

# Terraweb Control Box (TCB)



## Introduction

Project safety requires 24x7, high frequency and accurate monitoring measurements. If used judiciously with geotechnical instrumentation, geodetic monitoring provides valuable information which is critical and is extensively used in civil construction and structural monitoring. TCB is a GSM computer that communicates with the Total Station in order to measure the desired targets on specific schedule, covering all the aspects of the surveying measuring procedure and upload the measurements to a database or FTP server.



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**T.C.B.**  
terramove control box

 Terraweb

## Methodology

A typical methodology for a geodetic monitoring project is based on the following steps.

- Installation of optical targets at locations to be monitored.
- Installation of total station and control box at a proper and safe place with proper input voltage and with optical target in line of sight.
- Establishment of trigonometric micro-movement network outside the project's zone of influence.
- Configuring and starting the measurement and recording procedure at predefined frequency
- Regular transmission of the results to a dedicated central computer or server placed either at site or at a remote location.
- Automated database feeding; presentation of the results in time & distortion graphs designed by database software.
- Access to view data and results remotely can be given to all the concerned authorities related to the project's monitoring.
- Database administrator prepares reports on regular basis and submit to project authorities.

## Features

- 24/7 automated Total Station measurements.
- Schedule frequency of measurements.
- Remote control over GSM, reboot the system is one call away.
- Internet connectivity comes from a 3G/4G GSM router which works worldwide. Also the wi-fi gives the option to remote control TCB when the user is on site using a laptop or mobile phone.
- Automatic surveying measurements calculation.
- Automatic measurement upload to FTP server.
- The TCB can automatically give feed back to specific users regarding the measurement (via SMS or email) and/or general status of the Control Box (via SMS). Events like end of measurement , fail of measurement etc inform users about the measurement process.
- User Friendly interface with access to all



measured data.

- Automatically generated reports for each measurement cycle.
- Calculating position of the total station using least square method solution.
- Advanced surveying settings and options for measurement.
- Remote orientation is a special feature of the TCB which can correct the orientation without on site visit.
- The internet connection may be lost for many reasons. TCB can measure without connection to internet. A special event can inform the user with sms that the measurement finished and saved internally. Data uploaded to server when internet connection activated.
- All the measurements stored inside the TCB as backup even if they were uploaded to the server. On server side data stored after imported to database.
- Lightweight and rugged against all weather conditions gives the advance of easy installation or transfer to new position.

## Applications

There are several applications that the geodetic monitoring system can take place. Some of them are the following:

- Metro/Tunnels/Railroads/Sewage
- Bridges
- Dams
- High rise buildings

## Technical Specifications

Power supply	12V
Working temperature	-20°C to +60°C
Dust and water protection	IP65
RAM	4GB
Internal storage	32GB
Operating system	Ubuntu
Size LxWxH	46,2 x 35,3 x 17 cm
Weight	8Kg
Supported Total Stations	Leica, Sokkia, Topcon, Geomax

