

Connecting to the CRTN

NTRIP Connection / IPs & Ports / RTCM Versions

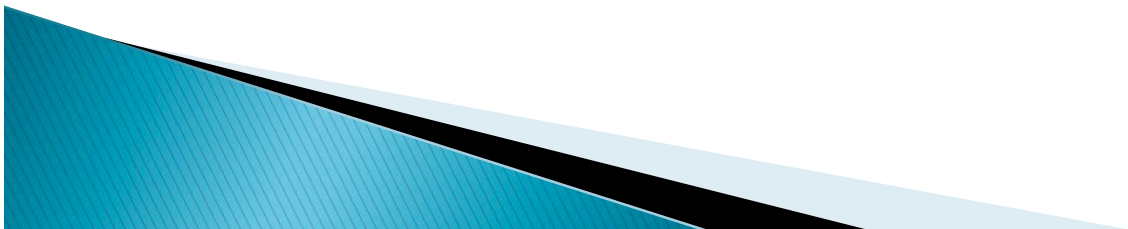
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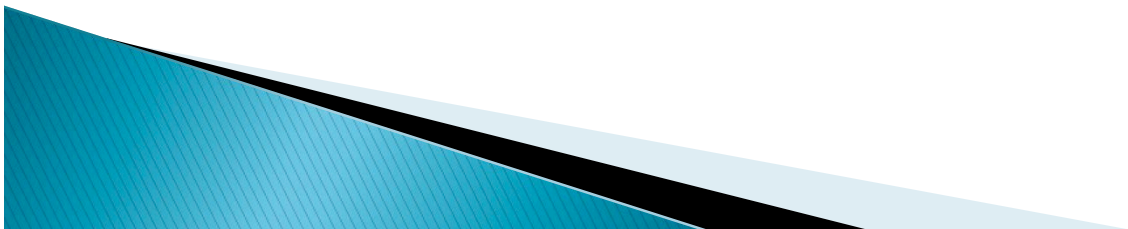
What we will cover.

- ▶ Why
- ▶ What
- ▶ The Connection
- ▶ Getting Started (The Internet)
- ▶ Configuration Settings
- ▶ Information & Status of Network
- ▶ Samples / Questions



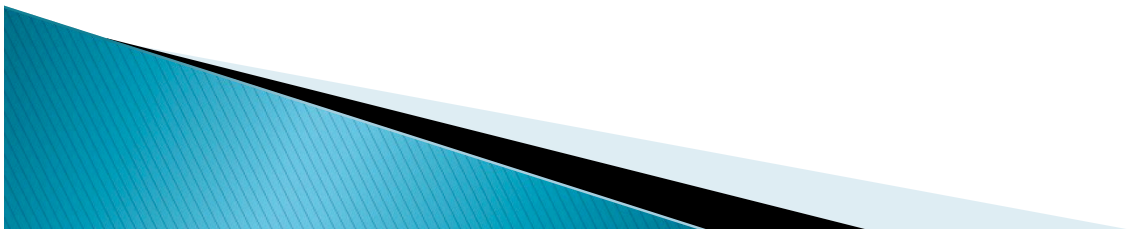
Why?

- ▶ Makes you money (Pays for self)
- ▶ Eliminate need for physical base/radio.
- ▶ No setup. Radio Conflicts.
- ▶ No risk of theft or cost of guard.
- ▶ Known coordinate point.



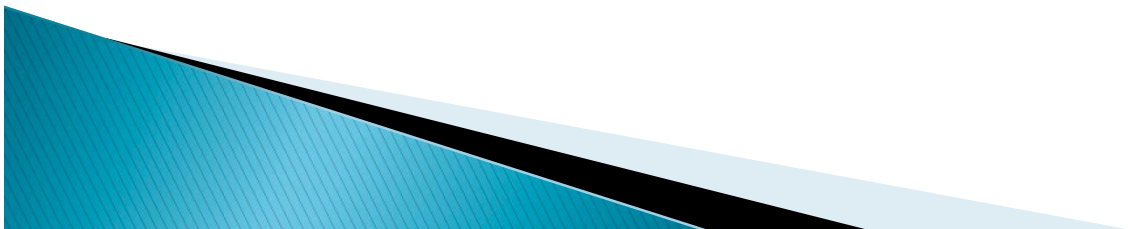
What are we doing?

