English

Interface protocol

Sound Meter PCE-428 / PCE-430 / PCE-432

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Contents

1 Instruction Format

In this section, "□□□" on behalf of the 3 characters of the instruction, "p1, p2 ....." on behalf of the parameter "d1, d2 ..." means the data, "_" means a space.

(1) Separate The Parameters By Space For Multiple Parameters In One Instruction:

□□□	Instruction without parameters
□□□p1	Instruction with 1 parameter
□□□p1_p2	Instruction with 2 parameters
□□□?	Instruction with query parameter
□□□p1_?	Instruction with 1 parameter and a query parameter
□□□p1_ p2_?	Instruction with 2 parameters and a query parameter

The parameters can be a wide range, for example from 1 to 255. These parameters are sending by the format of ASCII. Therefore, you may need to send 1~3 bytes.

□□□93	Parameter is 93
□□□124	Parameter is 124

Note that both of 93 and 124 are single parameter. So the individual numbers don't need to be separated by spaces.

□□□1_64	2 individual parameters, 1 and 64

Note that 1 and 64 are two parameters in one instruction. So those parameters need to be separated by space.

The parameter is possible to be decimal or integer type. However, if the actual value is integer type, decimal point and decimal bits can be omitted.

(2) Separate The Data By Comma For Multiple Data In One Response

d1,d2,d3	Return 3 data

Response block, the data bits actually returned is less than its maximum possible number of digits, leading zeros. For example, return 2 data with the maximum possible value 255 (3 digits), and the actually data is 76 and 9, the response is:

076,009	Return data 76 and 9

If the returned data contains date and time, use the slash "/" to separate data and use the colon ":" to separate the time:
2011/08/05, 12:13:55

2 Instruction Description

Note in This Section:

- In the following description, the value, range and default value of parameter are show as ASCII code.
  - The default value means the sound level meter just delivery to user or restore to the factory settings.

3 Instructions

3.1 IDXp1: Setup ID

ID of sound level meters in one network must be different. Otherwise, there will be a communication error.

☆**Note:** When the IDX instruction is correctly received by sound level meter, ACK signal will be returned with the new ID.

	Instruction			Parameters
Explanation	IDX			p1: ID number; Range: 1~255; Default: 1
ASCII	I	D	X	1
Hex	49H	44H	58H	31H
Byte	1	1	1	1~3
Return	ACK / NAK			

Example 1: set the ID as 3.

02 01 43 **49 44 58 33** 03 25 0D 0A

Return: ACK. Note where ID has been changed to 3 (03H).

02 03 06 03 040D 0A

Example 2: set the ID as 255.

02 01 43 **49 44 58 32 35 35** 03 24 0D 0A

Return: ACK. Note where ID has been changed to 255 (FFH).

02 FF 06 03 F8 0D 0A

3.2 IDX?: Query ID

	Instruction			Parameters
Explanation	IDX			Query parameter: ?
ASCII	I	D	X	?
Hex	49H	44H	58H	3FH
Byte	1	1	1	1
Return	Return the current ID number			

Example: query ID.

02 01 43 **49 44 58 3F** 03 29 0D 0A

Return: the current ID 001.

02 01 41 **30 30 31** 03 70 0D 0A

3.3 BRTp1: Set the RS-232 Baud Rate

☆**Note:** When the BRT instruction is correctly received by the sound level meter, it will return the ACK by previous baud rate, and then update the baud rate.

	Instruction			Parameters
Explanation	BRT			p1: RS-232 baud rate; 2=4800bps; 3=9600bps; 4=19200bps; Default: 3
ASCII	B	R	T	3
Hex	42H	52H	54H	33H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set the baud rate to 9600bps.

02 01 43 **42 52 54 33** 03 34 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.4 BRT?: Query The RS-232 Baud Rate Setting

	Instruction			Parameters
Explanation	BRT			Query parameter: ?
ASCII	B	R	T	?
Hex	42H	52H	54H	3FH
Byte	1	1	1	1
Return	Return the current baud rate			

Example: query the current baud rate.

02 01 43 **42 52 54 3F** 03 38 0D 0A Return:

the current baud rate is 9600bps.

02 01 41 **33** 03 72 0D 0A

3.5 XONp1: Set the Flow Control

	Instruction			Parameters
Explanation	XON			p1: Flow control mode; 0=Hardware flow control; 1=Software flow control; Default: 1
ASCII	X	O	N	1
Hex	58H	4FH	4EH	31H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set to software flow control mode.

02 01 43 **58 4F 4E 31** 03 2B 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.6 XON?: Query Flow Control Setting

	Instruction			Parameters
Explanation	XON			Query parameter: ?
ASCII	X	O	N	?
Hex	58H	4FH	4EH	3FH
Byte	1	1	1	1
Return	Return flow control mode			

Example: query flow control mode.

02 01 43 **58 4F 4E 3F** 03 25 0D 0A

Return: the current flow control mode is software flow control.

02 01 41 **31** 03 70 0D 0A

3.7 RETp1: Set Response Mode

Response means the ACK / NAK signal returned from the sound level meter (HIS and OCS instruction returns MicroSD card state or NAK).User can enable or disable such a response.

☆**Note:** RET instruction itself is not affected by response mode. When the sound level meter receive the RET instruction, it will return ACK/NAK whether the current state is enabled or disabled. RET? Query command is also not subject to the influence of response mode.

	Instruction	Parameters
Explanation	RET	p1: Response mode; 0=Disabled; 1=Enabled;

				Default: 1
ASCII	R	E	T	1
Hex	52H	45H	54H	31H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set to enable response.

02 01 43 **52 45 54 31** 03 31 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.8 RET?: Query Response Mode Setting

	Instruction			Parameters
Explanation	RET			Query parameter: ?
ASCII	R	E	T	?
Hex	52H	45H	54H	3FH
Byte	1	1	1	1
Return	Return response mode			

Example: query response mode.

02 01 43 **52 45 54 3F** 03 3F 0D 0A

Return: the current response mode is to enable the response.

02 01 41 **31** 03 70 0D 0A

3.9 MEMp1: Set the Measurement Mode

When MEM instruction is correctly received by the sound level meter, it will switch to the main screen of the octave mode or the main screen of level meter mode according to the corresponding parameter in instruction.

☆**Note** The 1/3 octave band is optional function.

	Instruction			Parameters
Explanation	MEM			p1: Measurement mode; 0=1/1Octave; 1=Level meter mode; 2=1/3 Octave (Optional); Default: 1
ASCII	M	E	M	1
Hex	4DH	45H	4DH	31H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set the sound level meter mode.

02 01 43 **4D 45 4D 31** 03 37 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.10 MEM?: Query Measurement Mode Setting

	Instruction			Parameters
Explanation	MEM			Query parameter: ?
ASCII	M	E	M	?
Hex	4DH	45H	4DH	3FH
Byte	1	1	1	1
Return	Return the measurement mode			

Example: query the measurement mode.

02 01 43 **4D 45 4D 3F** 03 39 0D 0A

Returns: the current measurement mode is level meter mode.

02 01 41 **31** 03 70 0D 0A

3.11 CALp1: Set Calibration Level and Calibrate by Measurement

☆**Note:** When CAL instruction is correctly received by the sound level meter, two ACK will be returned at the beginning and the end of the calibration (several seconds will be spent by the calibration). In the calibration history, ending with symbol **M** indicate the record was calibrate by the method of by Measurement.

