,Q	1	64	Y
Kentatsu (KT)	L4,L5,L6,L7		ODU X,Y,E	16	64	N
LG (LG)	L4,L5,L6,L7		ODU CEN.A, CEN.B		128	Y
Mitsubishi Electric (ME)	L1,L2	M-NET	ODU TB7	10	50	Y
Mitsubishi Heavy (MH)	L4,L5,L6,L7	Super Link	ODU/IDU A,B	32	128	N
Midea (MD)	L4,L5,L6,L7		ODU X,Y,E	16	64	Y(V6)
Panasonic (PN)	L1,L2	S-NET	ODU/IDU U1,U2	16	64	N
Samsung (SM)	L4,L5,L6,L7	NASA	ODU R1,R2	15	64	Y
Sanyo (SA)	L1,L2	S-NET	ODU/IDU U1,U2	16	64	N
Toshiba	L1,L2	TCC Link	ODU/IDU U1,U2	40	64	Y
TICA (TC)	L4,L5,L6,L7		ODU A3,B3		64	N

Notes:

- [DIP Switches Q](#) and [R](#) are used to adjust lines **L1** and **L2** internal parameters to meet specific HVAC Type requirements.
- Lines **L1** and **L5** share the same internal resources of CoolMaster Product Line device and can not be used simultaneously.
- Lines **L2** and **L6** share the same internal resources of CoolMaster Product Line device and can not be used simultaneously. [DIP Switch P3](#) defines which line is enabled.
- Lines **L6** and **L7** can be linked into a single line **L7** with polarity auto-detection, by [DIP Switches P1](#) and [P2](#). Line **L2** can be enabled in this case.
- Line **L3** is by default used for ModBus RTU RS485 communication.

4.2 HomeAutomation/BMS Protocols

CoolMaster Product Line supports several Home Automation/BMS protocols.

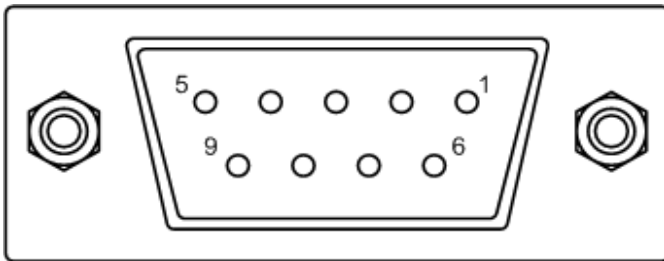
Home Automation/BMS Protocol	Acronym	Line(s)/Port
KNX	KNX	L3



PlugBus (CoolHub)	CH	L3,L4,L5,L6,L7
HDL buspro 4-wire	HDL	L3,L4,L5,L6,L7
HDL buspro IP		Ethernet
ModBus RTU CoolGate 4	CG4	L3,L4,L5,L6,L7
ModBus RTU CoolGate 5	CG5	L3,L4,L5,L6,L7
ModBus IP		Ethernet
SDDP		Ethernet
ASCII I/F		RS232, Ethernet
CoolRemote		Ethernet

4.3 RS232 Port

RS232 Interface on CoolMaster Product Line is available from the RS232 DB9 female connector. Below is a DB9 connector front view and signals table.



DB9 Pin	Signal Level	Description
2	±12V	TxD (Data from CoolMaster Product Line to DTE)
3	±12V	RxD (Data from DTE to CoolMaster Product Line)
5	GND	Ground
1,4,6,7,8		Not Connected

Gender and pinouts of the RS232 cable supplied with CoolMaster Product Line are suitable for connection to PC RS232 port directly or via standard RS232 to USB adapter. Maximal length of the RS232 Cable should not exceed 25m. By default RS232 Interface is dedicated for [ASCII I/F](#). The default CoolMaster Product Line RS232 Port settings are:

Baud Rate	9600
Data Bits	8
Parity Control	None
Stop Bits	1
Flow Control	None

4.4 Ethernet

CoolMaster Product Line incorporates an IEEE 802.3 compatible 10/100 Mb/s Ethernet port supported via RJ45 connector. Below are main port features.

Parameter	Value	Notes
-----------	-------	-------



Max Ethernet Cable Length	137m	CAT5 twisted pair cable
Bit Rate	10/100 Mb/s	
Supported Ethernet Protocols	10BASE-T/100BASE-TX	
Protocol Auto-Negotiation	Enabled	Against Link Partner

RJ45 connector comprises Link and Activity indication LEDs providing following statuses.

LED	Color	Function
Link Led	Green	ON for good link OFF for no link
Activity Led	Orange	BLINK for Tx/Rx Activity

Ethernet port is used by a number of protocol modules available in CoolMaster Product Line

- ASCII I/F (via [ASCII I/F IP Server](#))
- [ModBus IP](#)
- HDL buspro IP
- SDDP
- CoolRemote

Network setting of the CoolMaster Product Line are controlled with [ifconfig](#) command.

4.4.1 ASCII I/F IP Server

ASCII I/F IP Server referenced as **aserver** is a classic row TCP/IP socket server. Aserver has following default characteristics:

Maximal number of simultaneous connections	16
Default TCP/IP port	10102
Prompt character >	enabled





Aserver can be configured with [set](#) command.

4.4.2 Modbus IP

See [Modbus Integration Guidelines](#) document.

4.4.3 CoolRemote cloud connection

CoolMaster Product Line is constantly maintaining connection with CoolRemote cloud server once TCP/IP networking with internet access is established. CoolRemote connection status is displayed on LCD screen by the cloud icon in bottom right corner of the screen.

	No TCP/IP Networking
	Connected - Idle
	Connected - Communicating
	Disconnected - with error code

4.5 RS485

By default Line **L3** is used as an RS485 Interface line for **DTE** connection. CoolMaster Product Line supports the following RS485 based protocols:

- [ModBus RTU](#) (Slave mode)
- HDL buspro



4.5.1 ModBus RTU

CoolMaster Product Line can be used as a ModBus RTU slave device working in accordance with Modbus-IDA.ORG "MODBUS over serial line specification and implementation guide". RS485 default frame format is

Baud Rate	9600
Data Bits	8
Parity Control	None
Stop Bits	1
Flow Control	None

4.5.2 CG4

CG4 is based on ModBus RTU protocol. Its address map is similar to CoolGate device, previously manufactured by CoolAutomation (see CoolGate PRM for more information). CG4 protocol can be used for backward compatibility.

4.5.3 CG5

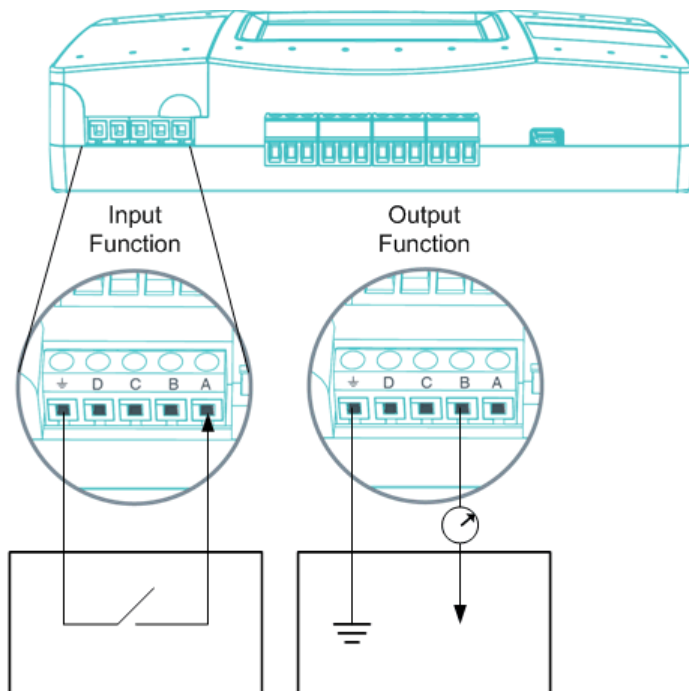
See [Modbus Integration Guidelines](#) document.

4.5.4 HDL buspro

See [HDL Integration Guidelines](#) document.

4.6 GPIO

CoolMaster Product Line supports four GPIO marked as **A B C D** (see [Layout](#)). GPIO can be in Input or Output mode depending on it's functionality





Parameter	GPIO A	GPIO B	GPIO C	GPIO D
Input Low Voltage (V _{IL})	<1V	<1V	<1V	ADC
Input High Voltage (V _{IH})	>2.4V	>2.4V	>2.4V	ADC
Output High Voltage (V _{OUT HI})	3.3V	3.3V	3.3V	3.3V
Max Output Current (I _{OUT})	20mA	20mA	20mA	20mA
Pull Up	5.6K	5.6K	5.6K	N.A.

Control of the GPIO functionality is done with [gpio](#) command.

4.7 USB

CoolMaster Product Line incorporate USB Device and USB Host ports. USB Device port is used for maintenance operations.

4.8 Power

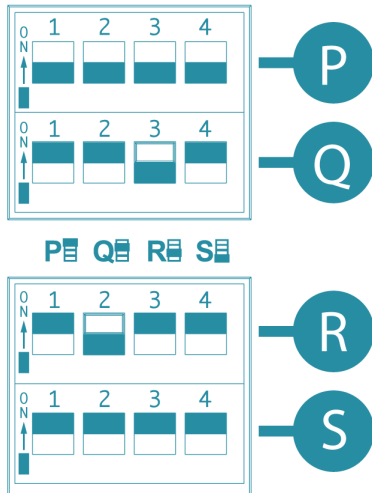
CoolMaster Product Line can be powered from different power sources:

- AC/DC adapter supplied with CoolMaster Product Line
- 12-24V DC from HVAC or other equipment
- USB Device port



5 DIP Switches

DIP Switches are located behind the small access door at the upper right side of the CoolMaster Product Line.