- ▶ CRTN –is– RTK (Single Base Solution)
- ▶ Basic RTK Principles
- ▶ Positioning Performance 95% (Trimble R8)
 - 15km 1 Reading Horiz: 0.12' +/–
 - 15km 2 Readings Horiz: 0.09' +/–
 - 15km 3 Readings Horiz: 0.07' +/–
 - 15km 4 Readings Horiz: 0.06' +/–



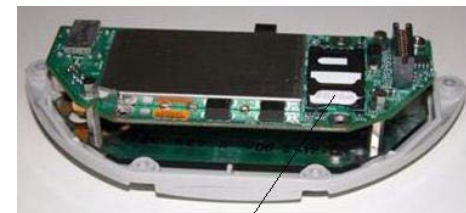
The Connection

- ▶ NTRIP: (Networked Transport of RTCM via Internet Protocol)
- ▶ Infrastructure: Server / Caster / Client
- ▶ Data: RTCM stream (Radio Technical Commission for Maritime Services)
- ▶ Coordinates



Getting Started (The Internet)

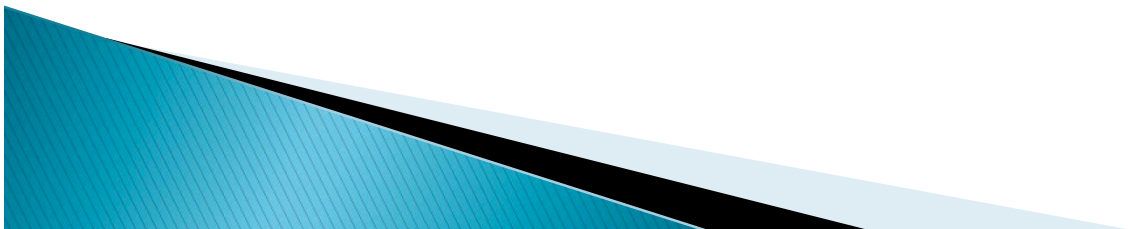
- ▶ Data Collector vs. Receiver
- ▶ Getting hooked up:
 - Serial Modem
 - Bluetooth DUN
 - Tethering by Bluetooth/WiFi (Cell Phone)
 - WiFi Device
 - Built in Cell (usually SIM)



