Data types

Unless specified in a parameter description, these are the possible values for used types:

Type	Description
BOOL	Either **true** of **false**
BYTE	An integer value between **-128** and **127**
SHORT	An integer value between **-32768** and **32767**
INT	An integer value between **-2147483648** and **2147483647**
LONG	An integer value between **-9223372036854775808** and **9223372036854775807**
BIGINT	An integer value with **unlimited** range
DOUBLE	A decimal point value between **-1.7976931348623157E+308** and **1.7976931348623157E+308**
STRING	Any text with **unlimited** length

Parameter reference for XT3100

Parameter	Type	Description
command.argument[{index}]	STRING	Command nth argument.
device.backupBattery	DOUBLE	Backup battery voltage in millivolts.
device.backupUpdated	BOOL	Backup firmware updated.
device.battery	DOUBLE	Battery voltage in millivolts.
device.bridge.battery	INT	
device.bridge.values[{index}].avgRSSI	SHORT	
device.bridge.values[{index}].id	STRING	
device.bridge.values[{index}].relayedCount	INT	
device.bridge.values[{index}].siCount	INT	
device.cellular.mno	STRING	Mobile Network Operator (MNO) short alphanumeric format. Max 10 characters.
device.cellular.rssi	INT	Received Signal Strength Indication. Reported in raw dBm. **Value** / **Description** 0 — Less than -110 dBm 1-62 — From -110 to -49 dBm with 1dBm steps 63 — -48 dBm or greater 99 — Not Known or Not Detectable
device.commissioningActionId	INT	Commissioning action ID. There are various installation / commissioning actions such as solar test, occupancy calibration, 7-way test, etc.. unitless.

<table>
<tr><td>device.commissioningActionResponse</td><td>STRING</td><td>Response string from the commissioning action.</td></tr>
<tr><td>device.configHash</td><td>STRING</td><td>Configuration hash.</td></tr>
<tr><td>device.counters.bleResults</td><td>INT</td><td>Number of times a scan results in an advertisement found since the previous wake.</td></tr>
<tr><td>device.counters.bleScans</td><td>INT</td><td>Number of times scanned for BLE advertisements since the previous wake.</td></tr>
<tr><td>device.counters.loadResetChk</td><td>INT</td><td>Number of instances the system timed out waiting for an ADC representing the SC20 Load SW Voltage to drop below ~1V, indicating it's safe to turn the system on again. This parameter is for diagnostic purposes and is unlikely to ever increment.</td></tr>
<tr><td>device.counters.mcuIdleAtt</td><td>INT</td><td>Number of times that the PSoC has attempted to put the SC20 into idle mode.</td></tr>
<tr><td>device.counters.mcuIdleClearError</td><td>INT</td><td>Number of times that the PSoC encountered an error while clearing idle mode.</td></tr>
<tr><td>device.counters.mcuIdleSetError</td><td>INT</td><td>Number of times that the PSoC encountered an error while setting idle mode.</td></tr>
<tr><td>device.counters.mcuWakeAtt</td><td>INT</td><td>Number of times that the PSoC has attempted to take the SC20 out of idle mode.</td></tr>
<tr><td>device.counters.powerUpReset</td><td>INT</td><td>Power-on resets.</td></tr>
<tr><td>device.counters.pwrOffAttempts</td><td>INT</td><td>Number of power-off attempts on the SC20. This parameter is for diagnostic purposes and is unlikely to ever increment.</td></tr>
<tr><td>device.counters.pwrOffErrors</td><td>INT</td><td>Number of SC20 power-off errors. This parameter is for diagnostic purposes and is unlikely to ever increment.</td></tr>
<tr><td>device.counters.pwrOnAttempts</td><td>INT</td><td>Number of SC20 power-on attempts. This parameter is for diagnostic purposes and is unlikely to ever increment.</td></tr>
<tr><td>device.counters.pwrOnErrors</td><td>INT</td><td>Number of SC20 power-on errors. This parameter is for diagnostic purposes and is unlikely to ever increment.</td></tr>
<tr><td>device.counters.resetBrownout</td><td>SHORT</td><td>Brown-out resets.</td></tr>
<tr><td>device.counters.resetHibernate</td><td>SHORT</td><td>Hibernate resets.</td></tr>
<tr><td>device.counters.resetSoftware</td><td>INT</td><td>Software reset counter.</td></tr>
<tr><td>device.counters.resetUnknown</td><td>INT</td><td>Unknown resets.</td></tr>
<tr><td>device.counters.resetWatchdog</td><td>SHORT</td><td>Hardware watchdog resets.</td></tr>
<tr><td>device.credentialCksum</td><td>STRING</td><td></td></tr>
<tr><td>device.emergencyLog</td><td>BOOL</td><td>True if an emergency log was generated by the device. An emergency log is generated in the case that the SC20 application reverts to old firmware.</td></tr>
<tr><td>device.firmware.boot</td><td>STRING</td><td>PSoC boot firmware version.</td></tr>
<tr><td>device.firmware.main</td><td>STRING</td><td>Main firmware version.</td></tr>
<tr><td>device.ledBoxVersion</td><td>STRING</td><td>LED Box version.</td></tr>
<tr><td>device.powerUpMode</td><td>BYTE</td><td>Last power-up/reset mode
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>1</td><td>Software Reset</td></tr>
<tr><td>2</td><td>DC Power On</td></tr>
<tr><td>3</td><td>Motion Sense</td></tr>
<tr><td>4</td><td>Interval Wakeup</td></tr>
<tr><td>5</td><td>No Motion Sense</td></tr>
<tr><td>6</td><td>Periodic Motion</td></tr>
<tr><td>7</td><td>Periodic No Motion</td></tr>
<tr><td>12</td><td>Input1</td></tr>
</table></td></tr>
<tr><td>device.socSys</td><td>STRING</td><td>SC20 Android system firmware version.</td></tr>
<tr><td>device.softwareMain</td><td>STRING</td><td>SC20 application firmware version.</td></tr>
<tr><td>device.timestamp</td><td>LONG</td><td>Date time. Seconds since 00:00:00 January 1, 1970 UTC.</td></tr>
<tr><td>event.code</td><td>INT</td><td>Event identifier.</td></tr>
<tr><td>event.deviceId</td><td>STRING</td><td>Device serial number.</td></tr>
<tr><td>event.guid</td><td>STRING</td><td>Telemetry record ID.</td></tr>
<tr><td>event.name</td><td>STRING</td><td>Named event identifier.</td></tr>
<tr><td>event.sequenceNo</td><td>SHORT</td><td>Event sequence number.</td></tr>
<tr><td>event.timestamp</td><td>LONG</td><td>Seconds since epoch. Midnight, Jan 1, 1970.</td></tr>
<tr><td>firmware.update.filename</td><td>STRING</td><td></td></tr>
</table>

