

CB-OBS4XX MIGRATING FROM CB-OEMSPA3XX

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1 Introduction





A migration from the cB-OEMSPA3xx family (cB-OEMSPA310, cB-OEMSPA311, cB-OEMSPA331, cB-OEMSPA312, cB-OEMSPA332 and cB-OEMSPA333) to a cB-OBS4xx (cB-OBS410, cB-OBS411, cB-OBS433 and cB-OBS431) module is normally done without any problems. Even so, there are some issues that have to be considered.






2 cB-OBS4xx vs OEMSPA3xx Considerations

- The input pull-up resistors are changed to min 30kohm. A higher value saves current consumption and makes it possible to increase external pull-down resistors (see "Design Example" section in Electrical and Mechanical Data Sheet).
- The High- and Low-signal definitions are slightly changed on the Logic Level signals. See the "Characteristics" section in the Electrical and Mechanical Data Sheet for more info. Especially consider the Low-level definition on the Switch-0 signal.
- Current consumption could differ depending on how the modules is used.
- The logic levels signals are input floating during reset state.
- The antenna and antenna connector locations are changed. See the "Module Outlines" section in the Electrical and Mechanical Data Sheet for more info.
- The height of the module is slightly higher due to the shield box and different default internal antenna. Please note that an internal antenna with extra low profile is available on request.
- The solder pads are updated
 - The pin numbering (but not the position) of the solder pads (J6) are changed (see the "J6 Connector" section in the Electrical and Mechanical Data Sheet).
 - New solder pads (J6) are added (see the "Dimensions" section in the Electrical and Mechanical Data Sheet).
 - The solder pads are not accessible from the top (component) side.
 - It is not recommended to solder the module manually.
- Test points are added on the bottom side (see the "Dimensions" section in the Electrical and Mechanical Data Sheet). These pads are only used in production and shall not be connected.
- No flex film connector.
- The starting time has increased from ~0.5 second to ~1.0 second. Please note that the start time depends on initial radio configuration and the radio patch file that is downloaded at every start. If the radio configuration changes or a new radio patch file is released and integrated in a new firmware release, the start time may increase or decrease.
- The boot program is different which means that the flash loader protocol is also different.
- Some AT command limitations in OBS4xx are:
 - Easy connect not supported.
 - It is not possible to read the pin code (AT*AGFP?).
 - Serial Settings (AT*AMRS) does not support 300 bits/s or 5-7 data bits due to HW limitations.
 - Security is slightly different due to Simple Pairing in Bluetooth 2.1. See "Bluetooth Serial Port Adapter Security" documents for details.
 - Stop Mode configuration (AT*AMPM) requires a restart to take affect.
- The functionality of the OBS410 module will be slightly limited and the preliminary limitations are:
 - Multipoint with related AT commands not supported
 - Baud Rate limited to 460.8 kbits/s
- The product names has been reduced to OBS4xx: O=OEM, B=Bluetooth, S=SPA=Serial Port Adapter.

3 Module selection

It is not always a 1:1 mapping between the cB-OEMSPA3xx and the cB-OBS4xx modules. See the matrix below with differences between different migration options.

| | | | |
|--|---|--|---|
| <p>Migrating</p> <p>To</p> <p>From</p> |  <p>cB-OBS410</p> |  <p>cB-OBS411</p> |  <p>cB-OBS433</p> |
|  <p>cB-OEMSPA310</p> | <p>Recommended option for most users</p> <ul style="list-style-type: none"> • Reduced throughput • Standard internal antenna 1mm higher • Slightly reduced AT command set • No multi point or repeater firmware option | <ul style="list-style-type: none"> • Standard internal antenna 1mm higher • Slightly higher cost | |

| | | | |
|--|--|---|--|
|  <p>cB-OEMSPA311</p> | <ul style="list-style-type: none"> • Reduced throughput • Antenna and antenna connector locations changed • Standard internal antenna 1mm higher • Stop mode not available • Flexfilm connector option will not be available • No option for I2C interface firmware • Slightly reduced AT command set • No multi point or repeater firmware option | <p>Recommended option for most users</p> <ul style="list-style-type: none"> • Antenna and antenna connector locations changed • Standard internal antenna 1mm higher* • Flexfilm connector option will not be available • No option for I2C interface firmware | |
|  <p>cB-OEMSPA331</p> | | <ul style="list-style-type: none"> • Lower output power • Antenna and antenna connector locations changed • Standard internal antenna 1mm higher • Flexfilm connector option will not be available • No option for I2C interface firmware | <ul style="list-style-type: none"> • Other form factor (36x23mm) • Antenna and antenna connector locations changed • Internal antenna 2.6mm higher • Higher output power • Better sensitivity • Flexfilm connector option will not be available • Internal RS232 driver need to be disabled if not used (Mode signal). • Solder pads location different • Higher cost • No option for I2C interface firmware |
|  <p>cB-OEMSPA312</p> | | <ul style="list-style-type: none"> • No RS232 signal levels (Logic levels only) • 20-pin header connector option not available • Smaller form factor (16x36mm) • Antenna and antenna connector locations changed • Flexfilm connector option will not be available | <p>Recommended option for most users</p> <ul style="list-style-type: none"> • Antenna and antenna connector locations slightly changed. • Flexfilm connector option will not be available • Higher output power • Better sensitivity |
|  <p>cB-OEMSPA332</p> | | | <p>Recommended option for most users</p> <ul style="list-style-type: none"> • Antenna and antenna connector locations slightly changed. • Flexfilm connector option will not be available • Higher output power • Better sensitivity |
|  <p>cB-OEMSPA333</p> | | | <p>Recommended option for most users</p> <ul style="list-style-type: none"> • No important differences |