	Instruction			Parameters
Explanation	CAL			p1: Calibration level; Range: 0~199.9; Default: 93.8
ASCII	C	A	L	93.8
Hex	43H	41H	4CH	39H, 33H, 2EH, 38H
Byte	1	1	1	1~5
Return	ACK / NAK			

Example 1: set the calibration level as 94dB and calibrate by measurement.

02 01 43 **43 41 4C 39 34** 03 00 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

Return again after calibration finished: ACK

02 01 06 03 06 0D 0A

Example 2: set the calibration level as 113.8dB and calibrate by measurement.

02 01 43 **43 41 4C 31 31 33 2E 38** 03 28 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

Return again after calibration finished: ACK

02 01 06 03 06 0D 0A

3.12 CAL?: Query Calibration Level and Calibration Factor

	Instruction			Parameters
Explanation	MEM			Query parameter: ?
ASCII	C	A	L	?
Hex	43H	41H	4CH	3FH
Byte	1	1	1	1
Return	Return the value of the calibration level and calibration factor			

Example: query the calibration level and calibration factor.

02 01 43 **43 41 4C 3F** 03 32 0D 0A

Return: the current calibration level is 094.0dB, the calibration factor is 000.00dB.

02 01 41 **30 39 34 2E 30 2C 2B 30 30 30 2E 30 30** 03 7B 0D 0A

3.13 CAFp1: Calibrate by Calibration Factor

This instruction can modify the calibration factor. In the calibration history, code “F” at the end of each line means by calibration factor.

	Instruction			Parameters
Explanation	CAF			p1: Calibration factor; Range: -199.99~+199.99 (“+” sign can be omitted); Default: 0
ASCII	C	A	F	0
Hex	43H	41H	46H	30H
Byte	1	1	1	1~7
Return	ACK / NAK			

Example: set the calibration factor value as 0.74dB (“+” sign is omitted).

02 01 43 **43 41 46 30 2E 37 34** 03 1A 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.14 CAF?: Query Calibration History

Query the most recent 4 group history of calibration.

	Instruction			Parameters
Explanation	CAF			Query parameter: ?
ASCII	C	A	F	?
Hex	43H	41H	46H	3FH
Byte	1	1	1	1
Return	Returns the most recent 4 group history of calibration. Format “Year/Month/day, hour:minute:second, calibration factor, code”. Code: M=By Measurement, F=By Calibration Factor.			

Example: query the calibration history.

02 01 43 **43 41 46 3F** 03 38 0D 0A

Return: the data returned by this instruction use a slash “/” split date, use a colon “,” split time. Calibration history is 2011/08/04, 17:03:28, +001.29, F, 2011/08/04, 17:03:02, +001.25, F, 2011/08/04, 17:02:20, +000.71, F, 2011/08/04, 17:02:00, +001.27, M.

02 01 41 **32 30 31 31 2F 30 38 2F 30 34 2C 31 37 3A 30 33 3A 32 38 2C 2B 30 30 31 2E 32 39 2C 46 2C 32 30 31 31 2F 30 38 2F 30 34 2C 31 37 3A 30 33 3A 30 32 2C 2B 30 30 31 2E 32 35 2C 46 2C 32 30 31 31 2F 30 38 2F 30 34 2C 31 37 3A 30 32 3A 32 30 2C 2B 30 30 30 2E 37 31 2C 46 2C 32 30 31 31 2F 30 38 2F 30 34 2C 31 37 3A 30 32 3A 30 30 2C 2B 30 30 31 2E 32 37 2C 4D** 03 62 0D 0A

3.15 BSEp1_p2_p3_p4_p5_p6_p7: Measurement Setup

Set the delay, integral period, repeat, and logger setup.

	Instruction			P1	P2	P3	P4	P5	P6	P7
Explanation	BSE			p1: delay; 1~60=1~60s; 61=Sync. 1m; 62=Sync. 15m; 63=Sync. 30m; 64=Sync. 1h; Default: 1	p2: integral period; 0=Inf; 1~59=1~59s; 60~118=1~59m; 119~142=1h~24h; Default: 0	p3: repeat; 0=Inf; 1~9999=1~9999 times; Default: 0	p4: SWN logger; 0=disable; 1=enable; Default: 0	p5:SWN logger ;step 0=0.1s; 1=0.2s; 2=0.5s; 3~61=1~59s; 62~120=1~59m; 121~144=1h~24h; Default: 3	p6:CSD logger; 0=disable; 1=enable; Default: 0	p7:CSD logger step; 0~58=1~59s; 59~117=1~59m; 118~141=1~24h; Default: 59
ASCII	B	S	E	1	0	0	0	3	0	59

Hex	42H	53H	45H	31H	30H	30H	30H	33H	30H	35H, 39H
Byte	1	1	1	1~2	1~3	1~4	1	1~3	1	1~2
Return	Returns: 0=setting succeed, MicroSD card is OK; 1=setting succeed, but the MicroSD card is abnormal; 2=setting succeed, but no MicroSD card detected.									

Example: set delay as 2s, integral period as 5m, repeat as infinite, SWN logger enable, SWN logger step as 0.2s, CSD logger enable, CSD logger step as 2s.

02 01 43 **42 53 45 32 20 36 34 20 30 20 31 20 31 20 31 20 31** 03 17 0D 0A

Returns: setting succeeds, MicroSD card is OK.

02 01 41 **30** 03 71 0D 0A

3.16 BSE?: Query Measurement Setup

	Instruction			Parameters
Explanation	BSE			Query parameter: ?
ASCII	B	S	E	?
Hex	42H	53H	45H	3FH
Byte	1	1	1	1
Return	Return parameter of measurement setup: delay, integral period, repeat, SWN logger, SWN logger step, CSD Logger, CSD Logger step.			

Example: query the measurement setup.

02 01 43 **42 53 45 3F** 03 28 0D 0A

Returns: the current measurement setup: delay=2s, integral period=5min, repeat=infinite, SWN logger=enable, SWN logger step= 0.2s, CSD logger=enable, CSD logger step=2s.

02 01 41 **30 32 2C 30 36 34 2C 30 30 30 30 2C 31 2C 30 30 31 2C 31 2C 30 30 31** 03 71 0D 0A

3.17 RNS?: Query Measurement Range

	Instruction			Parameters
Explanation	RNG			Query parameter: ?
ASCII	R	N	S	?
Hex	52H	4EH	53H	3FH
Byte	1	1	1	1
Return	Return measurement range			

Example: query measurement range.

02 01 43 **52 4E 53 3F** 03 33 0D 0A

Return: linearity, dynamic and peak C range is 22.8-133.8, 12.8-133.8, 44.8-136.8.