firmware.update.status	INT	
gps.altitude	INT	Altitude.
gps.bearing	SHORT	GPS heading (Horizontal dilution of precision in tenths of meters).
gps.geoCksum	INT	Geofence system checksum.
gps.geoCksumCsv	LONG	
gps.geoCksumJson	LONG	
gps.hdop	DOUBLE	GPS PDOP.
gps.location.lat	DOUBLE	Latitude.
gps.location.lon	DOUBLE	Longitude.
gps.lockStatus	BYTE	GPS lock status.
gps.odometer	DOUBLE	Virtual odometer GPS.
gps.satellitesFix	INT	GPS satellites (Number of satellites used for position fix).
gps.speed	DOUBLE	GPS Speed. Speed from GPS in kilometers per hour.
payload.accelerometerX	DOUBLE	X-vector milli g.
payload.accelerometerY	DOUBLE	Y-vector milli g.
payload.accelerometerZ	DOUBLE	Z-vector milli g.
payload.currentSolar	INT	Current provided by solar panel, represented as ADC counts.
payload.diagnosticCode	INT	Diagnostic code.
payload.door.battery	DOUBLE	Door sensor battery voltage.
payload.door.state	BYTE	Door state.
payload.door.version	STRING	Door sensor version.
payload.dsi.ad1Age	DOUBLE	DSI advertisement 1 age.
payload.dsi.ad2Age	DOUBLE	DSI advertisement 2 age.
payload.dsi.ad3Age	DOUBLE	DSI advertisement 3 age.
payload.dsi.appFirmware	STRING	DSI application firmware.
payload.dsi.bootFirmware	STRING	DSI boot loader firmware.
payload.dsi.config	STRING	DSI configuration.
payload.dsi.currentDoorState	DOUBLE	DSI current door state.
payload.dsi.currentStateTime	DOUBLE	DSI current door state time.
payload.dsi.deviceUid	STRING	DSI device UID.
payload.dsi.dsInternalBatteryVoltage	DOUBLE	DS internal battery voltage.
payload.dsi.dsRssi	DOUBLE	DSI DS RSSI.
payload.dsi.error0	STRING	DSI error 0.
payload.dsi.error1	STRING	DSI error 1.
payload.dsi.externalPowerVoltage	DOUBLE	DSI external power voltage.
payload.dsi.internalTemperature	DOUBLE	DSI internal temperature.
payload.dsi.previousDoorState	DOUBLE	DSI previous door state.
payload.dsi.previousStateTime	DOUBLE	DSI previous door state time.
payload.dsi.rssi	DOUBLE	DSI RSSI.
payload.dsi.systemMode	STRING	DSI system mode.
payload.externalAdc	DOUBLE	External ADC voltage.
payload.geoLastEnter	INT	The last geofence that was entered. Default is 0.
payload.geoLastExit	INT	The last geofence that was exited. Default is 0.
payload.geoRev	STRING	Geofence system version.
payload.image.file	STRING	Image file name uploaded to the FTP server.
payload.image.index	INT	Image index used to identify uploaded images and JSON results to S3.
payload.image.match	BYTE	During an occupancy measurement the device will match pixels between the left and right stereo images. XVLConfidence is the confidence in that stereo matching operation.
payload.image.process	INT	The process exit value from XVL. Reported in events because non-zero values indicate certain errors.
payload.image.runtime	SHORT	The process runtime from the last XVL job in seconds.
payload.motionState	BOOL	Sensor motion detected

