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MicroRidge MobileCollect EVO API

This API is intended for SPC/Quality Control Software to enable basic setup and configuration of a MobileCollect System within the host software.

Advanced setup will still need to take place in MobileCollect Xpress or MobileCollect Extended Setup software. There are currently two setup configuration files that the MobileCollect Base utilizes; Xpress Setup and Extended Setup. The base only utilizes one configuration file at a time, either Xpress or Extended. This API is based off the Xpress Setup configuration file and thus parameters set with the API will be visible in Xpress Setup.** For advanced configuration, have users go to Xpress Setup unless they are configuring a Remote Transmitter, Command Mobile Module, read switch, or need additional Channels. If they have these advanced setup needs, they will need to use Extended Setup and parameters set with the API will not display.

We have downloadable executables and user manuals on our website for both Xpress and Extended Setup.

*** The API offers additional flexibility over Xpress Setup and some parameters may not show exactly as they we're setup via the API. This may lead users to change settings in Xpress and those settings will have to be reconfigured via the API*

Supported MobileCollect Bases

- All MobileCollect EVO Base Models will have API support. Model ID
    - **Wedge Base EVO**: MC-BK306-A
    - **RS-232 Base EVO**: MC-BR306-A
    - **USB Base EVO**: MC-BU306-A
    - **MicroBase EVO USB A & USB C**: MC-BM306-A
- Users must have firmware 6.20 or higher to utilize the API
    - All EVO bases will ship with Firmware 6.20 or newer and have API support.
- To check the base model and firmware version to confirm API support:
    - <V Version Serial Command
        - Base Model Number, Firmware Version
        - Example Output: MC-BW306-A, 6.20
    - <$A:BMN Model API command (Firmware 6.28+)
        - Example Output: MC-BK306-A{CR}MBLAPI_SUCCESS{CR}<$A:BMN
    - <$A:BFV Firmware Version API command (Firmware 6.28+)
        - Example Output: 6.28{CR}MBLAPI_SUCCESS{CR}<$A:BFV

API Commands

- Case sensitive, you must use uppercase for all commands.
- Communication is done through a Virtual Com Port.
    - We recommend downloading MicroRidge ComTestSerial to get a feel for how the API communicates. This will allow you to send the API commands without writing any code to test the functionality.
- User will see API Confirmation LED blink sequence

  - Red LED on for 1 second
  - Yellow LED blink twice for 250ms while Red LED remains illuminated.
  - Total blink sequence duration = 1 second.
- API Confirmation gets sent back to host device (computer) at the end of every successful API call
  - Carriage Return (\x0d)
  - MBLAPI_SUCCESS
  - Carriage Return (\x0d)
  - Command Host Computer Sent (Example: <$A:ICLA)
  - Carriage Return (\x0d)

<$A:Cn   Mobile Module Pairing Mode

- This command puts the base into pairing mode. The user then goes through the pairing process on their transmitter to complete the pairing. This is the same process that is used today with Xpress Setup and Extended Setup.
- When the command is sent, you'll see the bottom right green LED on the full size base blink and the green LED on the MicroBase blink.
- The user needs to go through the following pairing procedure on the Mobile Module.
  - Put the Mobile Module into the Setup Mode.
    - Press & hold the Setup button. The Setup button is the button closest to the gage cable.
    - While you continue to press the Setup button, press and release the Read button on the Mobile Module.
    - Once both LEDs start to flash, release the Setup button.
    - When the Setup Mode is active, both LEDs will flash rapidly. The left LED is red and the right LED is green.
    - Press and release the Setup Button on the Mobile Module.
      - You will see a sequence of LED flashes on the base and Mobile Module, then the Mobile Module LED's will turn off and the base LED's will stop flashing and illuminate the solid green power LED.
- n value is used to set the channel
  - * = Global Channel
  - A = Channel 1
  - B = Channel 2
  - C = Channel 3
  - D = Channel 4
  - E = Channel 5
  - F = Channel 6
  - G = Channel 7
  - H = Channel 8
  - I = Channel 9
  - J = Channel 10
  - K = Channel 11
  - L = Channel 12