02 01 41 **30 32 32 2E 38 7E 31 33 33 2E 38 2C 30 31 32 2E 38 7E 31 33 33 2E 38 2C 30 34 34 2E 38 7E 31 33 36 2E 38** 03 38 0D 0A

3.18 ICPp1: Set ICCP Power

	Instruction			Parameters
Explanation	ICP			p1: ICCP power state; 0=Enable; 1=Disable; Default: 0
ASCII	I	C	P	0
Hex	49H	43H	50H	30H
Byte	1	1	1	1
Return	ACK / NAK			

Example: enable ICCP power:

02 01 43 **49 43 50 30** 03 29 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.19 ICP?: Query ICCP Power State

	Instruction			Parameters
Explanation	ICP			Query parameter: ?
ASCII	I	C	P	?
Hex	49H	43H	50H	3FH
Byte	1	1	1	1
Return	Return ICCP power state			

Example: query ICCP power state

02 01 43 **49 43 50 3F** 03 26 0D 0A

Return: ICCP power is enable

02 01 41 **30** 03 71 0D 0A

3.20 PR1p1_p2_p3_p4：Set Profile1

	Instruction			P1	P2	P3	P4
Explanation	PR1			p1: Filter; 0=A; 1=B; 2=C;	p2: Detector; 0=Fast; 1=Slow; 2=Imp;	p3: Integration mode; 0=SPL; 1=PEAK;	p4: SWN Logger; 0=LEQ; 1=PEAK;
				3=Z; Default: 0	Default: 0	2=LEQ; 3=MAX; 4=MIN; Default: 0	2=MAX; 3=MIN; Default: 0
ASCII	P	R	1	0	0	0	0
Hex	50H	52H	31H	30H	30H	30H	30H
Byte	1	1	1	1	1	1	1
Return	ACK / NAK						

Example: set Profile1 as A, Fast, SPL and save LEQ.

02 01 43 **50 52 31 30 20 30 20 30 20 30** 03 50 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.21 PR1?: Query Profile1 Setting

	Instruction			Parameters
Explanation	PR1			Query parameter: ?
ASCII	P	R	1	?
Hex	50H	52H	31H	3FH
Byte	1	1	1	1
Return	Return Profile1 setting			

Example: query Profile1 setting.

02 01 43 **50 52 31 3F** 03 4F 0D 0A

Return: current Profile1 setting is A, Fast, SPL, save LEQ.

02 01 41 **30 2C 30 2C 30 2C 30** 03 6D 0D 0A

3.22 PR2p1_p2_p3_p4: Set Profile2

Except the instruction is “PR2” and the default filter is 2 (C-weighting), all others are same to the “PR1”.

3.23 PR2?: Query Profile2 Setting

Except the instruction is “PR2”, all others are same to the “PR1?”.

3.24 PR3p1_p2_p3_p4: Set Profile3

Except the instruction is “PR3” and the default filter is 3 (Z-weighting), all others are same to the “PR1”.

3.25 PR3?: Query Profile3 Setting

Except the instruction is “PR3”, all others are same to the “PR1?”.

3.26 ALMp1: Set Alarm Threshold

	Instruction			Parameters
Explanation	ALM			p1: Alarm threshold; Range: 20~200; Default: 100
ASCII	A	L	M	100
Hex	41H	4CH	4DH	31H, 30H, 30H
Byte	1	1	1	1~3
Return	ACK / NAK			

Example: setting alarm threshold as 100dB.

02 01 43 **41 4C 4D 31 30 30** 03 32 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.27 ALM?: Query the Alarm Threshold Setting

	Instruction			Parameters
Explanation	ALM			Query parameter: ?
ASCII	A	L	M	?
Hex	41H	4CH	4DH	3FH
Byte	1	1	1	1
Return	Return alarm threshold			

Example: query alarm threshold.

02 01 43 **41 4C 4D 3F** 03 3C 0D 0A

Return: the current alarm threshold is 100dB.

02 01 41 **31 30 30** 03 70 0D 0A

3.28 ETFp1_p2_p3_p4_p5: Set Extended Function

	Instruction			P1	P2	P3	P4	P5
Explanation	ETF			p1: 3Profile Screen; 0=Disable; 1=Enable	p2: Statistical Screen; 0=Disable; 1=Enable	p3: Time History Screen; 0=Disable; 1=Enable	p4: Custom Screen; 0=Disable; 1=Enable	p5: GPS Screen; 0=Disable; 1=Enable
ASCII	E	T	F	1	1	1	1	1
Hex	45H	54H	46H	31H	31H	31H	31H	31H

Byte	1	1	1	1	1	1	1	1
Return	ACK / NAK							

Example: enable 3Profile, statistical, time history, custom, GPS.

02 01 43 **45 54 46 31 20 31 20 31 20 31 20 31** 03 25 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.29 ETF?: Query Extended Function Setting

	Instruction			Parameters
Explanation	ETF			Query parameter: ?
ASCII	E	T	F	?
Hex	45H	54H	46H	3FH
Byte	1	1	1	1
Return	Return the extended function setting			

Example: query the extended function setting

02 01 43 **45 54 46 3F** 03 2B 0D 0A

Return: 3Profile, statistical, time history, custom and GPS are all enable

02 01 41 **31 2C 31 2C 31 2C 31 2C 31** 03 70 0D 0A

3.30 STSp1_p2_p3……p11_p12: Set Statistical

	Instruction			P1	P2	P3~P12
Explanation	STS			p1: Filter 0=A; 1=B; 2=C; 3=Z; Default: 0	p2: Detector 0=F; 1=S; 2=I; Default: 0	p3~p12: statistical percentage; Range: 1~99; Default: 10, 20, 30, 40, 50, 60, 70, 80, 90, 99
ASCII	S	T	S	0	0	10_20_30_40_50_ 60_70_80_90_99
Hex	53H	54H	53H	30H	30H	31H, 30H, 20H, 32H, 30H, 20H, 33H, 30H, 20H, 34H, 30H, 20H, 35H, 30H, 20H, 35H, 30H, 20H, 36H, 30H, 20H, 37H, 30H, 20H, 38H, 30H, 20H, 39H, 30H, 20H, 39H, 39H
Byte	1	1	1	1	1	10~20+9 (spaces)
Return	ACK / NAK					

Example: set filter as B, detector as I, percentage as 10, 20, 30, 40, 50, 60, 70, 80, 90 and 99.

02 01 43 **53 54 53 31 20 32 20 31 30 20 32 30 20 33 30 20 34 30 20 35 30 20 36 30 20 37 30 20 38 30 20 39 30 20 39 39** 03 35 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.31 STS?: Query Statistical

	Instruction			Parameters
Explanation	STS			Query parameter: ?
ASCII	S	T	S	?
Hex	53H	54H	53H	3FH
Byte	1	1	1	1
Return	Return filter, detector and 10 percentage of statistical			

Example: query statistical

02 01 43 **53 54 53 3F** 03 28 0D 0A

Return: filter=B, detector=I, percentage=10, 20, 30, 40, 50, 60, 70, 80, 90, 99.

02 01 41 **31 2C 32 2C 31 30 2C 32 30 2C 33 30 2C 34 30 2C 35 30 2C 36 30 2C 37 30 2C 38 30 2C 39 30 2C 39 39** 03 6F 0D 0A

3.32 HISp1_p2: Set Time History

	Instruction			Parameters 1	Parameters 2
Explanation	HIS			p1: Profile; 0=Profile1; 1=Profile2; 2=Profile3; Default: 1	p2: Duration; 0=1min; 1=2min; 2=10min; Default: 1
ASCII	H	I	S	1	1
Hex	48H	49H	53H	31H	31H
Byte	1	1	1	1	1
Return	ACK / NAK				

Example: set Profile2 as data sources and duration as 2min.