<table>
<tr><td>payload.occupancyValidityFlag</td><td>BYTE</td><td>Occupancy Valid Flag.<table><tr><th>Value</th><th>Description</th></tr><tr><td>0</td><td>Not Valid</td></tr><tr><td>1</td><td>Valid</td></tr></table></td></tr>
<tr><td>payload.occupancyVolume</td><td>STRING</td><td>Occupancy volume</td></tr>
<tr><td>payload.queueTimestamp</td><td>INT</td><td>Holds the timestamp at which the event was added to the event queue. Default Value is 0.</td></tr>
<tr><td>payload.sceneMotionFlag</td><td>BYTE</td><td>Scene motion flag 1 motion was detected.</td></tr>
<tr><td>payload.temperature</td><td>INT</td><td>Sensor ambient temperature.</td></tr>
<tr><td>payload.tpms.configuredAggregator</td><td>STRING</td><td>Expected/configured TPMS aggregator (BlueRex).</td></tr>
<tr><td>payload.tpms.count</td><td>DOUBLE</td><td>TPMS sensors count in alert.</td></tr>
<tr><td>payload.tpms.currentPage</td><td>DOUBLE</td><td>Current page number of TPMS message.</td></tr>
<tr><td>payload.tpms.messageRssi</td><td>DOUBLE</td><td>TPMS message RSSI.</td></tr>
<tr><td>payload.tpms.totalMessages</td><td>DOUBLE</td><td>Total number of TPMS messages.</td></tr>
<tr><td>payload.tpms.values[{index}].battery</td><td>DOUBLE</td><td></td></tr>
<tr><td>payload.tpms.values[{index}].id</td><td>STRING</td><td></td></tr>
<tr><td>payload.tpms.values[{index}].position</td><td>STRING</td><td></td></tr>
<tr><td>payload.tpms.values[{index}].pressure</td><td>DOUBLE</td><td></td></tr>
<tr><td>payload.tpms.values[{index}].status</td><td>STRING</td><td></td></tr>
<tr><td>payload.tpms.values[{index}].temperature</td><td>DOUBLE</td><td></td></tr>
<tr><td>payload.trailerOccupancyFlag</td><td>BYTE</td><td>Indicates whether the trailer is full or not (based on images, ultrasonic, etc.). 0, 1, or -1 (if uninitialized).</td></tr>
<tr><td>payload.trailerType</td><td>BYTE</td><td>Trailer type, a [0,7] int representing the type of trailer sitar is installed in. Unitless.</td></tr>
<tr><td>payload.ultrasonicDistance</td><td>STRING</td><td>Ultrasonic distance of the nearest object (meters).</td></tr>
<tr><td>payload.voltageExternal</td><td>DOUBLE</td><td>External power voltage.</td></tr>
<tr><td>payload.voltageSolar</td><td>INT</td><td>Voltage provided by solar panel, represented as ADC counts.</td></tr>
<tr><td>sensata.sensorData</td><td>STRING</td><td>Sensata sensor data.</td></tr>
</table>