

Revision F, 27 Jan 2017

## Before We Start...

Always read these instructions even if you are familiar with similar installation processes.

The installation of 3 separate devices will be described in this manual

### 1. Sensor

Surface mounted device which detects whether a car is parked above it and communicates the status to a neighboring device through a dedicated network. The sensor includes 4 different sensing technologies: magnetic, radar, optical and thermal.

The sensor data is transferred to Spaceek's server and the occupancy decision is made using all technologies in real time.

The sensor uses BLE (Bluetooth Low Energy) technology to communicate with the surrounding devices.

Each sensor is contained in a dedicated Polycarbonate case (IP67) and sustains over 4 tons of pressure.

The sensor is battery operated and typically runs over 4 years without a replacement.

### 3. Jumper

The Jumper is a small communication device, very much like a sensor, which is used to transfer data between sensor devices and / or between sensors and harvesters. The purpose of the jumper is to bridge distances and close the communication gap between devices (where needed).

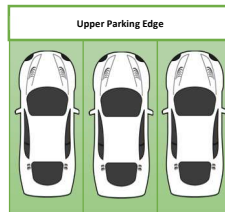
### 2. Harvester

The Harvester is a device which continuously communicates with the sensors, collects the information and transmits the data to the cloud.

The harvester is a dedicated electronic device which uses BLE technology to communicate with the local devices and either a 3G network or local Wi-Fi service to communicate with the cloud. The harvester can be connected to an electric power supply or optionally be solar powered (with additional gear).

### Alignment

Perpendicular (or angled) – cars parked side-by-side.



Make sure to hold the Site Layout Scheme and Spaceek **TechTool** application installed in your mobile device. For help with this or other inquiries, please contact [Spaceek Customer Support](#)

The positioning of the installed Spaceek components should conform with existing laws and regulations (where applicable), of the country of installation.

▲ Ensure that appropriate Personal Protection Equipment is always worn.

### Step 1 – Jumper Configuration

Activate Bluetooth function in your mobile device.

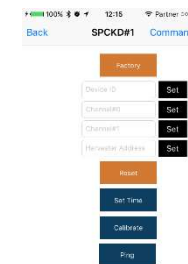
Open the **TechTool** application and place the mobile device **adjacent to the** relevant Jumper. Tap **rescan** for device scanning.



Jumper to be identified by the highest reception level, located first on the list. Tap on it and then tap **Connect**.



Fill in **Device ID** field with relevant parking bay number as described in the Site Layout Scheme.



Tap **Set**.

Fill in **Channel#0** and **Channel#1** fields with relevant number as described in the Site Layout Scheme.

Tap **Set**.

Tap **Reset** and confirm by tapping **Yes** (**TechTool** disconnects and then reconnects). Repeat the same procedure for each Jumper before their deployment.

### Step 2 – Jumper Deployment

Locate Jumpers according to the Site Layout Scheme.

Deploy Jumper 2.5m (8.2 ft.) above the ground (For exceptions please refer to the [Spaceek Customer Support](#)

Make sure there are **no** obstacles in the way between Jumpers and Sensors (clear line-of-sight).

Mark the place on the wall or pole where you would like to deploy the Jumper.

Deploy Jumpers onto walls or poles. Bear in mind, that there is no need to connect Jumpers to a power supply or network.

## Step 3 – Harvester Deployment

Locate Harvesters according to the Site Layout Scheme.

Consider the ideal Harvester location bearing in mind the following factors:

1. Internet connection with fixed IP address must be provided. You can choose a LAN connection, Wi-Fi or cellular connection using a dongle.
2. Harvester to be deployed 2.5m (8.2 ft.) above the ground (For exceptions please refer to the [Spaceek Customer Support](#))
3. Availability of power supply

Deploy Harvester(s) onto walls or poles. We recommend using a metal hose clamp to secure the Harvester into place (as shown below).



## Step 4 – Connect Harvester

Connect Harvester to a power supply.

Choose your preferred internet connection from the following options:

### Mobile Network Connection

Insert the SIM card into the supplied dongle.

Connect the dongle to the USB port on the Harvester.

### Local Lan Connection

Connect one end of an RJ45 cable to the Ethernet port on the Harvester.