DIP Switch P

Switch	ON	OFF
P1,P2	Link L6,L7 and enable polarity auto-detection on L7	Separate L6,L7
P3	L6 Enabled, L2 Disabled	L2 Enabled, L6 Disabled
P4	Production Mode	Normal Operation Mode

Notes:

- Switches P1 and P2 should be in the same position. If they are both in ON position, HVAC Lines L6 and L7 are linked into one line with option to auto-detect line polarity. Otherwise, if both P1 and P2 are in OFF position HVAC Lines L6 and L7 are separate independent lines.
- If L6 and L7 are linked into L7, enabling of the L2 with P3 will not influence on L7 operation.
- Switch P4 must be in OFF position for normal operation of CoolMaster Product Line.

DIP Switches Q,R

DIP Switched Q and R are used to adjust HVAC Lines L1 and L2 internal parameters to meet specific HVAC type requirements.

HVAC Type	DIP Switch Q - HVAC Line L1			
	Q1	Q2	Q3	Q4
DK	ON	OFF	ON	OFF
ME	OFF	OFF	OFF	OFF
TO	OFF	ON	OFF	ON
SA	OFF	ON	OFF	ON
PN	OFF	ON	OFF	ON
HT	OFF	ON	OFF	ON
HA	OFF	ON	OFF	ON

HVAC Type	DIP Switch R - HVAC Line L2			
	R1	R2	R3	R4
DK	ON	OFF	ON	OFF
ME	OFF	OFF	OFF	OFF



TO	OFF	ON	OFF	ON
SA	OFF	ON	OFF	ON
PN	OFF	ON	OFF	ON
HT	OFF	ON	OFF	ON
HA	OFF	ON	OFF	ON

Notes:

- If all four Dip Switches R1, R2, R3, R4 are in ON position during CoolMaster Product Line power reset, CoolMaster Product Line will be forced to enter BOOT Mode.

Dip Switch S

Switch	ON	OFF
S1,S2	Enable DC Output on HVAC Line L1	Disable DC Output on HVAC Line L1
S3,S4	Enable DC Output on HVAC Line L2	Disable DC Output on HVAC Line L2

Notes:

- Switches S1 and S2 should be in the same position.
- Switches S3 and S4 should be in the same position.
- DC Output on HVAC Line L1 or L2 is required only in case when the line is configured as DK or ME and non VRF equipment is connected to this line (via KRP, MAC or similar adapter). **And only if no other DC source is present on this line.**



6 ASCII I/F

CoolMaster Product Line provides a simple and comprehensive ASCII I/F Protocol, based on text (ASCII) strings, representing verbal commands and responses. ASCII I/F implemented in CoolMaster Product Line is fully backward compatible with previous versions of CoolAutomation products, but has a number of significant extensions and improvements mainly aimed to support additional CoolMaster Product Line functionality. ASCII I/F can be utilized via RS232 interface (see [RS232 Port](#)) or TCP/IP [Server](#).

6.1 General Protocol Definitions

6.1.1 Messaging

Communication between DTE and CoolLinkNet via ASCII I/F is based on text (ASCII) strings. Communication example is shown below

>ls L2	←command	DTE to CoolLinkNet
L2.102 OFF 20C 27C Auto Cool OK - 0	←response	CoolLinkNet to DTE
L2.103 OFF 20C 24C Low Auto OK - 0	←exit code	
OK	←prompt	
>		

Command string sent to CoolLinkNet must be terminated with <CR> (carriage return 0x0D) <LF> (line feed 0x0A) sequence or a single <CR> character. Strings from CoolLinkNet (except prompt character) are always terminated with <CR> <LF>. Commands are case sensitive and should not contain leading or trailing spaces. The only separator between command name and command parameter(s) is space (0x20) character. Configuration parameter **echo** (see [set](#) command), defines if characters sent to CoolLinkNet [via RS232 interface](#) are echoed back or not. If **echo** is not zero - characters are echoed.

In case of RS232 interface, prompt character '>' is unconditionally sent by CoolLinkNet. In case of [ASCII Server](#) prompt sending is configurable.

6.1.2 Exit Code

CoolMaster Product Line provides Exit Code in verbose or numeric form. Numeric form format is

ERROR : N

where N is a number in range 0...999. If verbose format is not specified in table below it means error has only numeric format.

Numeric	Verbose	Description
0	OK	Command executed successfully
1	No UID	UID not found
2	Not Strict UID	UID must be precise
3	Bad Format	Command format is wrong
4	Failed	Command execution failed
5	Line Unused	Line is unused
6	Unknown Command	Command is unknown
7	Bad HVAC Line	Line number is wrong
8	Bad Function	Wrong function
9	Bad Line Type	Wrong line type definition
10	Bad Parameter	Command parameter is wrong
11	OK, Boot Required!	Command execution will be effective after reboot
12	Bad GPIO	Wrong GPIO
13	SDDP Disabled	SDDP module is disabled, enable it to proceed
14	Virtual Address In Use	Virtual address already in use



15	Bad Property	Wrong property
16	Number of lines exceeded	Can't define more line types
17	Warning! Dip Switch State Incorrect	Dip switch state is incorrect for defined line type
18	SDDP Not Initialized	SDDP is enabled, but Ethernet link is still down
80	ModBus Error:80	No response from the addressee
81	ModBus Error:81	Big timeout between bytes in received message
82	ModBus Error:82	Small timeout between bytes in received message
83	ModBus Error:83	Received message with internal timeout
84	ModBus Error:84	Received message is too big
85	ModBus Error:85	CRC error in received message
86	ModBus Error:86	ModBus exception in response
100	Collision	Collision in sent command on HVAC line
101	Unsupported Feature	Unsupported command or command's parameter for this HVAC line
102	Incorrect Indoor Type	Chosen Indoor Unit doesn't support this command or command's parameter
103	No ACK From Indoor	Indoor Unit didn't acknowledged sent command
104	Time Out on Receive	No response from Indoor Unit
105	CS Error In Received Message	Check Sum error in received message
106	Line Init In Progress...	Can't show lines status due to initialization process
107	Line Error	Some error on the HVAC line
108	Feed Disabled	Indoor Unit can't receive measured ambient temperature due to its switch position
150	HDL Not Initialized	HDL line was not defined or ethernet cable is unplugged
151	HDL DB Overflow	HDL Data Base is full, can't add new configuration
152	HDL Eth Disabled	HDL over ethernet disabled
200	UID Not Found	Specified Indoor Unit not found in Data Base
201	Strict UID Not Found	Specified Indoor Unit by uid strict not found in Data Base
202	Indoor Removed	Indoor Unit removed from Data Base
203	DB Overflow	Indoor Units Data Base is full, can't add new one
204	Group DB Overflow	Group Data Base is full, can't add new group
205	VA DB Overflow	Virtual address Data Base is full, can't associate Indoor Unit with new virtual address
206	FDB5 Overflow	Properties Data Base is full, can't add new property
250	Link DB Overflow	Link Data Base is full, can't link new CoolPlug device with Indoor Unit
251	No CoolHub Line	CoolHub line not defined, define it to proceed
252	Auto Visibility Failed	During link creation there was an error on adding visibility props
253	Link already exists	CoolPlug device already linked, delete previous link before creating the new one
307	KNX DB Overflow	KNX Data Base is full, can't add new group
309	KNX Not Connected	No connection with KNX chip
310	KNX Line Not Started	KNX line not defined

6.1.3 UID

UID is used to identify Indoor Unit or a set of Indoor Units. UID has the following format:

Line number	Dot	Indoor number	
Ln	.	X	YY

- Line is a CoolMaster Product Line HVAC Line number like L1, L2,... L* means "any line". To provide backward compatibility with CoolMaster or CoolLink devices, Line number can be omitted from the UID.



- Dot is a separator between Line number and Indoor number. If Line number is omitted or has a L* form, dot must also be omitted.
- Indoor number is an Indoor Unit number in HVAC system. Indoor number can be '*' that means "any"

Examples:

L1.102	Indoor Unit 102 on line L1
L2.003	Indoor Unit 003 on line L2
L*100	Set of Indoor Units 100 on all lines
L3.1*	Set of Indoor Units 1xx on line L3 (L3.100, L3.101, ...)
L4	All Indoors on line L4
L*	All Indoors on all lines
203	Similar to L*203 (for backward compatibility only)

UID_STRICT

In some cases only specific Indoor Unit had to be referenced by UID. In this case it is required to use UID_STRICT in format Ln.XYY where '*' usage is prohibited.

HVAC systems with 4-digit Indoor unit numbers

For HVAC systems with 4-digit Indoor unit numbers: N1N2 - N3N4, the first two digits N1 N2 in range 00-15, will be encoded into X part of the UID according to the following table. The last two digits N3 N4 will be equal to YY part of the UID.

N1N2 - N3N4	X YY	Example for line L1	
		Indoor Unit number	UID
00 - N3N4	0 N3N4	00-12	L1.012
01 - N3N4	1 N3N4	01-12	L1.112
02 - N3N4	2 N3N4	02-12	L1.212
03 - N3N4	3 N3N4	03-12	L1.312
04 - N3N4	4 N3N4	04-12	L1.412
05 - N3N4	5 N3N4	05-12	L1.512
06 - N3N4	6 N3N4	06-12	L1.612
07 - N3N4	7 N3N4	07-12	L1.712
08 - N3N4	8 N3N4	08-12	L1.812
09 - N3N4	9 N3N4	09-12	L1.912
10 - N3N4	A N3N4	10-12	L1.A12
11 - N3N4	B N3N4	11-12	L1.B12
12 - N3N4	C N3N4	12-12	L1.C12
13 - N3N4	D N3N4	13-12	L1.D12
14 - N3N4	E N3N4	14-12	L1.E12
15 - N3N4	F N3N4	15-12	L1.F12

Besides generic UID encoding rules, described above, there are special rules applicable for specific HVAC systems.