- M = Channel 13
- N = Channel 14
- O = Channel 15

<$A:C0 Disable Mobile Module Pairing Mode

- This command disables pairing mode and puts the base back into normal mode where it can accept measurements. This is useful if a user puts the device into pairing mode and doesn't pair a transmitter. One application of this command could be to utilize it with a timer. For example, if the user doesn't pair in x seconds, disable pairing mode and put base back into normal mode.
- Bottom right green power LED on the full size base and green LED on MicroBase will stop blinking and remain solid.

<$A:Dn Remove Mobile Module Pairing on Channel n

- Removes pairing of a mobile module on a specified channel. This will effectively take the Mobile Module out of Individual Channel pairing and move it to Global Channel pairing.

<$A:OFxn Set Measurement Output Format

- This sets the measurement output format for either all of the individual channels and/or the global channel.
- Be aware that the API allows additional flexibility over Xpress Setup and if a user loads the configuration into Xpress Setup they may not see the measurement output format set by the API.
    - This will be common when setting it to "All Data" as this option is not supported in Xpress Setup.
    - It is recommended to have the host software verify the correct measurement output format is coming in. If the host software is not getting the correct measurement output format desired, send the command to change it back to the desired format.
- x sets the measurement output format for either the global channel or all the individual channels.
    - I = Individual Channels
    - G = Global Channel
- n sets the measurement output format. Bold Are Supported by Xpress Setup Individual Channels and underlined are supported by Xpress Global Channel
    - A = Major Data = Measurement, Chan, Module ID, Units, Battery, Signal, Attempts
    - B =Measurement, Module ID
    - C = Measurement, Gage Channel
    - D = Gage Channel, Measurement
    - E = Measurement (left-justified), Chan, Module ID, Units, Battery, Signal, Attempts
    - F = Measurement (left-justified), Module ID
    - **G = Measurement (left-justified)**
    - **H = Module ID, Measurement (left-justified)**
    - **I = Module Label, Measurement (left-justified)**
    - **J = Gage Channel, Meas (left-justified)**

- **K = GagePort printer mode**
- **L = Mitutoyo MIG**
- **M = Mitutoyo MUX10**
- **N = Measurement, Gage Channel (left-justified)**
- **O = U-Wave**
- **P = Module ID, Measurement, Channel**
- **Q = All Data (Measurement, Chan #, Chan Letter, Module ID, Base ID, Module Label, Units, Battery Voltage, Signal Strength, Send Attempts, Event # , Read Gap (msec)**

<$A:ICLA List Gage Channel Status

- This command sends back the status of each gage channel. This is used to determine what Mobile Modules are paired on what channels.
  - Gage Channel, Module Type, Module ID, Module Label
    - Gage Channel = A-O
    - Module Type
      - Mini Mobile Module = \x03 (Char = ETX)
      - Command Mobile Module = \x06 (Char = ACK)
      - RS-232 V2 Mobile Module= \x07 (Char = BEL)
      - None = \xfa
    - Module ID
      - This is a static, non editable parameter of the Mobile Module
    - Module Label
      - This is a text field that can be edited in Xpress or Extended setup. It allows for custom label between 1 – 8 characters.
        - Note: If the user changes this you may need to send the Measurement Output Format Command as the measurement output format may be changed.

<$A:OMn Change MicroBase EVO Output Mode

- This command gives you the ability to change and query the output mode of the MicroBase EVO.
  - n sets the MicroBase EVO to Wedge, Serial or Queries the output mode.
    - W = Wedge Mode
    - S = Serial Mode
    - Q = Query (works with Full-Size Wedge Base)
      - Serial Mode Responds with MBLAPI_SERIAL
      - Wedge Mode Responds with MBLAPI_WEDGE
  - When sending commands to Full-Size Bases where you cannot change the output mode via the API
    - W & S will respond as follows for Full-Size Bases
      - USB Base = MBLAPI_USB_BASE_NO_WEDGE

- RS-232 Base = MBLAPI_RS-232_BASE_NO_WEDGE
- Wedge Base = MBLAPI_SLIDE_SWITCH
  - Output mode is changed via hardware slide switch on back of base.