02 01 43 **48 49 53 31 20 31** 03 31 0D 0A

Return: ACK.

02 01 06 03 06 0D 0A

3.33 HIS?: Query Time History Setting

	Instruction			Parameters
Explanation	HIS			Query parameter: ?
ASCII	H	I	S	?
Hex	48H	49H	53H	3FH
Byte	1	1	1	1
Return	Return time history setting			

Example: query time history setting.

02 01 43 **48 49 53 3F** 03 2E 0D 0A

Returns: the current data sources=Profile2, duration=2min.

02 01 41 **31 2C 31** 03 6D 0D 0A

3.34 OCSp1_p2······p13_p14: Set Octave Setting

	Instruction			Parameter 1	Parameter 2~41
Explanation	OCS			p1: Filter 0=Z; 1=C; 2=B; 3=A; Default: 0	p2~p41: The threshold of LeqA, LeqB, LeqC, LeqZ, 6.3Hz~20kHz; Range: 0-199.9; Default: 31.5Hz=79, 63Hz=63, 125Hz=52, 250Hz=44, others=38
ASCII	O	C	S	1	38_38_38_38_38_38_38_38_38_38_38_79_38_38_63_38_38_52_38_38_44_38_38_38_38_38_38_38_38_38_38_38_38_38_38_38_38_38_38
Hex	4FH	43H	53H	31H	33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 37H, 39H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 36H, 33H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 35H, 32H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 34H, 34H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H,
					38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H, 20H, 33H, 38H
Byte	1	1	1	1	80+39 (space)
Return	ACK / NAK				

Example: set Filter as C-weighting; all the threshold values are 38.

02 01 43 **4F 43 53 31 20 33 38** 03 00 0D 0A

Return: ACK

02 01 06 **03** 06 0D 0A

3.35 OCS?: Query Octave Setting

	Instruction			Parameters
Explanation	OCS			Query parameter: ?
ASCII	O	C	S	?
Hex	4FH	43H	53H	3FH
Byte	1	1	1	1
Return	Return octave setting			

Example: query octave setting.

02 01 43 **4F 43 53 3F** 03 23 0D 0A

Returns: return Filter and threshold of LeqA, LeqB, LeqC, LeqZ, 6.3Hz~20kHz. For example: Filter is C-weighting, threshold are LeqA=038.1; LeqB=038.2; LeqC=038.3; LeqZ=038.4; 6.3Hz=038.1; 8Hz=038.2; 10Hz=038.3; 12.5Hz=038.4; 16Hz=038.5; 20Hz=038.6; 25Hz=038.7; 31.5Hz=038.8; 40Hz=038.9; 50Hz=038.1; 63Hz=063.2; 80Hz=038.3; 100Hz=038.4; 125Hz=052.5; 160Hz=038.6; 200Hz=038.7; 250Hz=044.8; 315Hz=038.9; 400Hz=038.1; 500Hz=038.2; 630Hz=038.3; 800Hz=038.4; 1kHz=038.5; 1.25kHz=038.6; 1.6kHz=038.7; 2kHz=038.8; 2.5kHz=038.9; 3.15kHz=038.1; 4kHz=038.2; 5kHz=038.3; 6.3kHz=038.4; 8kHz=038.5; 10kHz=038.6; 12.5kHz=038.7; 16kHz=038.8; 20kHz=038.9

02 01 41 **31 2C 30 33 38 2E 31 2C 30 33 38 2E 32 2C 30 33 38 2E 33 2C 30**
33 38 2E 34 2C 30 33 38 2E 31 2C 30 33 38 2E 32 2C 30 33 38 2E 33 2C 30
33 38 2E 34 2C 30 33 38 2E 35 2C 30 33 38 2E 36 2C 30 33 38 2E 37 2C 30
33 38 2E 38 2C 30 33 38 2E 39 2C 30 33 38 2E 31 2C 30 36 33 2E 32 2C 30
33 38 2E 33 2C 30 33 38 2E 34 2C 30 35 32 2E 35 2C 30 33 38 2E 36 2C 30
33 38 2E 37 2C 30 34 34 2E 38 2C 30 33 38 2E 39 2C 30 33 38 2E 31 2C 30

33 38 2E 32 2C 30 33 38 2E 33 2C 30 33 38 2E 34 2C 30 33 38 2E 35 2C 30
33 38 2E 36 2C 30 33 38 2E 37 2C 30 33 38 2E 38 2C 30 33 38 2E 39 2C 30
33 38 2E 31 2C 30 33 38 2E 32 2C 30 33 38 2E 33 2C 30 33 38 2E 34 2C 30
33 38 2E 35 2C 30 33 38 2E 36 2C 30 33 38 2E 37 2C 30 33 38 2E 38 2C 30
33 38 2E 39 03 7D 0D 0A

3.36 CUSp1_p2_p3_p4: Set Custom Measure

	Instruction			P1	P2	P3	P4
Explanation	CUS			p1: Group; Range: 1~14	p2: Filter; 0=A; 1=B; 2=C; 3=Z	p3: Detector; 0=Fast; 1=Slow; 2=Imp.	p4: Mode; 0=SPL; 1=SD; 2=SEL; 3=E; 4=Max; 5=Min; 6=Peak; 7=LEQ; 8=LN1; …… 17=LN10
ASCII	C	U	S	1	0	0	0
Hex	43H	55H	53H	31H	30H	30H	30H
Byte	1	1	1	1~2	1	1	1~2
Return	ACK / NAK						

Example: set custom measurement of group 1 to B-weighting, Fast, Peak.

02 01 43 **43 55 53 31 20 31 20 30 20 36** 03 20 0D 0A

Return: ACK

02 01 06 **03** 06 0D 0A

Default value of each group in custom measurement (parameter with * is actually useless):

	Filter	Detector	Mode	Meaning
Custom 1	0	0	7	A, Fast*, LEQ
Custom 2	0	0	8	A*, Fast*, LN1
Custom 3	0	0	12	A*, Fast*, LN5
Custom 4	0	0	16	A*, Fast*, LN 9
Custom 5	0	0	4	A, Fast, Max
Custom 6	0	0	5	A, Fast, Min
Custom 7	0	0	1	A, Fast, SD
Custom 8	0	0	0	A, Fast, SPL
Custom 9	1	0	0	B, Fast, SPL
Custom 10	2	0	0	C, Fast, SPL
Custom 11	3	0	0	Z, Fast, SPL
Custom 12	0	0	2	A, Fast*, SEL
Custom 13	0	0	3	A, Fast*, E
Custom 14	2	0	6	C, Fast*, Peak

3.37 CUSp1_?: Query Custom Measure Setting

	Instruction			P1	P2
Explanation	CUS			p1: Group 1~14	Query parameter: ?
ASCII	C	U	S	1	?
Hex	43H	55H	53H	31H	3FH
Byte	1	1	1	1~2	1
Return	Return custom measure setting				

Example: query custom measure settings of group 12.

02 01 43 **43 55 53 31 32 20 3F** 03 1A 0D 0A

Return: the setting of group 12 is A-weighting, Fast, E.