UID encoding for Hitachi (HT) HVAC system

RN	HT Indoor Unit number		UID for line L1
	ADDR		
00	00 - 63		L1.000 - L1.063
01	00 - 63		L1.100 - L1.163
02	00 - 63		L1.200 - L1.263
03	00 - 63		L1.300 - L1.363
04	00 - 63		L1.400 - L1.463
05	00 - 63		L1.500 - L1.563
06	00 - 63		L1.600 - L1.663



07	00 - 63	L1.700 - L1.763
08	00 - 63	L1.800 - L1.863
09	00 - 63	L1.900 - L1.963
10	00 - 63	L1.A00 - L1.A63
11	00 - 63	L1.B00 - L1.B63
12	00 - 63	L1.C00 - L1.C63
13	00 - 63	L1.D00 - L1.D63
14	00 - 63	L1.E00 - L1.E63
15	00 - 63	L1.F00 - L1.F63
16	00 - 35	L1.064 - L1.099
17	00 - 35	L1.164 - L1.199
18	00 - 35	L1.264 - L1.299
19	00 - 35	L1.364 - L1.399
20	00 - 35	L1.464 - L1.499
21	00 - 35	L1.564 - L1.599
22	00 - 35	L1.664 - L1.699
23	00 - 35	L1.764 - L1.799
24	00 - 35	L1.864 - L1.899
25	00 - 35	L1.964 - L1.999
26	00 - 35	L1.A64 - L1.A99
27	00 - 35	L1.B64 - L1.B99
28	00 - 35	L1.C64 - L1.C99
29	00 - 35	L1.D64 - L1.D99
30	00 - 35	L1.E64 - L1.E99
31	00 - 35	L1.F64 - L1.F99

6.2 Commands Reference

Synopsis and description of the commands listed below have the following notation:

- Parameters or parameters group in angle brackets < > are mandatory.
- Parameters or parameters group in square brackets [] are optional and can be omitted.
- The curly braces () are used to denote group inside braces
- The | character between parameters inside brackets means OR.

6.2.1 Configuration Commands

[set](#)
[line](#)
[ifconfig](#)
[boot](#)
[props](#)
[link](#)

[simul](#)
[gpio](#)
[info](#)
[modbus](#)
[ad](#)

[plug](#)
[knx](#)
[hcl](#)
[sddp](#)
luxom

**set****SYNOPSIS**

```
set [<SETTING> <VALUE> ]
set defaults
```

DESCRIPTION

Query or change CoolMaster Product Line setting(s). Without parameters **set** command will list all supported settings and their values. To change setting use format with **<SETTING>** and **<VALUE>**. Some settings are read only (RO) and can not be changed.

set defaults will load default values to all settings

<SETTING>	Mode	Printed as	Value*	Description	Min Version
S/N	RO	S/N		CoolMaster Product Line Serial Number	
version	RO	version	X.Y.Z	CoolMaster Product Line Firmware Version	
app	R/W	application	string	CoolMaster Product Line Application	
baud	R/W	baud rate	1200...115200	RS232 Interface baud rate. Default: 9600	
echo	R/W	echo	0 or 1	RS232 Interface echo control. 0 - disabled, 1 - enabled	
verbose	R/W	verbose	0 or 1	Exit Code format. 0 - numeric, 1 - verbose	
aserver port	R/W	aserver port	integer	aserver TCP port. Default: 10102	
aserver prompt	R/W	aserver prompt	0 or 1	aserver prompt control	
deg	R/W	deg C/F	C/c or F/f	Temperature scale Celsius or Fahrenheit	
melody	R?W	melody	string	Power Up melody. The value is printed as melody name, to change the melody its number should be typed. set melody will list supported melodies and their numbers.	
filter visi	R/W	filter	visi 0 or visi 1 or visi -	Indoor Units visibility regarding props command. [-] - props visibility applies only to LCD, [1] - props visibility applies to LCD and status/control commands, [0] - props visibility logic is inverted and it applies to LCD and status/control commands	
HVAC lines	RO	HVAC lines	0..8	Allowed number of HVAC lines. Can be changed with encoded activation string.	
mmi lock	R/W	MMI lock	0 or 1	Prohibit LCD touch screen operation.	1.3.0

* - Bold values are defaults.

EXAMPLE

Disable echo

```
>set echo 0
```

```
OK
```

Change aserver TCP port

```
>set aserver port 12345
```

```
OK
```



Load defaults

```
>set defaults
```

```
OK
```

Apply props visibility to status/control commands

```
>set filter visi 1
```

```
OK, Boot Required!
```

Set RS232 Interface to 19200, 8 data bits, even parity, 1 stop bit

```
>set baud 19200 8E1
```

```
OK
```

Set temperature scale to Fahrenheit

```
>set deg f
```

```
OK
```

Set PowerUp melody to 3

```
>set melody 3
```

```
OK
```

line

SYNOPSIS

```
line
```

```
line <PROPERTY> <Ln> <VAL>
```

DESCRIPTION

Query or change [HVAC Line\(s\)](#) status and configuration. In format without parameters **line** command will provide information about current Line statuses. Second format is used to change write enabled properties.

<PROPERTY>	Mode	Value	Description	Notes
master	R/W	0 or 1	CoolMaster Product Line acts as a Master device	DK, LG, SA, TO, PN only
simul	R/W	integer	Simulate given number of Indoor Units. To disable simulation use "0". Simulation is persistent (not disabled after power reset) By default the simulation model is: with failures, no ventilation units, no input/output units. To enable/disable special conditions use the following flags: +/-flr, +/-vam, +/-io (see example)	Input/Output units for ME only Ventilation units for DK, ME, LG only
myid	R/W	string	CoolMaster Product Line Own address on given HVAC Line. For ModBus RTU Line myID is a "Slave Device Address"	
baud	R/W		Configure UART parameters for given Line. Value format is: <BAUD> <8 9><N E O><1 2> For example: 9600 8N1	Where applicable
Tx	RO	integer counter	Transmitted messages	Printed as Last/Total Last means since previous print
Rx	RO		Received messages	
TO	RO		Timeout errors	
CS	RO		Checksum errors	
Col	RO		Collision errors	
NAK	RO		NAK errors	
haux	R/W	heat or haux	Heat mode treated as Haux mode. This is only for situation when HomeAutomation controller doesn't have Haux support, but need to set Haux mode on ThermoPad(s) connected to CH line.	For CoolHub (CH) line only



type	R/W	string	Define line type by acronym . Number of HVAC lines cannot exceed the value of HVAC lines in set command. HomeAutomation/BMS lines don't count as HVAC Lines. To free a line use Unused instead of acronym.	See the full list of HVAC and HomeAutomation/BMS lines supported
scan	R/W	0 or 1	Implicitly detect Indoor Units	ME, HT, SA, TO, PN only
DCOUT	R/W	- or +	Control DC output on L1,L2	DK,ME only
slink	R/W	O/o or N/n	Configure Mitsubishi Heavy SuperLink mode: O - old, N - new	MH only
			Configure Samsung model type: O - DVM, N - DVM-S	SM only
[A B] or [B A]	RO		Current polarity	Line L7 only

EXAMPLE

```
>line
L1: SA U00/G02 myID:E5
Tx:732/732 Rx:47227/47227 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
L2: DK Master U00/G07 myID:0B
Tx:4579/4579 Rx:50633/50633 TO:3/3 CS:0/0 Col:10/10 NAK:0/0
L3: Unused
Tx:0/0 Rx:0/0 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
L4: Unused
Tx:0/0 Rx:0/0 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
L5: Unused
Tx:0/0 Rx:0/0 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
L6: Unused
Tx:0/0 Rx:0/0 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
L7: MH SLink:N U00/G02 myID:C900 [A|B]
Tx:20072/20072 Rx:26989/26989 TO:25/25 CS:0/0 Col:1/1 NAK:0/0
OK
```

Become Slave on Line L4

```
>line master L4 0
OK, Boot Required!
```

Set Line L3 baud rate to 19200, 8 data bits, even parity, 1 stop bit

```
>line baud L3 19200 8E1
OK, Boot Required!
```

Simulate 5 Units on line L2 without failures, no ventilation units and with input/output units

```
>line simul L2 5 -flr-vam+io
OK, Boot Required!
```

Heat mode will be treated as haux for ThermoPads connected to CH line

```
>line haux L3 heat
OK, Boot Required!
```

Make Line L2 Unused



```
>line type L2 Unused
```

```
OK, Boot Required!
```

Make Line L2 to work with TO HVAC type

```
>line type L2 TO
```

```
OK, Boot Required!
```

HDL Bus Pro on Line L3

```
>line type L3 HDL
```

```
OK, Boot Required!
```

ifconfig

SYNOPSIS

```
ifconfig
ifconfig <PROPERTY> <VALUE>
ifconfig enable|disable
```

DESCRIPTION

Query or configure Ethernet network settings. Without parameters, **ifconfig** command will list current configuration. To change configuration use format with **<PROPERTY>** and **<VALUE>**. Parameter **IP** can be set to **DHCP** (DHCP client) or fixed IP number. In case of DHCP - Netmask and Gateway values are provided by DHCP server. By default CoolMaster Product Line is configured for DHCP client operation. CoolMaster Product Line Ethernet module can be enabled or disabled with corresponding command.