Connect the other end of the RJ45 cable to the network.

## Step 5 – Sensor Surface preparation

▲ **Work Safely!** It is the responsibility of the installer to ensure that road construction and weather conditions are suitable for the installation of Spaceek components.

**Clear** any parking bays obstacles.

Make sure surface is **Clean and Dry**. Do not attempt an installation work if the road surface is wet or damp.

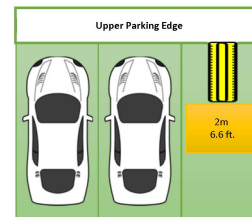
Remove all debris from the cavity, either using compressed air or vacuum removal.

▲ Ensure that when using compressed air that the correct Personal Protection Equipment is worn and that blown debris is not directed at persons or vehicles.

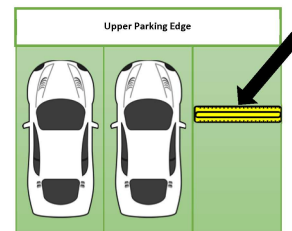
## Step 6 - Measuring and Marking

✍ Using chalk or an environmentally friendly aerosol spray, accurately mark on the parking surface the correct positions for the sensor cavities.

✂ Measure parking spot length and divide by 3. Mark the first third upper line. For Example: total length is 6m (19.86 ft.) The line should be placed at 2m (6.6 ft.) from the **Upper Parking Edge** as depicted at the picture below.



Measure and mark the center point of the parking lot.



Make sure the distance between the sensors is less than 6m (19.7 ft.).

## Step 7 – Deploying Sensors

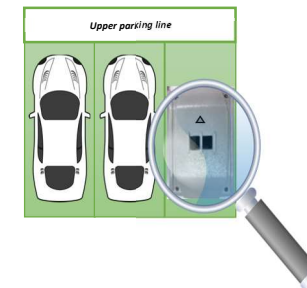
Always refer to the handling and usage instructions provided with the fixing materials.

Bear in mind that methods for deploying the Sensors to **epoxy floors** and **non-epoxy floors** are slightly different. The following steps describe both methods.

### Set Sensor direction as follows:

Point guiding arrow mark to place the Sensor in the right direction towards the

### Ending Parking Line



**IMPORTANT!** Sensor direction is crucial for system function.

### • Non-epoxy floors case

Use protective gloves to protect your hands.

Apply 3M DP600 concrete glue on the back of the Sensor.



Set the Sensor firmly on top of the marked position on the floor.

**IMPORTANT!** 3M DP600 concrete glue dries quickly. Once the Sensor is placed in position, it cannot be removed.

- **Epoxy floor case**

Set the Sensor on the marked position on the floor and remove the Sensor cover.

Mark the floor below the four screw holes at the base of the Sensor.



Drill the four screw holes in the floor as marked.

Remove all debris from the cavity, either using compressed air or vacuum removal.

Attach the base of the Sensor to the floor with mounting screws.

Attach the cover of the Sensor to the base of the Sensor with the Torx screws.



Only after deploying **all** Sensors, you are ready to move to the next step – **Sensor Configuration**.

### Step 8 - Sensor Configuration

Activate Bluetooth function in your mobile device.



Open **TechTool** application and place mobile device **adjacent to the** relevant Sensor.

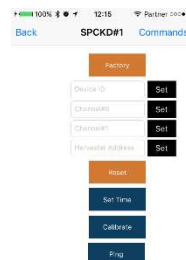
Tap **rescan** for Spaceek device scanning



Sensor to be identified by the highest reception level, located first on the list. Tap on it and then tap **Connect**.



Fill in **Device ID** field with the relevant parking bay number as described on the Site Layout Scheme.



Tap **Set**.

Fill in **Channel#0** field with the relevant number as described on the Site Layout Scheme.

Tap **Set**.

Tap **Reset** and confirm by tapping **Yes** (**TechTool** disconnects and then reconnects).



Verify configuration was successfully uploaded by pressing the **Back** button and finding the device with the related ID.

### The FCC Wants You to Know

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- a) Reorient or relocate the receiving antenna.
- b) Increase the separation between the equipment and receiver.
- c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- d) Consult the dealer or an experienced radio/TV technician.

### FCC Warning

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC Rules.