02 01 41 **31 32 2C 30 2C 30 2C 30 33** 03 6D 0D 0A

3.38 TISp1_p2_p3_p4_p5: Set Timer

	Instruction			P1	P2	P3	P4	P5
Explanation	TIS			P1: Switch; 0=OFF; 1=ON; Default: 0	p2: Start Day; 0=Ignore; 1~31= 1~31 day form today; Default: 0	p3: Start hour; 0~23= 0~23h; Default: 12	p4: Start minute; 0~59= 0~59m; Default: 0	P5: Repeat period; 1~59= 1~59m; 60~83= 1~24h; Default: 1
ASCII	T	I	S	0	0	12	0	1
Hex	54H	49H	53H	30H	30H	31H, 32H	30H	31H
Byte	1	1	1	1	1	1~2	1~2	1~2
Return	ACK / NAK							

Example: set the Timer as switch: ON, start day: Ignore, start hour: 12:00, repeat period: 1m.

02 01 43 **54 49 53 31 20 30 20 31 32 20 30 20 31** 03 0E 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.39 TIS?: Query Timer Setting

	Instruction			Parameters
Explanation	TIS			Query parameter: ?
ASCII	54H	49H	53H	?
Hex	1	1	1	3FH
Byte	54H	49H	53H	1
Return	Return Timer setting			

Example: query Timer setting.

02 01 43 **54 49 53 3F** 03 32 0D 0A

Return: Timer setting is switch=OFF, start day=Ignore, Start Time=12:00, Repeat period=1m.

02 01 41 **30 2C 30 30 2C 31 32 3A 30 30 2C 30 31** 03 65 0D 0A

3.40 CONp1: Set Contrast

	Instruction			Parameters
Explanation	CON			p1: Contrast; Range:0~14; Default: 7
ASCII	C	O	N	7
Hex	43H	4FH	4EH	37H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set the contrast as 9.

02 01 43 **43 4F 4E 39** 03 38 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.41 CON?: Query Contrast Setting

	Instruction			Parameters
Explanation	CON			Query parameter: ?
ASCII	C	O	N	?
Hex	43H	4FH	4EH	3FH
Byte	1	1	1	1
Return	Return contrast setting			

Example: query contrast setting

02 01 43 **43 4F 4E 3F** 03 3E 0D 0A

Returns: the current contrast is 7

02 01 41 **30 37** 03 46 0D 0A

3.42 BLTp1_p2: Set Backlight

	Instruction			Parameter 1	Parameter 2
Explanation	BLT			p1: TimeOut; 0=ON, Auto shut down; 1=OFF, Never turn off; Default: 0	p2: Delay; 0=10s; 1=20s; 2=30s; 3=40s; 4=50s; 5=60s; Default: 0
ASCII	B	L	T	0	0
Hex	42H	4CH	54H	30H	30H
Byte	1	1	1	1	1
Return	ACK / NAK				

Example: set backlight as timeout: ON, delay: 20s

02 01 43 **42 4C 54 30 20 31** 03 38 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.43 BLT?: Query Backlight Setting

	Instruction			Parameters
Explanation	BLT			Query parameter: ?
ASCII	B	L	T	?
Hex	42H	4CH	54H	3FH
Byte	1	1	1	1
Return	Return backlight settings			

Example: query the backlight settings

02 01 43 **42 4C 54 3F** 03 26 0D 0A

Return: the current backlight setting is timeout=OFF, delay=20s (delay is useless when backlight timeout is OFF)

02 01 41 **31 2C 31** 03 6D 0D 0A

3.44 BAT?: Query Battery State

	Instruction			Parameters
Explanation	BAT			Query parameter: ?
ASCII	B	A	T	?

Hex	42H	41H	54H	3FH
Byte	1	1	1	1
Return	Returns the power state and supply voltage Power state: 0=Battery; 1=External power; 2=USB power Supply voltage: xx.xx V			

Example: query battery state

02 01 43 **42 41 54 3F** 03 2B 0D 0A

Returns: the current battery state is external power supply, supply voltage is 9.24V

02 01 41 **31 2C 30 39 2E 32 34** 03 7D 0D 0A

3.45 TRGp1: Set Trigger

	Instruction			Parameters
Explanation	TRG			p1: Trigger switch; 0=OFF; 1=ON; Default: 0
ASCII	T	R	G	0
Hex	54H	52H	47H	30H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set trigger as OFF

02 01 43 **54 52 47 30** 03 32 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.46 TRG?: Query Trigger Setting

	Instruction			Parameters
Explanation	TRG			Query parameter: ?
ASCII	T	R	G	?
Hex	54H	52H	47H	3FH
Byte	1	1	1	1
Return	Return Trigger settings			

Example: query trigger setting

02 01 43 **54 52 47 3F** 03 3D 0D 0A Returns:

the current trigger setting is OFF

02 01 41 **30** 03 71 0D 0A

3.47 DATp1_p2_p3_p4: Set Date

	Instruction			P1	P2	P3	P4
Explanation	DAT			p1: Date format; 0=Year/Month/Day; 1=Month/Day/Year; 2=Day/Year/Month; Default: 0	p2: Year; Range: 2000~2999	p3: Month; Range: 1~12	p4: Day; Range: 1~31
ASCII	D	A	T	0	2011	1	1
Hex	44H	41H	54H	30H	32H, 30H 31H, 31H	31H	31H
Byte	1	1	1	1	4	1~2	1~2
Return	ACK / NAK						

Example: set the date format as year/month/day, date: 5th August 2011

02 01 43 **44 41 54 30 20 32 30 31 31 20 38 20 35** 03 0D 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.48 DAT?: Query Date Setting

	Instruction			Parameters
Explanation	DAT			Query parameter: ?
ASCII	D	A	T	?
Hex	44H	41H	54H	3FH
Byte	1	1	1	1
Return	Return date setting			

Example: query date

02 01 43 **44 41 54 3F** 03 2D 0D 0A

Return: the current date format=year/month/day, date=5th August 2011

02 01 41 **30 2C 32 30 31 31 2F 30 38 2F 30 35** 03 52 0D 0A

3.49 HORp1_p2_p3: Set Time

	Instruction			P1	P2	P3
Explanation	HOR			p1: Hour; Range: 0~23h	p2: Minute; Range: 0~59m	p3: Second; Range: 0~59s
ASCII	H	O	R	1	1	1
Hex	48H	4FH	52H	31H	31H	31H
Byte	1	1	1	1~2	1~2	1~2
Return	ACK / NAK					

Example: set the time as 18:37:30

02 01 43 **48 4F 52 31 38 20 33 37 20 33 30** 03 18 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.50 HOR?: Query Time Setting

	Instruction			Parameters
Explanation	HOR			Query parameter: ?
ASCII	H	O	R	?
Hex	48H	4FH	52H	3FH
Byte	1	1	1	1
Return	Return time settings			

Example: query time setting

02 01 43 **48 4F 52 3F** 03 29 0D 0A

Returns: the current time is 18:37:48

02 01 41 **31 38 3A 33 37 3A 34 38** 03 40 0D 0A

3.51 PWOp1: Set Auto Power Off

	Instruction			Parameters
Explanation	PWO			p1: Auto power off time; 0=1min; 1=5min; 2=10min; 3=30min; 4=OFF; Default: 4
ASCII	P	W	O	4
Hex	50H	57H	4FH	34H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set auto power off as OFF

02 01 43 **50 57 4F 34** 03 3F 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.52 PWO?: Query Auto Power Off Setting