<PROPERTY>	Mode	Value	Description	Notes
MAC	RO	string	MAC (Media Access Control) address of CoolMaster Product Line	
Link	RO	Up or Down	Indicate whether ethernet link is active	
IP	R/W	string	Set fixed (static) IP address or set it to DHCP	
Netmask	R/W	string	Set Netmask address in case IP is static	
Gateway	R/W	string	Set Gateway address in case IP is static	
DNS1	R/W	string	Set preferred DNS address	
DNS2	R/W	string	Set alternate DNS address	

EXAMPLE

Query

```
>ifconfig
```

```
MAC      : 28:3B:96:00:02:0F
```

```
Link     : Up
```

```
IP       : 192.168.16.108 (DHCP)
```

```
Netmask: 255.255.255.0
```

```
Gateway: 192.168.16.254
```

```
DNS1    : 8.8.8.8
```

```
DNS2    : 8.8.4.4
```

```
OK
```

Configure fixed IP, Gateway and Netmask

```
>ifconfig IP 192.168.1.102
```

```
OK, Boot Required!
```



```
>ifconfig Gateway 192.168.1.0
OK, Boot Required!
>ifconfig Netmask 255.255.0.0
OK, Boot Required!
Configure DHCP client operation
>ifconfig IP DHCP
OK, Boot Required!
Disable Ethernet
>ifconfig disable
OK, Boot Required!
Change DNS preferred address
>ifconfig DNS1 208.67.222.222
OK, Boot Required!
```

boot

SYNOPSIS

```
boot
boot [N]
```

DESCRIPTION

- <N> omitted - Enter Boot Mode
- <N> = 2 - Reset CoolMaster Product Line

sddp

SYNOPSIS

```
sddp
sddp <enable|disable|identify|offline|alive>
```

DESCRIPTION

Configure Control4® Simple Device Discovery Protocol (SDDP) module. CoolMaster Product Line is compliant with Control4® SDDP v1.0 specification and can act as SDDP enabled device.

- Without parameters, if SDDP module was enabled and Ethernet cable connected, `sddp` command will list supported protocol version and packet counters.
- `sddp enable` - persistently enables SDDP module (effective after reset). Default state.
- `sddp disable` - persistently disables SDDP module (effective after reset)
- `sddp identify` - sends IDENTIFY message to Control4® Composer tool to add CoolMaster Product Line to the current project
- `sddp offline` - signals that CoolMaster Product Line is going offline
- `sddp alive` - signals that CoolMaster Product Line is online

EXAMPLE

Enable SDDP module

```
>sddp enable
OK, Boot Required!
Send IDENTIFY message
>sddp identify
OK
```

**knx****SYNOPSIS**

```

knx
knx addr <area/line/device>
knx ram <R>
knx funcs
knx group
knx group <GA>[ <func> <direction> <UID>]
knx group dellall
knx group -<G>

```

DESCRIPTION

Query or change KNX status and configuration. In format without parameters **knx** command will provide information about current connection status and number of used groups.

- **knx addr <area/line/device>** - Set KNX physical address in the form of area/line/device
- **knx ram <R>** - Create group Data Base for R groups. The operation will take effect after reboot. Use this operation only if default group Data Base is too small. The current Data Base usage can be seen in **knx** command.
- **knx funcs** - Print all available group functions.
- **knx group** - List existing KNX groups (linkage status)
- **knx group <GA>** - List existing KNX groups (linkage status) for the given group address
- **knx group <GA> <func> <direction> <UID>** - Create new KNX group, i.e. link KNX group address <GA> with CoolMaster Product Line function and UID. <GA> can be in the form of Main/Mid/Sub or Main/Sub, direction: < - CoolMaster Product Line input, > - CoolMaster Product Line output.
- **knx group dellall** - Delete all KNX groups
- **knx group -<G>** - Delete KNX group number <G>. Group numbers displayed in the list of existing groups.

SUPPORTED FUNCTIONS

Name used in command	Full name	Values	Data type	Can be sent to CoolMaster Product Line	Can be sent from CoolMaster Product Line
onoff	On/Off	0 - off, 1 - on	1.001	✓	✓
ST	Set temperature	float value according to data type	9.001	✓	✓
RT	Room Temperature	float value according to data type	9.001	✓	✓
Mode	Mode value	0 - cool, 1 - heat, 2 - auto, 3 - dry, 5 - fan	5.010	✓	✓
M	Mode	0 - cool, 1 - heat	1.001	✓	✓
Fstep	Fan speed step	0 - previous fan speed, 1 - next fan speed (according to fspeed properties *)	1.001	✓	
F8	Fan speed count	value is a sequential fan speed regarding allowed fan speeds in fspeed properties *	5.010	✓	✓
F%	Fan speed scale %	the percent value is converted to fan speed count (previous function) and then to actual fan	5.001	✓	✓



	speed, the steps are inverted when fan speed is sent from CoolMaster Product Line			
--	---	--	--	--

Notes:

* - If properties record doesn't exist default fan speeds are used: low, medium, high, auto

EXAMPLE

Print KNX status

```
>knx
```

```
KNX Line   : Not Detected
```

```
KNX RAM    : 7/128
```

```
OK
```

Create KNX group: link 10/0/1 with L1.100 as CoolMaster Product Line Mode input

```
>knx group 10/0/1 M < L1.100
```

```
OK
```

Create KNX group: link 10/0/1 with L1.100 as CoolMaster Product Line Room Temperature output

```
>knx group 10/0/1 RT > L1.100
```

```
OK
```

List KNX group for group address 10/0/1

```
>knx group 10/0/1
```

```
G000:10/0/1 [ On/Off           ] < L1.100
```

```
G001:10/0/1 [ Mode             ] < L1.100
```

```
G002:10/0/1 [ Room temperature ] > L1.100
```

```
OK
```

Print all available group functions

```
>knx group 10/0/1
```

```
  onoff -> On/Off           DT:{1.001} [<|>]
```

```
  ST    -> Set temperature  DT:{9.001} [<|>]
```

```
  RT    -> Room temperature DT:{9.001} [<|>]
```

```
  M     -> Mode             DT:{1.001} [<|>]
```

```
  Fstep -> Fan speed step   DT:{1.001} [<| ]
```

```
  F8    -> Fan speed count  DT:{5.010} [<|>]
```

```
  F%    -> Fan speed scale % DT:{5.001} [<|>]
```

```
OK
```

Delete group number 2

```
>knx group -2
```

```
OK
```

props**SYNOPSIS**

```
props
```

```
props <UID_STRICT> <PROPERTY> <VAL>
```

```
props delall
```

DESCRIPTION

Query or change CoolMaster Product Line internal database of Indoor Unit properties. Changes made in database have no impact on physical capabilities of related indoor units.

In format without parameters **props** command will list all stored properties in table view.



<PROPERTY>	Mode	Value	Description	Notes
name	R/W	string	Alternate name of the Indoor Unit to be shown on CoolMaster Product Line's LCD screen. By default, this property is not defined and UID is shown instead.	
visi (visible)	R/W	0 or 1	Defines Indoor Unit visibility on LCD screen. 0 - invisible, 1 - visible. Also depends on filter setting.	Effective after reboot
fspeed	R/W	<+ ->v, l, m, h, t, a	Defines Indoor Unit fan speeds available via LCD touch screen control and commands to/from KNX bus. + allow, - forbid, v - very low/quiet, l - low, m - medium, h - high, t - top, a - auto.	a number of properties can be combined in one command (see examples below)
mode	R/W	<+ ->c, d, f, h, hx, hh, a	Defines Indoor Unit operation modes available via control commands to/from KNX bus. c - cool, d - dry, f - fan, h - heat, hx - haux, hh - heat & haux, a - auto	
tlim	R/W	Tmin Tmax cool Tmin Tmax heat Tmin Tmax	Defines global, cool or heat setpoint min and max limit.	
elock	R/W	<+ ->o, m, t, c, h	Enforced lock to inhibit external changes. CoolMaster Product Line will override back the changes coming from the external sources. Available locks are: o-ON/OFF, m-operation mode, t-setpoint, c-forced cool mode, h-forced heat mode	a number of locks can be combined in one command.

Notes:

Bold values represent defaults.

Indoor Unit properties record is created only upon first change in database made for this unit.

Command **props delall** will totally erase database, returning all properties to their default values.

EXAMPLE

Add name property to Indoor Unit 204 on line L6

```
>props L6.204 name Kitchen
```

```
OK
```

Make Indoor Unit 102 on line L1 invisible on LCD

```
>props L1.102 visi 0
```

```
OK, Boot Required!
```

Forbid medium and auto fan speeds to Indoor Unit 107 on line L2

```
>props L1.102 fspeed -m-a
```

```
OK
```

Allow only cool, fan and haux modes to Indoor Unit 101 on line L1

```
>props L1.101 mode +c+f+hx-h-d-hh-a
```

```
OK
```

Inhibit external changes of ON/OFF status and setpoint



```
>props L1.101 elock +o+t
```

```
OK
```

Set global setpoint limits

```
>props L1.101 tlim 20 30
```

```
OK
```

Set heating mode setpoint limits

```
>props L1.102 tlim heat 25 30
```

```
OK
```

List all stored properties

```
>props
```

UID	Name	Visi	Modes	Fspeeds	TLim	Cool	Heat	Elocks
L8.104	Kitchen	1	c d f h a	l m h a	-- --	-- --	-- --	
L1.204	-	1	c d f h a	l m h a	-- --	19 24	-- --	
L3.004	-	1	c d f h a	l m h a	18 35	-- --	-- --	
L1.205	-	1	c d f h a	l m h a	-- --	19 28	20 32	

link

SYNOPSIS

```
link
link delall
link -L
link ram R
link <UID1_STRICT><=|~><UID2_STRICT>
```

DESCRIPTION

Control link operation in CoolMaster Product Line. Linking ThermoPad on [CoolHub](#) line with Indoor Unit will grant the ThermoPad full control over the Unit.