- Q will respond as follows for Full-Size Bases
  - USB Base = MBLAPI_USB_BASE_NO_WEDGE
  - RS-232 Base = MBLAPI_RS-232_BASE_NO_WEDGE
  - Wedge Base
    - Serial Mode Responds with MBLAPI_SERIAL
    - Wedge Mode Responds with MBLAPI_WEDGE

<$A:NFxn Measurement Output Format

- This command gives you the ability to set the measurement output format. You must set both x & n to successfully execute this command.
  - x sets the number format from United States “1.234” to European “1,234”
    - . = United States “1.234”
    - , = European “1,234
  - n enables or disables the leading zero on a measurement.
    - E = Enables Leading Zero
    - D = Disables Leading Zero

<$A:USBn USB Serial Send Mode

- This command changes the USB Serial Send Mode from Normal (default) to Send All mode. In Normal mode, the Base will check to see if the host has DTR (Data Terminal Ready) enabled before sending data. In Send All mode, the Base will send data regardless of the status of the DTR signal.
  - n sets the send mode to Normal, Send All or Query to return the current mode.
    - N = Normal
    - A = Send All
    - Q = Query
      - Normal responds with MBLAPI_NORMAL
      - Send All responds with MBLAPI_SEND_ALL

<$A:BID Base ID

- Sends back the Base ID. Base ID is a 6 character unique identifier for a MobileCollect Base Receiver.

<$A:BMN Base Model Number

- Sends back the Base Model Number. The Base Model Number can be used to identify the type of MobileCollect Base you are communicating with.
  - Wedge Base
    - MC-BK306-A
  - RS-232 Base

        - MC-BR306-A
    - USB Base
        - MC-BU306-A
    - MicroBase USB A & USB C
        - MC-BM306-A

<$A:BCS Restore Base to Factory Defaults

- Resets the Base back to factory defaults.

<$A:BLD Blink Base LEDs

- Blinks the LEDs.
    - Full Size Base (MC-BU306-A, MC-BR306-A & MC-BK306-A)
        - Turn on and off left green LEDs and then right multicolored LEDs.
    - MicroBase (MC-BM306-A)
        - Turn on and off multicolored LEDs.

<$A:BFV Base Firmware Version

- Sends back firmware version number for Base.

Version History

API Version	Release Date	Base Firmware	Notes
1.0	Jan 01 2025	6.20	Added Following Commands: ▪ **<$A:Cn** - Enable pairing mode on n channel ▪ **<$A:C0** - Disable pairing mode ▪ **<$A:Dn** - Remove pairing on n channel ▪ **<$A:OFxn** - Change output format ▪ **<$A:ICLA** - Query pairing information for all gage channels.
1.1	Jun 05 2025	6.27	Updated Following Commands: ▪ <$A:OFxn • Added **<$A:OFIQ** & **<$A:OFGQ** ○ Q = All Data Added Following Commands: ▪ **<$A:OMn -** Change or Query Output Mode on MicroBase EVO between Wedge & Serial
1.2	Sept 09 2025	6.28	Added Following Commands: ▪ **<$A:BID -** Base ID ▪ **<$A:BMN -** Base Model Number ▪ **<$A:BCS -** Reset to factory defaults ▪ **<$A:BLD -** Blink LEDs ▪ **<$A:BFV -** Firmware Version ▪ **<$A:NFxn** - Set the number format • Decimal in USA "." Or European "," • Enable or disable leading zero ▪ **<$A:USBn** – USB Serial Send Mode • Change or query USB Serial Send Mode
1.3	Oct 21 2025	6.28	<$A:ICLA ▪ Added Char output for Module Type
1.4	Oct 23 2025	6.28	Changed Association nomenclature to Pairing.