	Instruction			Parameters
Explanation	PWO			Query parameter: ?
ASCII	P	W	O	?
Hex	50H	57H	4FH	3FH
Byte	1	1	1	1
Return	Return auto power off settings			

Example: query auto power off settings

02 01 43 **50 57 4F 3F** 03 34 0D 0A

Returns: the current auto power off setting is OFF

02 01 41 **34** 03 75 0D 0A

3.53 OPMp1: Set Boot Mode

	Instruction			Parameters
Explanation	OPM			p1: Boot mode; 0=Normal; 1=Power & Boot; 2=Boot & Auto Measure; Default: 0
ASCII	O	P	M	0
Hex	4FH	50H	4DH	30H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set bott mode as normal

02 01 43 **4F 50 4D 30** 03 21 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.54 OPM?: Query Boot Mode Setting

	Instruction			Parameters
Explanation	OPM			Query parameter: ?
ASCII	O	P	M	?
Hex	4FH	50H	4DH	3FH
Byte	1	1	1	1
Return	Return boot mode setting			

Example: query boot mode

02 01 43 **4F 50 4D** 3F 03 2E 0D 0A Return:

the current boot mode is normal

02 01 41 **30** 03 71 0D 0A

3.55 UMDp1: Set USB Mode

	Instruction			Parameters
Explanation	UMD			p1: USB Mode; 0=Always Ask; 1=U Disk Mode; 2=Modem Mode; Default: 0
ASCII	U	M	D	0
Hex	55H	4DH	44H	30H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set to modem mode

02 01 43 **55 4D 44 32** 03 2D 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.56 UMD?: Query USB Mode Setting

	Instruction			Parameters
Explanation	UMD			Query parameter: ?
ASCII	U	M	D	?
Hex	55H	4DH	44H	3FH
Byte	1	1	1	1
Return	Return USB mode setting			

Example: query USB mode setting

02 01 43 **55 4D 44 3F** 03 20 0D 0A

Return: the current USB mode is modem mode

02 01 41 **32** 03 73 0D 0A

3.57 GPDp1_p2: Set GPS

	Instruction			P1	P2
Explanation	GPD			p1: GPS switch; 0=OFF; 1=ON; Default: 0	p2: Auto time sync; 0=OFF; 1=ON; Default: 0
ASCII	G	P	D	0	0

Hex	47H	50H	44H	30H	30H
Byte	1	1	1	1	1
Return	ACK / NAK				

Example: set GPS as switch: ON, auto time sync: ON

02 01 43 **47 50 44 31 20 31** 03 30 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.58 GPD?: Query GPS Setting

	Instruction			Parameters
Explanation	GPD			Query parameter: ?
ASCII	G	P	D	?
Hex	47H	50H	44H	3FH
Byte	1	1	1	1
Return	Return GPS setting			

Example: query GPS setting

02 01 43 **47 50 44 3F** 03 2D 0D 0A

Returns: the current GPS setting is switch=ON, auto time sync=ON

02 01 41 **31 2C 31** 03 6F 0D 0A

3.59 VER?: Query About Information

	Instruction			Parameters
Explanation	VER			Query parameter: ?
ASCII	V	E	R	?
Hex	56H	45H	52H	3FH
Byte	1	1	1	1
Return	Return the about information			

Example: query about information

02 01 43 **56 45 52 3F** 03 3D 0D 0A

Returns: type=309S, class=2, S/N=490001, version=3.00.141020, HWID=P0274.03.B11

02 01 41 **33 30 39 53 2C 32 2C 34 39 30 30 30 31 2C 33 2E 30 30 2E 31 34 31 30 32 30 2C 50 30 32 37 34 2E 30 33 2E 42 31 31 03 33 0D 0A** 03 70 0D 0A

3.60 LNGp1: Set Language

	Instruction			Parameters
Explanation	LNG			p1: Language selection;
				0=English; 1=Chinese; 2=Portuguese; 3=Spanish; 4=German; 5=French; Default: 0
ASCII	L	N	G	0
Hex	4CH	4EH	47H	30H
Byte	1	1	1	1
Return	ACK / NAK			

Example: set the language as Chinese

02 01 43 **4C 4E 47 31** 03 37 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.61 LNG?: Query Language Setting

	Instruction			Parameters
Explanation	LNG			Query parameter: ?
ASCII	L	N	G	?
Hex	4CH	4EH	47H	3FH
Byte	1	1	1	1
Return	Return the language setting			

Example: query language setting

02 01 43 **4C 4E 47 3F** 03 39 0D 0A Returns:

the current language is Chinese

02 01 41 **31** 03 70 0D 0A

3.62 OUTp1_p2_p3_p4: Set Output

	Instruction			P1	P2	P3	P4
Explanation	OUT			p1: Filter of SLM; 0=A; 1=B; 2=C; 3=Z; Default: 0	p2: Detector of SLM; 0=Fast; 1=Slow; 2=Imp.; Default: 0	p3: Mode of SLM; 0=SPL; 1=LEQ; 2=Peak; Default: 0	p4: Output of Octave; 0=LAeq; 1=LBeq; 2=LCeq; 3=LZeq; 4~39=6.3Hz~20kHz; Default: 0
ASCII	O	U	T	0	0	0	0
Hex	4FH	55H	54H	30H	30H	30H	30H
Byte	1	1	1	1	1	1	1~2
Return	ACK / NAK						

Example: set the output to A-weighting, Fast, SPL for SLM. Set the output to LAeq for Octave

02 01 43 **4F 55 54 30 20 30 20 30 20** 30 03 2D 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.63 OUT?: Query Output Setting

	Instruction			Parameters
Explanation	OUT			Query parameter: ?
ASCII	O	U	T	?
Hex	4FH	55H	54H	3FH
Byte	1	1	1	1
Return	Return output setting			

Example: query output setting

02 01 43 **4F 55 54 3F** 03 32 0D 0A

Return: the output for SLM=A-weighting, Fast, SPL. For Octave=LAeq

02 01 41 **30 2C 30 2C 30 2C 30** 03 6D 0D 0A

3.64 RES: Apply Factory Settings

☆**Note**: After receipt of the ACK, user must wait at least 6 seconds to finish the operation.

	Instruction			Parameters
Explanation	RES			None
ASCII	R	E	S	None
Hex	52H	45H	53H	None
Byte	1	1	1	None
Return	ACK / NAK			

Example: apply the factory settings

02 01 43 **52 45 53** 03 07 0D 0A

Return: ACK. Wait at least 6 seconds after receipt of ACK

02 01 06 03 06 0D 0A

3.65 STAp1: Start / Stop Measurement

	Instruction			Parameters
Explanation	STA			p1: Start / Stop measurement; 0=Stop; 1=Start
ASCII	S	T	A	1
Hex	53H	54H	41H	31H
Byte	1	1	1	1
Return	ACK / NAK			

Example: start measurement

02 01 43 **53 54 41 31** 03 34 0D 0A

Return: ACK

02 01 06 03 06 0D 0A

3.66 STA?: Query Measurement State

	Instruction			Parameters
Explanation	STA			Query parameter: ?
ASCII	S	T	A	?
Hex	53H	54H	41H	3FH
Byte	1	1	1	1
Return	Return measurement state			

Example: query the measurement state

02 01 43 **53 54 41 3F** 03 3A 0D 0A

Returns: the measurement state is start (running)

02 01 41 **31** 03 70 0D 0A

☆**Note:** The following instructions are to query the sound level meter measurements data. They contain the "return manner" parameter, it means:

Stop return: The sound level meter no longer to return measurements data every second after received this instruction.