- In format without parameters `link` will list existing links
- `link delall` - delete all links
- `link -L` - delete link number L (link numbers displayed in the list of existing links)
- `link ram R` - create link Data Base for R groups. The operation will take effect after reboot. Use this operation only if default link Data Base is too small.
- `link <UID1_STRICT><=|~><UID2_STRICT>` - create new link, where UID1 is ThermoPad on [CoolHub](#) line and UID2 is Indoor Unit. The command generate invisible [property](#) for one of the UID's. `<=|~>` defines link type: = regular link, the ThermoPad will become invisible; ~ link with haux mode usage, the Indoor Unit will become invisible. Regular link will allow to control the Indoor Unit through UID2, while haux link through UID1.

EXAMPLE

List existing links

```
>link L3.082=L1.101
```

```
L000: L3.081 <--> L7.096
```

```
L001: L3.083 <--> L1.100
```

```
OK
```

Delete link number 0

```
>link -0
```

```
OK
```

Link ThermoPad 082 on line L3 with Indoor Unit 101 on line L1 (regular link)



```

>link L3.082=L1.101
OK, Boot Required!
Link ThermoPad 080 on line L3 with Indoor Unit 100 on line L1 (haux link)
>link L3.080~L1.100
OK, Boot Required!
Delete all links
>link delall
OK
Create link Data Base for 60 links
>link ram 60
OK, Boot Required!

```

plug

SYNOPSIS

```
plug <UID_STRICT> <ASCII I/F command>
```

DESCRIPTION

Forward ASCII I/F command to CoolPlug device connected to CH line. CoolPlug device is recognized by CoolMaster Product Line as Indoor Unit referenced by [UID](#).

EXAMPLE

Send **set** command to CoolPlug device 080 on CoolMaster Product Line line L3

```

>plug L3.080 set
S/N          : 00E60100
version      : 0.0.2
baud rate    : 9600
echo         : 1
verbose      : 1
deg C/F      : C
HVAC lines   : 1
OK
OK

```

Query lines status of CoolPlug device 080 on CoolMaster Product Line line L3

```

>plug L3.080 line
L1: P1P2 A:Master U00/G10 Simul(10) Not Main RC
Tx:1154/1695 Rx:1153/1694 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
L2: PB Address:0x50(80) 9600_8N1
Tx:752/1038 Rx:1497/2319 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
OK
OK

```

ad

SYNOPSIS

```
ad <Ln> <ASCII I/F command>
```

DESCRIPTION

Forward ASCII I/F command to CMNET-GR-GMV5 device connected to GMV5 line.

**EXAMPLE**

Send **set** command to CMNET-GR-GMV5 on CoolMaster Product Line line L8

```
>ad L8 set
S/N          : 12345678
version      : 0.0.2
baud rate    : 9600
echo         : 1
verbose      : 1
OK
>OK
```

Query current lines status of CMNET-GR-GMV5 on CoolMaster Product Line line L8

```
>ad L8 line
L1: CAN Speed:50000 myid:728
Tx:0/0 Rx:0/0 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
L2: CAN Speed:50000 myid:728
Tx:0/0 Rx:0/0 TO:0/0 CS:0/0 Col:0/0 NAK:0/0
OK
>OK
```

hdl**SYNOPSIS**

```
hdl
hdl delall
hdl - <UID_STRICT>
hdl + <UID_STRICT> <channel> <AC_No> <enable>
<m0m1m2m3m4f0f1f2f3>
hdl eth
hdl eth <enable|disable>
hdl eth myid <ID>
```

DESCRIPTION

Query or change HDL status and configuration. In format without parameters **hdl** command will list existing AC (Air Condition) configurations in similar way it is displayed in HDL Buspro Setup tool.

- **hdl delall** - delete all AC configurations
- **hdl - <UID_STRICT>** - delete AC configuration for specific Indoor Unit
- **hdl + <UID_STRICT> <channel> <AC_No> <enable> <m0m1m2m3m4f0f1f2f3>** - create AC configuration for Indoor Unit. All parameters are taken from AC configurations table in HDL Buspro Setup tool: channel - line number in AC configurations table, AC_No - integer number to bind to Indoor Unit, enable - 0 (invalid) or 1 (valid), modes - m0=cool m1=heat m2=fan m3=auto m4=dry, fan speeds - f0=auto f1=high f2=medium f3=low: +=allowed -=not allowed (see example).
- **hdl eth** - print HDL ethernet status and packet counters
- **hdl eth <enable|disable>** - enable/disable HDL over ethernet
- **hdl eth myid <ID>** - change Subnet and Device ID: the ID is entered in hexadecimal format, MS byte is Subnet ID, LS byte is Device ID (see example)

Notes:

Subnet ID and Device ID of HDL RS485 line can be changed with [line myid](#) command.

**EXAMPLE**

List existing AC configurations

```
>hdl
```

Ch	AC	En	Remark	CA	CHFAD	AHML
1	1	1	L1.100	L1.100	++---	-+++
2	2	1	L1.101	L1.101	++++-	++++

```
OK
```

Delete AC configuration for Indoor Unit L1.101

```
>hdl - L1.101
```

```
OK
```

Create AC configuration for Indoor Unit L2.301: channel=2, AC number=2, valid, modes=cool heat, fan speeds=high medium

```
>hdl + L2.301 2 2 1 ++-----++
```

```
OK
```

HDL ethernet status

```
>hdl eth
```

```
status      : enabled
ID          : 0x01 0x63
send cntr   : 0
recv cntr   : 0
crc cntr    : 0
```

```
OK
```

Enable HDL over ethernet

```
>hdl eth enable
```

```
OK, Boot Required!
```

Change HDL ID of CoolMaster Product Line: Subnet ID=0x01=1, Device ID=0x63=99

```
>hdl eth myid 0163
```

```
OK, Boot Required!
```

simul**SYNOPSIS**

```
simul [Ln] <CNT>
```

DESCRIPTION

Simulate <CNT> Indoor Units on HVAC Line <Ln>. If <Ln> is omitted the first not "Unused" HVAC Line will be taken. Simulation is not persistent and CoolMaster Product Line reset will terminate it.

EXAMPLE

Simulate 5 Indoor Units on HVAC Line L2

```
>simul L2 5
```

```
OK
```

gpio**SYNOPSIS**

```
gpio
gpio func <A|B|C|D> <GPIO_FUNCTION>
gpio norm <A|B|C|D> <c|C|o|O>
```



DESCRIPTION

Query or configure [GPIO](#) functionality. GPIO configurations are persistent (over power reset) and take effect only after reboot.

- Without parameters `gpio` command provides information about current GPIO configuration in the below format:

```
>gpio
A: ALL OFF (HI), N.O.
B: ALL ON (LO), N.C.
C: Unused (HI)
D: Unused (HI)
OK
```

Field	Value	Description
GPIO name	A,B,C,D	
GPIO function	Unused	GPIO has no functionality and stays in HiZ input state
	ALL OFF Input	Turn all Indoor Units OFF in transition from Normal to Active state
	ALL ON Input	Turn all Indoor Units ON in transition from Normal to Active state
	OOS Output	On/Off Status. GPIO is in Normal state if all Indoor Units are OFF. GPIO is in Active state if at least one Indoor Units is ON
	ALL INH Input	Turn all Indoor Units OFF in transition from Normal to Active state. Hold Indoor Units OFF while GPIO is in Active State. Upon transition from Active to Normal state turn ON Indoor Units that were ON before
	FLRS Output	Failure Status. GPIO is in Normal state if all Indoor Units have no failure. GPIO is in Active state if at least one Indoor Units has a failure
	BI	Use GPIO as Binary Input Sensor (0-LO 1-HI)
	BO	Use GPIO as Binary Output Actuator (0-LO 1-HI)
Current GPIO Signal Level	(HI)	Signal Level on GPIO is HI
	(LO)	Signal Level on GPIO is LO
Signal Level in Normal State	N.O.	Normal state of GPIO is "Normally Open" (HI)
	N.C.	Normal state of GPIO is "Normally Closed" (LO)

- `gpio func <A|B|C|D> <GPIO_FUNCTION>`
Configure GPIO function. Supported GPIO functions are listed in table above.

- `gpio norm <A|B|C|D> <c|c|o|o>`
Configure Normal state of GPIO.

EXAMPLE

Disable GPIO A functionality

```
>gpio func A Unused
OK, Boot Required!
```

Set GPIO C function to "ALL OFF"

```
>gpio func C ALL OFF
OK, Boot Required!
```

Set Normal state of GPIO A to N.C.

```
>gpio norm A C
```



OK

info**SYNOPSIS**`info`**DESCRIPTION**

Query <%PROD> dip switches position and DC output on lines L1 and L2.

```
>info
DIP P: | X | OFF | X | X |
DIP Q: | ON | X | ON | X |
DIP R: | X | X | X | X |
DIP S: | X | ON | ON | ON |
L1 DC- OFF 0V
L2 DC+ ON 16V
OK
```

Parameter		Description	
DIP switch	ON	DIP switch is ON	
	OFF	DIP switch is OFF	
	X	DIP switch can't be read	
Line DC	+	DCOUT enable command was given to CoolMasterNet	
	-	DCOUT disable or no command at all was given to CoolMasterNet	
	0v	No voltage detected on the line	
	16v	16 volt detected on the line (own or external)	
	ON	CoolMasterNet enabled DC output on the line	On reboot, CoolMasterNet will enable DC output only if DCOUT enable command was given and DIP switch S is in correct position, otherwise it will disable DC output
	OFF	CoolMasterNet disabled DC output on the line	

modbus**SYNOPSIS**

```
modbus [ <SETTING> <VALUE> ]
modbus cg4
```

DESCRIPTION

Query or change CoolMaster Product Line ModBus configurations. Without parameters **modbus** command will list current ModBus configurations.

