ADT161 Communication protocol

Data sending format:

A：X：Command：Parameter 0：Parameter 1：Parameter 2：……：Parameter 5	0x00
ASC code	Hexadecimal

Data returning format:

A：F/E：Command：Parameter 0：Parameter 1：Parameter 2：……：Parameter 5	0x00
ASC code	Hexadecimal

Note:

A: Address. It is the module's serial address, the range is 001～127, factory default setting is 001.

X: R/W, R=read, W=write.

Command: The specific items of commands.

F/E: F=command was sent correctly, E= command sent error.

Commands									Description	Returned value
A	X	Knnnn	C0	C1	C2	C3	C4	EOS		
	R	OADD	-	-	-	-	-	0x0	Read series port's address (001～127)	A：F：OADD： address +EOS
	W	OADD	address	-	-	-	-	0x0	Set series port's address (001～127)	A：F：OADD：OK+EOS
	W	OBAUD	Baud rate	-	-	-	-	0x0	Set Baud rate，4800/9600/19200/38400/115200	A：F：OBAUD：OK+EOS
	R	OVER	-	-	-	-	-	0x0	Read software version	A：F：OVER：version+ EOS
	R	OCODE	-	-	-	-	-	0x0	Read serial number	A：F：OCODE：serial number +EOS
	R	ODATE	-	-	-	-	-	0x0	Read production date，e.g. 2015-01-31	A：F：ODATE：production date +EOS
	R	TAG	Label length	-	-	-	-	0x0	Read sensor label	A：F：TAG：sensor label +EOS
	W	TAG	Label length	Label content	-	-	-	0x0	Write sensor label	A：F：TAG：OK+EOS
	R	ORAN	-	-	-	-	-	0x0	Read range	A：F：ORAN：lower limit: high limit:：sensor type accuracy+EOS
	W	MWORK	Work mode	-	-	-	-	0x0	Set work mode，2=Linear correction 0= non linear correction	A：F：MWORK：OK+EOS
	R	MWORK	-	-	-	-	-	0x0	Read work mode，2=Linear correction 0= non linear correction	A：F：MWORK：work mode +EOS
	W	OCS	-	-	-	-	-	0x0	Start user calibration	A：F：OCS：OK+EOS

	W	OCP	Standard point	Standard value	-	-	-	0x0	Calibration point: Z-zero, M-middle, F-full scale Note: need run “OCS” before calibration. Need run “OCALD” before calibrating middle point and enable 3-point calibration	A：F：OCP：OK+EOS
	W	OCPOK	0 or 1	-	-	-	-	0x0	Save calibration data and exit	A：F：OCPOK：OK+EOS
	W	OFALT	-	-	-	-	-	0x0	Cancel user calibration	A：F：OFALT：OK+EOS
	R	OCDATE	-	-	-	-	-	0x0	Read user calibration date，e.g. 2015-01-31	A：F：OCDATE：calibration date +EOS
	W	OCDATE	Calibration date	-	-	-	-	0x0	Write user calibration date，e.g. 2015-01-31	A：F：OCDATE：OK+EOS
	W	OCRAM	calibration point sign	Calibration pressure	Measured pressure	-	-	0x0	Write user calibration information, unit is kPa. Note: need run “OCS” at first. It can be 1,2 and 3, totally 3 points. When enabling “OCALD” for 3 point calibration, all the points are valid; when it is not enabled, only 2 and 3 can be used. After writing, it needs run “OCPOK” to start user calibration.	A：F：OCRAM：OK+EOS
	R	OCRAW	calibration point sign	-	-	-	-	0x0	Read user calibration information, unit is kPa.	A：F：OCRAM：calibration point sign：standard pressure：measured

										pressure+EOS
	R	OCALD	-	-	-	-	-	0x0	Read the forced 3-point calibration sign: 0=3 point calibration is invalid, 1=3 point calibration is valid	A：F：OCALD：calibration sign+EOS
	W	ODLEN	Data length	-	-	-	-		Write output data length，5～9	A：F：ODLEN：OK+EOS
	W	OZERO	-	-	-	-	-	0x0	Zero, valid when pressure deviation less than 2%FS, only for current mode	A：F：OZERO：OK+EOS
	W	MZERO	-	-	-	-	-	0x0	Cancel zero offset，only for current mode	A：F：MZERO：OK+EOS
	W	ABSZ	Current barometric pressure	-	-	-	-	0x0	Absolute pressure zero, also for calibrating current standard, standard pressure	A：F：ABSZ：OK+EOS
	R	MRMD	-	-	-	-	-	0x0	Read current measured value，return measured value	A：F：MRMD：measured data +EOS
	R	MRMN	-	-	-	-	-	0x0	Read the data without any corrections	A：F：MRMN：measured data +EOS
	W	OCONT	Reading status	-	-	-	-	0x0	Read the measured data sent by the device,1=continuous send, 0=end	A：F：OCONT：OK+EOS
	R	OSENS	-	-	-	-	-	0x0	Read sensor type，A(absolute)、D(differential)、G(gauge)	A：F：OSENS：sensor type+EOS
	R	MRATE	-	-	-	-	-	0x0	Read the rate of sensor output data，unit: times/s，default is 50	A：F：MRATE：output rate+EOS
	R	OCALI	-	-	-	-	-	0x0	Read calibration data:1/0(factory	A：F：OCALI：factory calibration

									calibrated):1/0(user calibrated): 2/3(number of current valid calibration points)	status：user calibration status：number of calibration points+EOS
	R	OACCY	-	-	-	-	-	0x0	Read device accuracy，parameter：20(0.2%)、10(0.1%)、5(0.05%)、2(0.02%)、1(0.01%)	A：F：OACCY：device accuracy+EOS
	R	OPFILT	-	-	-	-	-	0x0	Read status for pressure filter and first-order coefficient	V03.xx version：A:F:OPFILT: filter status: first-order coefficient +EOS；V08.xx version：A:F:OPFILT:low rate filter: high rate filter: first-order coefficient +EOS
	R	BMP	-	-	-	-	-	0x0	Read barometric sensor measured value, returned value, unit kPa	A：F：BMP：measure data：KPA+EOS
	W	OCALD	Calibration sign	-	-	-	-	0x0	Write forced 3-point calibration sign, 0=cancel, 1=enable	A：F：OCALD：OK+EOS
	R	OTFILT	-	-	-	-	-	0x0	Read status for temperature filter and first-order coefficient	A：F：OTFILT：filter sign：first-order coefficient +EOS
	R	ODLEN	-	-	-	-	-	0x0	Read the output data length	A：F：ODLEN：data length +EOS

Error code:

- 1015 The parameter is too long.
- 1025 The series address is out of range 001～127.
- 1007 Parameter is wrong.
- 1030 data is out of zero range.
- 1006 Illegal range.
- 1005 Illegal unit.

- 1001 Out-of-channel operation.
- 1013 The total number of linear points is out of range.
- 1014 Working mode is wrong.
- 1023 Pressure unit name is wrong.
- 1024 Non-selectable pressure unit.
- 1031 Erase ferroelectric storage verification errors.
- 1040 No zero in absolute mode.