Single return: The sound level meter will return the measurements data on time after received the instruction.

Continuous return: Automatically return the measurements data every second after received the instruction.

Therefore, the "return manner" parameter in the instruction can be set to 2 and send to the sound level meter, sound level meter will return the latest measurements data every second.

3.67 DMAp1_?: Query the Main Screen Data

	Instruction			P1	P2
Explanation	DMA			p1:Return manner 0=Stop return 1=Single return 2=Continuous return	Query parameter: ?
ASCII	D	M	A	1	?
Hex	44H	4DH	41H	31H	3FH
Byte	1	1	1	1	1
Return	Return the main screen data Filter: 0=A, 1=B, 2=C, 3=Z Detector: 0=Fast, 1=Slow, 2=Imp. Mode: 0=SPL, 1=PEAK, 2=LEQ, 3=MAX, 4=MIN Measurement data: The value of the main screen				

Example: query the data of the main screen, and return only once

02 01 43 **44 4D 41 31 20 3F** 03 25 0D 0A

Returns: the current main screen is: B-weighting, Slow, measurement data 066.1dB

02 01 41 **31 2C 31 2C 32 2C 30 36 36 2E 31** 03 70 0D 0A

3.68 TPRp1_?: Query 3-Profile Screen Data

	Instruction			P1	P2
Explanation	TPR			p1: Return manner; 0=Stop return; 1=Single return; 2=Continuous return	Query parameter: ?
ASCII	T	P	R	1	?
Hex	54H	50H	52H	31H	3FH
Byte	1	1	1	1	1
Return	Return 3-Profile screen data Profile 1: Filter, Detector, Mode, Data Profile 2: Filter, Detector, Mode, Data Profile 3: Filter, Detector, Mode, Data				

Example: query 3-Profile screen data

02 01 43 **54 50 52 31 20 3F** 03 3B 0D 0A

Returns: the current 3-Profile screen data: profile 1: B-weighting, LEQ, 066.1dB; profile 2: C-weighting, Fast, SPL, 067.1dB; profile 3: Z-weighting, Fast, SPL, 067.4dB

02 01 41 **31 2C 31 2C 32 2C 30 36 36 2E 31 2C 32 2C 30 2C 30 2C 30 36 37 2E 31 2C 33 2C 30 2C 30 2C 30 36 37 2E 34** 03 74 0D 0A

3.69 DLNp1_?: Query Statistical Analysis Data (LN)

	Instruction			P1	P2
Explanation	DLN			p1: Return manner; 0=Stop return;	Query parameter: ?
				1=Single return; 2=Continuous return	
ASCII	D	L	N	1	?
Hex	44H	4CH	4EH	31H	3FH
Byte	1	1	1	1	1
Return	Return statistical analysis (LN) data Filter: 0=A, 1=B, 2=C, 3=Z Detector: 0=Fast, 1=Slow, 2=Imp. Mode: 0=SPL Group 1 LN percentages and LN statistics …… Group 10 LN percentages and LN statistics				

Example: query statistical analysis (LN) data

02 01 43 **44 4C 4E 31 20 3F** 03 2B 0D 0A

Returns: the current statistical analysis data is: A-weighting, Fast, SPL, LN10=065.4dB, LN20=065.4dB, LN30=065.4dB, LN40=065.3dB, LN50=065.3dB, LN60=065.3dB, LN70=035.2dB, LN80=065.2dB, LN 90=065.2dB, LN99=065.1dB

02 01 41 **30 2C 30 2C 30 2C 31 30 2C 30 36 35 2E 34 2C 32 30 2C 30 36 35 2E 34 2C 33 30 2C 30 36 35 2E 34 2C 34 30 2C 30 36 35 2E 33 2C 35 30 2C 30 36 35 2E 33 2C 36 30 2C 30 36 35 2E 33 2C 37 30 2C 30 36 35 2E 32 2C 38 30 2C 30 36 35 2E 32 2C 39 30 2C 30 36 35 2E 32 2C 39 39 2C 30 36 35 2E 31 2C** 03 58 0D 0A

3.70 DCU?: Query Custom Measure Data

	Instruction			P1	P2
Explanation	DCU			p1: Return manner; 0=Stop return; 1=Single return; 2=Continuous return	Query parameter: ?
ASCII	D	C	U	1	?
Hex	44H	43H	55H	31H	3FH
Byte	1	1	1	1	1
Return	Return custom measure data: Group 1Filter, Detector, Mode, Data …… Group 14Filter, Detector, Mode, Data				

Example: query custom measure data

02 01 43 **44 43 55 31 20 3F** 03 3F 0D 0A

Returns: the current custom measure data: Group 0: A-weighting, Fast*, L10, 065.4dB; Group 1: A-weighting, Fast*, L20, 065.4dB; Group 2: A-weighting, Fast*, L60, 065.3dB; Group 3: A-weighting, Fast*, L99, 065.1dB; Group 4: A-weighting, Fast, Min, 064.4dB; Group 5: A-weighting, Fast*, Peak, 081.9dB; Group 6: A-weighting, Fast, Sel, 083.8dB; Group7: A-weighting, Fast, SPL, 065.3dB; Group 8: B-weighting, Fast, SPL, 066.4dB; Group 9: A-weighting, Fast, SD, 005.6dB; Group10: B-weighting, Fast, SD, 007.2dB; Group 11: A-weighting, Fast*, E, 2.696E-05dB; Group 12: A-weighting, Fast, Max, 65.5dB; Group 13: B-weighting, Fast*, Leq, 066.2dB. ☆**Note:** Parameters with * are useless

02 01 41 **30 2C 30 2C 30 38 2C 30 36 35 2E 34 2C 30 2C 30 2C 30 39 2C 30 36 35 2E 34 2C 30 2C 30 2C 31 33 2C 30 36 35 2E 33 2C 30 2C 30 2C 31 37 2C 30 36 35 2E 31 2C 30 2C 30 2C 30 35 2C 30 36 34 2E 34 2C 30 2C 30 2C 30 36 2C 30 38 31 2E 39 2C 30 2C 30 2C 30 32 2C 30 38 33 2E 38 2C 30 2C 30 2C 30 30 2C 30 36 35 2E 33 2C 31 2C 30 2C 30 30 2C 30 36 36 2E 34 2C 30 2C 30 2C 30 31 2C 30 30 35 2E 36 2C 31 2C 30 2C 30 31 2C 30 30 37 2E 32 2C 30 2C 30 2C 30 33 2C 32 2E 36 39 36 65 2D 30 35 2C 30 2C 30 2C 30 34 2C 30 36 35 2E 35 2C 31 2C 30 2C 30 37 2C 30 36 36 2E 32** 03 2F 0D 0A