<SETTING>	Mode	Printed as	Value	Description
IP	R/W	ModBus IP	enable or disable	Enable/Disable ModBus IP server
server port	R/W	server port	integer	Change Modbus IP server port
ignore	R/W	CG4 ignore*	r	The setting is toggable, first command will enable the setting, second will disable (see example)



cg4	RO		List CoolGate 4 ModBus addresses of existing (visible with ls command) Indoor Units
-----	----	--	---

Notes:

* - This setting is applicable only for [CoolGate 4](#). When the setting is enabled it will allow to read/write registers of several indoors by one request. Pay attention that there are reserved registers for every indoor, that will return an error when read/write requested without this setting. If the read request started from one of the readable registers (not reserved) the values of reserved registers will be 0xFFFF in the response. If the read request started from reserved register the response will be illegal data address. In a similar way it works with the write request. If the write request started from one of the writable registers (not reserved) the values that were intended for reserved registers will be ignored. If the write request started from one of the reserved registers the response will be illegal data address.

EXAMPLE

List current ModBus configuration

```
>modbus
ModBus IP      : disabled
server port    : 502
CG4 ignore     : none
OK
```

Enable ignore setting

```
>modbus ignore r
OK
```

List current ModBus configuration

```
>modbus
ModBus IP      : disabled
server port    : 502
CG4 ignore     : regs
OK
```

Disable ignore setting

```
>modbus ignore r
OK
```

Enable ModBus IP

```
>modbus IP enable
OK, Boot Required!
```

Change ModBus IP server port

```
>modbus server port 500
OK, Boot Required!
```

List CoolGate 4 ModBus addresses of existing Indoor Units

```
>modbus cg4
L1.100 --> Hex: 0x1001, Dec: 4097
L1.101 --> Hex: 0x1011, Dec: 4113
OK
```

6.2.2 HVAC Status and Control Commands

[on](#)
[allon](#)
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[lock](#)
[inhibit](#)
[group](#)
[va](#)

on

SYNOPSIS

on [[UID](#)]

DESCRIPTION

Turn on Indoor Unit(s).

EXAMPLE

Turn on Indoor Unit 102 on line L1

```
>on L1.102
```

```
OK
```

Turn on all Indoor Units on Line L2

```
>on L2*
```

```
OK
```

Turn on all Indoor Units

```
>on
```

```
OK
```

allon

SYNOPSIS

allon

DESCRIPTION

Turn on all Indoor Units.

off

SYNOPSIS

off [[UID](#)]

**DESCRIPTION**

Turn off Indoor Unit(s).

EXAMPLE

Turn off Indoor Unit 102 on line L1

```
>off L1.102
```

```
OK
```

Turn off all Indoor Units on line L2

```
>off L2*
```

```
OK
```

Turn off all Indoor Units

```
>off
```

```
OK
```

alloff**SYNOPSIS**

```
alloff
```

DESCRIPTION

Turn off all Indoor Units.

cool**SYNOPSIS**

```
cool [UID]
```

DESCRIPTION

Set Indoor Unit(s) operation mode to cool.

EXAMPLE

Set Indoor Unit 102 on line L1 to cool mode

```
>cool L1.102
```

```
OK
```

Set all Indoor Units on line L2 to cool mode

```
>cool L2*
```

```
OK
```

Set all Indoor Units to cool mode

```
>cool
```

```
OK
```

heat**SYNOPSIS**

```
heat [UID]
```

DESCRIPTION

Set Indoor Unit(s) operation mode to heat.

**EXAMPLE**

Set Indoor Unit 102 on line L1 to heat mode

```
>heat L1.102
```

```
OK
```

Set all Indoor Units on line L2 to heat mode

```
>heat L2*
```

```
OK
```

Set all Indoor Units to heat mode

```
>heat
```

```
OK
```

fan**SYNOPSIS**

```
fan [UID]
```

DESCRIPTION

Set Indoor Unit(s) operation mode to fan.

EXAMPLE

Set Indoor Unit 102 on line L1 to fan mode

```
>fan L1.102
```

```
OK
```

Set all Indoor Units on line L2 to fan mode

```
>fan L2*
```

```
OK
```

Set all Indoor Units to fan mode

```
>fan
```

```
OK
```

dry**SYNOPSIS**

```
dry [UID]
```

DESCRIPTION

Set Indoor Unit(s) operation mode to dry.

EXAMPLE

Set Indoor Unit 102 on line L1 to dry mode

```
>dry L1.102
```

```
OK
```

Set all Indoor Units on line L2 to dry mode

```
>dry L2*
```

```
OK
```

Set all Indoor Units to dry mode

```
>dry
```

```
OK
```

**auto****SYNOPSIS**

```
auto [UID]
```

DESCRIPTION

Set Indoor Unit(s) operation mode to auto.

EXAMPLE

Set Indoor Unit 102 on line L1 to auto mode

```
>auto L1.102
```

```
OK
```

Set all Indoor Units on line L2 to auto mode

```
>auto L2*
```

```
OK
```

Set all Indoor Units to auto mode

```
>auto
```

```
OK
```

temp**SYNOPSIS**

```
temp [UID] [ $\pm$ ] <TEMP>
```

```
temp [UID] <TEMP.d>
```

DESCRIPTION

Change Indoor Unit(s) Set Temperature.

- In form **temp [UID] [\pm] <TEMP>**

<TEMP> parameter must be decimal natural number. Command can work in relative or absolute manner. If plus '+' or minus '-' sign precedes <TEMP> parameter it's value will be added to or substituted from current Set Temperature value. Otherwise Set Temperature will be set to the given <TEMP> value.

- In form **temp [UID] <TEMP.d>**

Set Temperature parameter <TEMP.d> is a fractal number with 0.1 precision. (In this case preceding +/- are not allowed). If HVAC System does not support 0.1 precision for the Set Temperature (see table below), the final value will be nearest supported value.

AC Type	Set Temperature Precision
DK	0.1°C
ME	0.1°C
SM	0.1°C
FJ	0.3°C
SA	0.5°C
TO	0.5°C
PN	0.5°C
MH	0.5°C
LG	0.5°C
HT	1°C
GR	1°C
MD,CG,KT,TR	1°C



TI	1°C
MT	1°C
BSM	1°C

The **deg** setting (see [set](#) command) defines which temperature scale Celsius or Fahrenheit is used for **<TEMP>** and **<TEMP.d>** parameters value.

EXAMPLE

Set Indoor Unit 102 on line L1 Set Temperature to 23°

```
>temp L1.102 23
```

OK

Decrease all Indoor Units on line L2 Set Temperature by 2°

```
>temp L2* -2
```

OK

Set all Indoor Units on line L2 Set Temperature to 24.5°

```
>temp L2* 24.5
```

OK

Set all Indoor Units Set Temperature to 22°

```
>temp 22
```

OK

-----OLD_TEXT-----

SYNOPSIS

```
temp [UID] [±]<TEMP>
```

```
temp [UID] <TEMP.d>
```

DESCRIPTION

Change Indoor Unit(s) Set Temperature.

- In form **temp [UID] [±]<TEMP>**

<TEMP> parameter must be decimal natural number. Command can work in relative or absolute manner. If plus '+' or minus '-' sign precedes **<TEMP>** parameter it's value will be added to or substituted from current Set Temperature value. Otherwise Set Temperature will be set to the given **<TEMP>** value.

- In form **temp [UID] <TEMP.d>**

Set Temperature parameter **<TEMP.d>** is a fractal number with 0.1 precision. (In this case preceding +/- are not allowed). If HVAC System does not support 0.1 precision for the Set Temperature (see table below), the final value will be nearest supported value.

AC Type	Set Temperature Precision
DK	0.1°C
ME	0.1°C
SM	0.1°C
FJ	0.3°C
SA	0.5°C
TO	0.5°C
PN	0.5°C
MH	0.5°C
LG	0.5°C
HT	1°C



GR	1°C
MD,CG,KT,TR	1°C
TI	1°C
MT	1°C

The **deg** setting (see [set](#) command) defines which temperature scale Celsius or Fahrenheit is used for **<TEMP>** and **<TEMP.d>** parameters value.

EXAMPLE

Set Indoor Unit 102 on line L1 Set Temperature to 23°

```
>temp L1.102 23
```

OK

Decrease all Indoor Units on line L2 Set Temperature by 2°

```
>temp L2* -2
```

OK

Set all Indoor Units on line L2 Set Temperature to 24.5°

```
>temp L2* 24.5
```

OK

Set all Indoor Units Set Temperature to 22°

```
>temp 22
```

OK

feed

SYNOPSIS

```
feed [UID] [±]<TEMP>
```

```
feed [UID] <TEMP.d>
```

DESCRIPTION

Provides Ambient Temperature suggestion to Indoor Unit(s) referenced by UID. If **<TEMP>** is zero CoolMaster Product Line will stop suggesting Ambient Temperature. Suggested Ambient Temperature is not persistent and is lost (set to zero) after power reset of CoolMaster Product Line.

- In form **feed [UID] [±]<TEMP>**

<TEMP> parameter must be decimal natural number. Command can work in relative or absolute manner. If plus '+' or minus '-' sign precedes **<TEMP>** parameter it's value will be added to or substituted from the current Ambient Temperature suggested value. Otherwise it will be set to the given **<TEMP>** value.

- In form **feed [UID] <TEMP.d>**

Parameter **<TEMP.d>** is a fractal number with 0.1 precision. (In this case preceding +/- are not allowed).

It is not guaranteed that the Ambient Temperature reported by Indoor Unit will be equal to the suggested Ambient Temperature provided with **feed** command. The **feed** command is supported for the following AC types:

Line Type	AC Model	Firmware Version
ME		
PBM		
SI		0.4.7
EL		



GRNS		
UMM	GS538/9, SMT-HOA	

EXAMPLE

Suggest Ambient Temperature of 23.5° to Indoor Unit L1.102

```
>feed L1.102 23.5
```

```
OK
```

Decrease suggested Ambient Temperature for all Indoor Units on line L2 by 2°

```
>feed L2* -2
```

```
OK
```

fspeed**SYNOPSIS**

```
fspeed [UID] <v,V|l,L|m,M|h,H|t,T|a,A>
```

DESCRIPTION

Set Indoor Unit(s) Fan Speed to:

- v, V - very low or quiet
- l, L - low
- m, M - medium
- h, H - high
- t, T - top or very high
- a, A - auto

Not all Indoor Units support Fan Speed options listed above. Specific Fan Speeds support depend on specific Indoor Unit capabilities. If requested Fan Speed is not supported by Indoor Unit(s) **fspeed** command will have no effect.

EXAMPLE

Set Indoor Unit 102 on line L1 Fan Speed to low

```
>fspeed L1.102 l
```

```
OK
```

Set all Indoor Units on Line L2 Fan Speed to high

```
>fspeed L2* h
```

```
OK
```

Set all Indoor Units Fan Speed to medium

```
>fspeed m
```

```
OK
```

swing**SYNOPSIS**

```
swing [UID] <h|v|a|3|4|6|x>
```

DESCRIPTION

Set Indoor Unit(s) louver position to:

- h - horizontal
- v - vertical
- a - auto (swing)



- 3 - 30°
- 4 - 45°
- 6 - 60°
- - (minus) - stop swing

Not all HVAC Manufacturers and specific Indoor Units support louver position options listed above or have louver position control at all. Louver control is capability of the specific Indoor Unit type. If requested louver position is not supported by Indoor Unit, **swing** command will have no effect or will return an error.

Supported options per HVAC Manufacturer

HVAC Manufacturer	Acronym	h	v	a	3	4	6	-
Daikin	DK							
Mitsubishi Electric	ME							
Sanyo	SA	✓	✓	✓	✓	✓	✓	✓
Toshiba	TO	✓	✓	✓	✓	✓	✓	✓
Panasonic	PN	✓	✓	✓	✓	✓	✓	✓
Hitachi	HT							
LG	LG							
Mitsubishi Heavy Industries	MH							
Gree	GR							
Midea	MD							
Kentatsu	KT							
Trane	TR							
Chigo	CG							
Fujitsu	FJ							
Samsung	SM							
Tadiran Inverter	TI							
Meitav	MT							
Haier	HA							
Bluestar	BSM							

EXAMPLE

Set Indoor Unit 102 on line L1 louver to horizontal position

```
>swing L1.102 h
```

```
OK
```

Set all Indoor Units louver to 30° position

```
>swing 3
```

```
OK
```

filt

SYNOPSIS

```
filt [UID]
```

DESCRIPTION

Reset Filter Sign.

EXAMPLE

Reset Filter Sign on Indoor Unit 102 On line L1

```
>filt L1.102
```

```
OK
```



Reset Filter Sign on all Indoor Units on Line L2

```
>filt L2*
```

```
OK
```

Reset Filter Sign on all Indoor Units

```
>filt
```

```
OK
```

stat

SYNOPSIS

```
stat [UID]
stat2 [UID]
stat3 [UID]
stat4 [UID]
```

DESCRIPTION

Get Indoor Unit(s) status list.

These commands are deprecated and are not recommended for use in CoolMasterNet. They are implemented for backward compatibility only. Detailed description of these commands can be found in the PRM of previous CoolMaster versions.

ls

SYNOPSIS

```
ls [UID]
ls+
```

DESCRIPTION

Get Indoor Unit(s) status list.

In case UID is omitted, `ls` command will list all visible Indoor Units connected to CoolMaster Product Line, while `ls+` command will list all Indoor Units including the invisible (see [props](#) command) ones.

Indoor Unit status line has strict format, so that every status field is printed at fixed position.

- Indoor Unit status line with Celsius temperature scale

```
0123456789012345678901234567890123456
```

```
L2.102 OFF 20C 27C High Cool OK - 0
```

- Indoor Unit status line with Fahrenheit temperature scale

```
012345678901234567890123456789012345678
```

```
L2.102 OFF 120F 127F High Cool OK - 0
```

Field	Position in string		Values
	Celsius	Fahrenheit	
UID	0-5		LN.XYY
On/Off	7-9		ON,OFF
Set Temperature	11-12	11-13	nnC or nnnF
Room Temperature	15-16	16-18	nnC or nnnF
Fan Speed	19-22	21-24	VLow, Low, Med, High, Top, Auto, ...
Operation Mode	24-27	26-29	Cool, Heat, Fan, Dry, Auto, ...



Indoor Failure Code	29-32	31-34	OK - no failure, else Indoor Failure Code
Filter Sign	34	36	- or # (Filter Sign)
Demand	36	38	0 or 1

EXAMPLE

```
>ls L2
L2.101 ON 25C 27C Low Cool OK - 1
L2.102 OFF 20C 27C High Cool OK - 0
OK
>ls L2.101
L2.101 ON 25C 27C Low Cool OK - 1
OK
>ls
L1.101 ON 25C 24C Low Cool OK - 1
L1.102 ON 22C 23C Med Cool OK - 0
L2.101 ON 25C 27C Low Cool OK - 1
L2.102 OFF 20C 27C High Cool OK - 0
OK
```

ls2**SYNOPSIS**

```
ls2 [UID]
```

DESCRIPTION

Same as ls, but with decimal precision in temperatures.

Get Indoor Unit(s) status list. If UID is omitted all Indoor Units connected to CoolMaster Product Line will be listed. Indoor Unit status line has strict format, so that every status field is printed in fixed position.

- Indoor Unit status line with Celsius temperature scale

```
01234567890123456789012345678901234567890
L1.102 ON 16.9C 27.0C High Cool OK - 0
```

- Indoor Unit status line with Fahrenheit temperature scale

```
0123456789012345678901234567890123456789012
L1.102 ON 062.4F 080.6F High Cool OK - 0
```

Field	Position in string		Values
	Celsius	Fahrenheit	
UID	0-5		LN.XYY
On/Off	7-9		ON,OFF
Set Temperature	11-14	11-15	nn.nC or nnn.nF
Room Temperature	17-20	18-22	nn.nC or nnn.nF
Fan Speed	23-26	25-28	VLow, Low, Med, High, Top, Auto
Operation Mode	28-31	30-33	Cool, Heat, Fan, Dry, Auto
Indoor Failure Code	33-36	35-38	OK - no failure, else Indoor Failure Code
Filter Sign	38	40	- or # (Filter Sign)
Demand	40	42	0 or 1

EXAMPLE



```

>ls L2
L2.101 ON 25.7C 27.2C Low Cool OK - 1
L2.102 OFF 20.0C 27.3C High Cool OK - 0
OK
>ls L2.101
L2.101 ON 25.7C 27.2C Low Cool OK - 1
OK
>ls
L1.101 ON 25.4C 24.1C Low Cool OK - 1
L1.102 ON 22.1C 23.4C Med Cool OK - 0
L2.101 ON 25.7C 27.2C Low Cool OK - 1
L2.102 OFF 20.0C 27.3C High Cool OK - 0
OK

```

query

SYNOPSIS

```
query <UID_STRICT> <o|m|f|t|h|e|a|s>
```

DESCRIPTION

Query one of the operation conditions of given Indoor Unit. <UID_STRICT> parameter must define single Indoor Unit in form Ln.XYY or XYY. Resulting value is printed as alpha-numeric value according to the table below.

Query	Operation Condition	Value
o	On/Off	0 - Off, 1 - On
m	Operation Mode	0 - Cool 1 - Heat 2 - Auto 3 - Dry 4 - Haux 5 - Fan
f	Fan Speed	0 - Low 1 - Medium 2 - High 3 - Auto 4 - Top
t	Set Temperature	Natural
e	Failure Code	0 - No failure, otherwise failure code same as in ls command
a	Ambient Temperature	Natural
h	Set Temperature	0.01° Precision
s	Louver Position	0 - No Louver Control a - auto (swing) h - horizontal 3 - 30° 4 - 45° 6 - 60° v - vertical x - stop (swing)

EXAMPLE

```
>query L1.100 o
```



```

1
OK
>query L1.100 m
0
OK
>query L1.100 t
25
OK
>query L1.100 a
27
OK
>query L1.100 f
2
OK
>query L1.100 e
U4
OK
>query L1.100 e
0
OK
>query L1.100 h
20.50
OK

```

wh**SYNOPSIS**

```

wh <UID_STRICT> <h|e|w|a|t<+|-|temp>|b<+|->>
wh <UID_STRICT>

```

DESCRIPTION

Control Water Heater Unit. When letter is omitted special water heater status is displayed.

Letter	Operation	Compatibility	
		ME	P1P2 (Altherma)
h	Heat Mode	✓	
e	Eco Mode	✓	
w	Hot Mode	✓	
a	Anti-freeze Mode	✓	
t	Tank (+=on, -=off, temp=set point)		✓
b	Booster (+=on, -=off)		✓
"no letter"	Print status		✓

ON/OFF control of the Water Heater Unit is performed with regular [on](#) and [off](#) commands.