3.71 DSLp1_p2_?: Query All the Data of the Sound Level Meter

	Instruction			P1	P2	P3
Explanation	DSL			p1: Data group; 0=SPL; 1=SD; 2=SEL; 3=E; 4=Max; 5=Min; 6=Peak; 7=Leq; 8=LN	p2: Return manner; 0=Stop return; 1=Single return; 2=Continuous return	Query parameter: ?
ASCII	D	S	L	0	1	?
Hex	44H	53H	4CH	30H	31H	3FH
Byte	1	1	1	1	1	1
Return	Return the corresponding group data: Group 0: LAF, LAS, LAI, LBF, LBS, LBI, LCF, LCS, LCI, LZF, LZS, LZI Group 1: LAFsd, LASsd, LAIsd, LBFsd, LBSsd, LBIsd, LCFsd, LCSsd, LCIsd, LZFsd, LZSsd, LZIsd Group 2: LAsel, LBsel, LCsel, LZsel					
	Group 3: LAe, LBe, LCe, LZe Group4: LAFmax, LASmax, LAImax, LBFmax, LBSmax, LBImax, LCFmax, LCSmax, LCImax, LZFmax, LZSmax, LZImax Group 5: LAFmin, LASmin, LAImin, LBFmin, LBSmin, LBImin, LCFmin, LCSmin, LCImin, LZFmin, LZSmin, LZImin Group 6: LApeak, LBpeak, LCpeak, LZpeak Group 7: LAeq, LBeq, LCeq, LZeq Group 8: Percentage values and statistics of ten LN					

Example: query group 7 (LEQ)

02 01 43 **44 53 4C 37 20 31 20** 3F 03 21 0D 0A

Returns: the LEQ data: LAeq=065.0dB, LBeq=066.2dB; LCeq=067.0dB; LZeq=067.2dB

02 01 41 **30 36 35 2E 30 2C 30 36 36 2E 32 2C 30 36 37 2E 30 2C 30 36 37 2E 32** 03 6E 0D 0A

3.72 DOT?: Query 1/1 Octave Band Data

	Instruction			P1	P2
Explanation	DOT			p1: Return manner; 0=Stop return; 1=Single return; 2=Continuous return;	Query parameter: ?
ASCII	D	O	T	1	?
Hex	44H	4FH	54H	31H	3FH
Byte	1	1	1	1	1
Return	Return 1/1 octave band data: Filter, LAeq, LBeq, LCeq, LZeq, 8Hz, 16Hz, 31.5Hz, 63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz				

Example: query 1/1 octave data

02 01 43 **44 4F 54 31 20 3F** 03 32 0D 0A

Returns: the current 1/1 octave band filter is C-weighting, and data are: LAeq=064.7dB, LBeq=066.0dB, LCeq=066.8dB, LZeq=067.1dB, 8Hz=030.7dB, 16Hz=041.6dB, 31.5Hz=048.4dB, 63Hz=053.9dB, 125Hz=056.8dB, 250Hz=059.5dB, 500Hz=060.8dB, 1kHz=060.3dB, 2kHz=057.8dB, 4kHz=053.6dB, 8kHz=047.0dB, 16kHz=035.4dB

02 01 41 **31 2C 30 36 34 2E 37 2C 30 36 36 2E 30 2C 30 36 36 2E 38 2C 30 36 37 2E 31 2C 30 33 30 2E 37 2C 30 34 31 2E 36 2C 30 34 38 2E 34 2C 30 35 33 2E 39 2C 30 35 36 2E 38 2C 30 35 39 2E 35 2C 30 36 30 2E 38 2C 30 36 30 2E 33 2C 30 35 37 2E 38 2C 30 35 33 2E 36 2C 30 34 37 2E 30 2C 30 33 35 2E 34** 03 7F 0D 0A

3.73 DTT?: Query 1/3 Octave Band Data

	Instruction			P1	P2
Explanation	DTT			p1: Return manner; 0=Stop return; 1=Single return; 2=Continuous return;	Query parameter: ?
ASCII	D	T	T	1	?
Hex	44H	54H	54H	31H	3FH
Byte	1	1	1	1	1
Return	Return 1/3 octave band data: Filter, LAeq, LBeq, LCeq, LZeq, 6.3Hz, 8Hz, 10Hz, 12.5Hz, 16Hz, 20Hz, 25Hz, 31.5Hz, 40Hz, 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz, 20kHz				

Example: query 1/3 octave band data.

02 01 43 44 54 54 31 20 3F 03 00 0D 0A

Return: current Filter is C-weighting, LAeq=064.8dB, LBeq=066.0dB, LCeq=066.9dB, LZeq=067.1dB, 6.3Hz=017.8dB, 8Hz=023.5dB, 10Hz=028.0dB, 12.5Hz=032.2dB, 16Hz=035.4dB, 20Hz=038.4dB, 25Hz=041.0dB, 31.5Hz=043.6dB, 40Hz=045.9dB, 0Hz=047.0dB, 63Hz=048.5dB, 80Hz=049.8dB, 100Hz=050.9dB, 125Hz=052.1dB, 160Hz=053.0dB, 200Hz=054.1dB, 250Hz=054.7dB, 315Hz=055.5dB, 400Hz=055.9dB, 500Hz=056.2dB, 630Hz=056.3dB, 800Hz=056.1dB, 1kHz=055.6dB, 1.25kHz=054.9dB, 1.6kHz=054.2dB, 2kHz=053.0dB, 2.5kHz=051.8dB, 3.15kHz=050.4dB, 4kHz=048.8dB, 5kHz=046.9dB, 6.3kHz=044.6dB, 8kHz=041.8dB, 10kHz=038.1dB, 12.5kHz=033.3dB, 16kHz=026.2dB, 20kHz=015.0dB

02 01 41 **31 2C 30 36 34 2E 38 2C 30 36 36 2E 30 2C 30 36 36 2E 39 2C 30 36 37 2E 31 2C 30 31 37 2E 38 2C 30 32 33 2E 35 2C 30 32 38 2E 30 2C 30 33 32 2E 32 2C 30 33 35 2E 34 2C 30 33 38 2E 34 2C 30 34 31 2E 30 2C 30 34 33 2E 36 2C 30 34 35 2E 39 2C 30 34 37 2E 30 2C 30 34 38 2E 35 2C 30 34 39 2E 38 2C 30 35 30 2E 39 2C 30 35 32 2E 31 2C 30 35 33 2E 30 2C 30 35 34 2E 31 2C 30 35 34 2E 37 2C 30 35 35 2E 35 2C 30 35 35 2E 39 2C 30 35 36 2E 32 2C 30 35 36 2E 33 2C 30 35 36 2E 31 2C 30 35 35 2E 36 2C 30 35 34 2E 39 2C 30 35 34 2E 32 2C 30 35 33 2E 30 2C 30 35 31 2E 38 2C 30 35 30 2E 34 2C 30 34 38 2E 38 2C 30 34 36 2E 39 2C 30 34 34 2E 36 2C 30 34 31 2E 38 2C 30 33 38 2E 31 2C 30 33 33 2E 33 2C 30 32 36 2E 32 2C 30 31 35 2E 30** 03 72 0D 0A

3.74 CSD: Save Custom Data into MicroSD

	Instruction			Parameters
Explanation	CSD			None
ASCII	C	S	D	None
Hex	43H	53H	44H	None
Byte	1	1	1	None
Return	Return state: 0= Stored successfully, MicroSD OK; 1= Failure to store, MicroSD error; 2=No MicroSD.			

Example: Save CSD

02 01 43 43 53 44 03 17 0D 0A

Return: save successfully, MicroSD OK

02 01 41 30 03 71 0D 0A

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