EXAMPLE

Set Hot Mode on Water Heater Unit 101 on Line L1

```

>wh L1.101 w
OK

```



Set Altherma Unit 000 on Line L4 Tank Set Temperature to 40°

```
>wh L4.000 t40
```

```
OK
```

Turn on Tank of Altherma Unit 000 on Line L4

```
>wh L4.000 t+
```

```
OK
```

Turn on Tank Booster of Altherma Unit 000 on Line L4

```
>wh L4.000 b+
```

```
OK
```

Print Tank status of Altherma Unit 000 on Line L4

```
>wh L4.000
```

```
L4.000 ON 40C 35C +
```

```
OK
```

main

SYNOPSIS

```
main [Ln]
```

```
main <UID_STRICT> <0|1>
```

DESCRIPTION

Change or query Daikin Indoor Units main RC setting. Without parameters **main** command will list main RC setting of all Daikin Indoor Units on all lines. Line number **Ln** can be indicated to list Daikin Indoor Units on specific line.

Main RC setting	Description
+	Indoor Unit is main RC
-	Indoor Unit is not main RC
?	No main RC in the system

Notes:

To set Indoor Unit as main RC the previous main RC have to be unset first.

EXAMPLE

List main RC setting of Indoor Units on line L2

```
>main L2
```

```
L2.200 -
```

```
L2.201 -
```

```
L2.202 -
```

```
L2.203 -
```

```
L2.204 -
```

```
L2.205 -
```

```
L2.206 +
```

```
OK
```

List main RC setting of all Indoor Units

```
>main
```

```
L1.300 -
```

```
L1.301 +
```

```
L1.302 -
```

```
L2.100 ?
```

```
L2.101 ?
```



```
L2.102 ?
```

```
L2.103 ?
```

```
OK
```

```
Unset main RC: Indoor Unit 206 on line L2
```

```
>main L2.206 0
```

```
OK
```

```
Set new main RC: Indoor Unit 201 on line L2
```

```
>main L2.201 1
```

```
OK
```

vam

SYNOPSIS

```
vam <UID_STRICT> <a|b|x|n|l|L|h|H|s|t|A|+|->
```

```
vam
```

```
vam <UID_STRICT>
```

DESCRIPTION

Control Ventilation Unit.

- `vam <UID_STRICT>` - get Ventilation Unit status.
- `vam` - get all Ventilation Units status.

Letter	Operation	Compatibility			
		DK	ME	LG	SM
a	Auto Mode	✓	✓	✓	✓
b	Bypass (Bps) Mode	✓	✓		✓
x	Heat Exchange (HExc) Mode	✓	✓	✓	✓
n	Normal Mode			✓	
S	Sleep Mode				✓
l	Low Fan	✓	✓	✓	✓
L	Low Fan with Fresh-Up	✓			
h	High Fan	✓	✓	✓	✓
H	High Fan with Fresh-Up	✓			
s	Super High Fan			✓	✓
t	Top Fan		✓		
A	Auto Fan		✓	✓	
+	Turn on ventilation unit*				✓
-	Turn off ventilation unit*				✓

ON/OFF control of the Ventilation Unit is performed with regular [on](#) and [off](#) commands.

There are, though, dual units, that consist of Air Condition Unit and Ventilation unit. In this case [on](#) and [off](#) commands will control the Air Condition Unit, while `vam <UID_STRICT> +/vam <UID_STRICT> -` will control the Ventilation Unit.

EXAMPLE

Set Heat Exchange mode on Ventilation Unit 101 on Line L1

```
>vam L1.101 x
```

```
OK
```

**lock****SYNOPSIS**

```
lock [UID_STRICT]
lock [UID] <-|+>[o|m|t|n]
```

DESCRIPTION

Most of the HVAC systems have a lock (inhibit) functionality to prevent user from changing Indoor Unit status via wired or remote local controller. Same functionality is provided by CoolMaster Product Line with **lock** command.

- **lock** <UID_STRICT> - Query locks for all or specific Indoor Unit. <UID_STRICT> defines specific Indoor Unit in form Ln.XYY

Lock options	Operation
+	Full Lock: On/Off, Mode, Set Temperature
-	Full Unlock: On/Off, Mode, Set Temperature
+o	Lock On/Off
-o	Unlock On/Off
+m	Lock Mode
-m	Unlock Mode
+t	Lock Set Temperature
-t	Unlock Set Temperature
+n	Lock On
-n	Unlock On

Different Lock options can be combined in one command (see examples below)

COMPATIBILITY

AC Type	Lock Options				
	Full Lock	On/Off	Mode	SetPoint	On
DK	✓	✓	✓	✓	✓
SA		✓	✓	✓	
ME		✓	✓	✓	
LG	✓		✓	✓	
SM	✓		✓		
TO		✓	✓	✓	
MH	✓	✓			
HT	✓		✓		
SI	✓	✓	✓	✓	
FJ		✓	✓	✓	
MD,TR,KT,CG	✓		✓		
HA		✓	✓	✓	
GMV5	✓	✓	✓	✓	
BS		✓	✓	✓	

EXAMPLE

Query locks for Indoor Unit L1.103 (SA/TO/PN)

```
>lock L1.103
```

```
-o -m -t
```

```
OK
```




Query locks for Indoor Unit L2.101 (MD/KT/TR/CG/HT)

```
>lock L2.101
```

```
+
```

```
OK
```

Query locks for Indoor Unit L1.100 (DK)

```
>lock L1.100
```

```
-o -m -t +n
```

```
OK
```

Lock Mode change and Unlock Set Point change

```
>lock L1.102 +m-t
```

```
OK
```

Full Lock

```
>lock L5.002 +
```

```
OK
```

inhibit

SYNOPSIS

```
inhibit [UID] <0|1>
```

DESCRIPTION

CoolMaster Product Line will force Indoor Unit(s) to OFF state, when **inhibit** is set to 1(enabled). Setting **inhibit** back to 0(disabled) restores Indoor Unit(s) ON/OFF state. Indoor Unit will be turned ON if it was ON before the inhibit.

EXAMPLE

Inhibit Indoor Unit 102 on line L1. Unit will be forced OFF.

```
>inhibit L1.102 1
```

```
OK
```

Remove Inhibit from Indoor Unit 102 on line L1

```
>inhibit L1.102 0
```

```
OK
```

Inhibit all Indoor Units

```
>inhibit 1
```

```
OK
```

Remove Inhibit from all Indoor Units

```
>inhibit 0
```

```
OK
```

group

SYNOPSIS

```
group
group <UID1_STRICT> <UID2_STRICT>
group delall
group -G
group ram R
```

DESCRIPTION



Control group operation in CoolMaster Product Line. Grouping of two Indoor Units means that second Indoor Unit will follow ON/OFF, Mode, Fan Speed, Set Temperature and Swing settings of the first Indoor Unit.

- In format without parameters **group** will list existing groups
- **group delall** - delete all groups
- **group -G** - delete group number G (group numbers displayed in the list of existing groups)
- **group <UID1_STRICT> <UID2_STRICT>** - create new group, where UID2 will follow UID1
- **group ram R** - create group Data Base for R groups. The operation will take effect after reboot. Use this operation only if default group Data Base is too small.

EXAMPLE

Group Indoor unit L5.001 with L5.002

```
>group L5.001 L5.002
```

```
OK
```

List existing groups

```
>group
```

```
G000: L5.001 --> L5.002
```

```
G001: L5.001 --> L5.003
```

```
OK
```

Delete group number 0

```
>group -0
```

```
OK
```

Delete all groups

```
>group delall
```

```
OK
```

Create group Data Base for 50 groups

```
>group ram 50
```

```
OK, Boot Required!
```

va

SYNOPSIS

```
va
```

```
va auto
```

```
va delall
```

```
va ram R
```

```
va - <UID_STRICT | VA>
```

```
va + <UID_STRICT> <VA>
```

DESCRIPTION

In order to simplify translation of the [UID](#) into Modbus object address, CoolMaster Product Line uses VA (Virtual Address), associated with [UID](#). Each [UID](#) can have none, one or a number of associated VA's, but each VA can be associated only with one [UID](#). VA's are plain numbers starting from 001 (decimal). Virtual Address concept is applicable to [CoolGate 5](#) and [ModBus IP](#).

- In format without parameters **va** command will list all VA associations and their ModBus addresses in hexadecimal and decimal format.
- **va auto** - CoolMaster Product Line will automatically associate VA's with existing (visible with [ls](#) command) [UID](#)'s. This will delete previous associations
- **va delall** - delete all VA associations
- **va ram R** - create VA Data Base for R associations. The operation will take effect after reboot. Use this operation only if default VA Data Base is too small.
- **va - <UID_STRICT | VA>** - delete all VA associations with specific Indoor Unit or delete specific VA association



- `va + <UID STRICT> <VA>` - add new VA association

EXAMPLE

Auto associate all existing Indoor Units

```
>va auto
```

```
OK
```

Associate VA 007 with Indoor Unit 100 on line L1

```
>va + L1.100 7
```

```
OK
```

List all VA associations

```
>va
```

```
L1.100 --> 001 [Hex: 0x0011 | Dec: 0017]
```

```
      +--> 007 [Hex: 0x0071 | Dec: 0113]
```

```
L1.101 --> 002 [Hex: 0x0021 | Dec: 0033]
```

```
L2.101 --> 003 [Hex: 0x0031 | Dec: 0049]
```

```
L2.102 --> 004 [Hex: 0x0041 | Dec: 0065]
```

```
L2.103 --> 005 [Hex: 0x0051 | Dec: 0081]
```

```
L2.104 --> 006 [Hex: 0x0061 | Dec: 0097]
```

```
OK
```

Delete all VA associations of Indoor Unit 100 on line L1

```
>va - L1.100
```

```
OK
```

Delete VA association number 4

```
>va - 4
```

```
OK
```

Delete all VA associations

```
>va delall
```

```
OK
```

Create VA Data Base for 200 associations

```
>va ram 200
```

```
OK, Boot Required!
```