Enter SIM Card Here

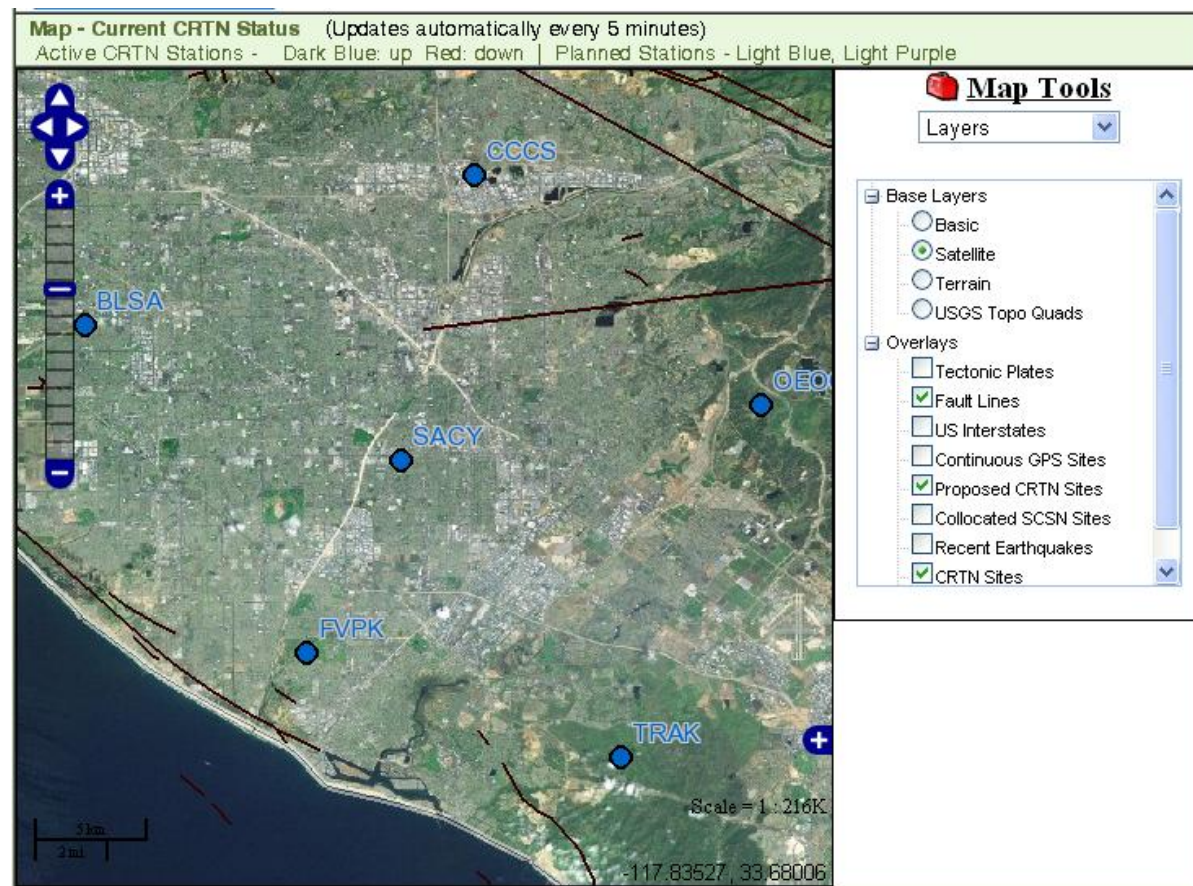
Configuration Settings

- ▶ NTRIP Access:
 - Northern California
 - IP: 132.239.154.101
 - Port: 2103
 - Southern California
 - IP: 132.239.152.74
 - Port: 2103
- ▶ RTCM v3.0
- ▶ Broadcast Coordinates CSRC 2011.00 Epoch – NAD83 (NSRS2007)
- ▶ Account Setup: ybock@ucsd.edu
- ▶ Website: csrc.ucsd.edu
- ▶ Forums: CRTN



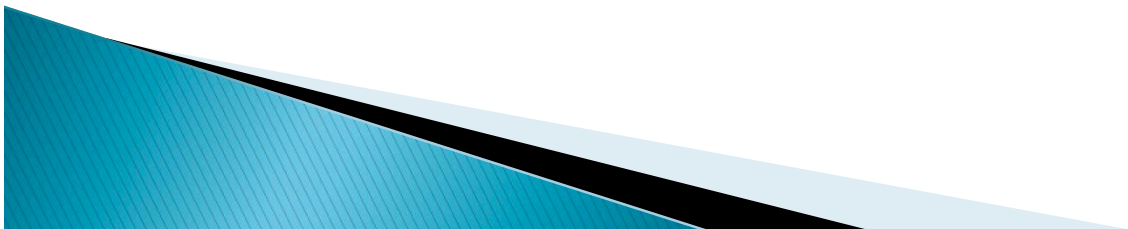
Status

► CRTN Current Status Map:



Samples / Questions

- ▶ Connection Configuration Database
- ▶ Samples
 - GeoXH
 - TSC2 (Access) R8
- ▶ Questions?

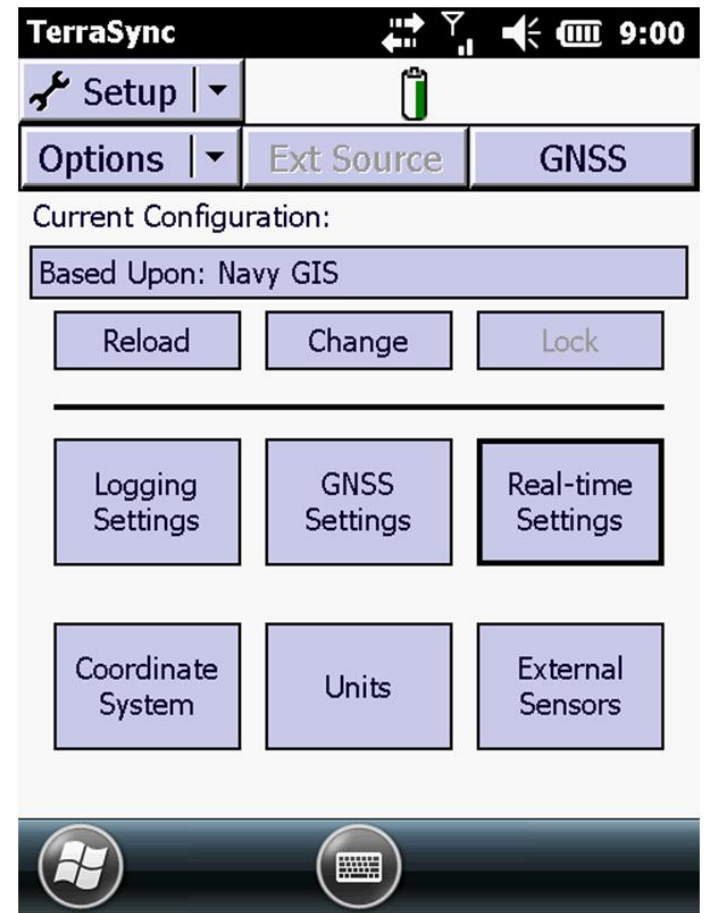
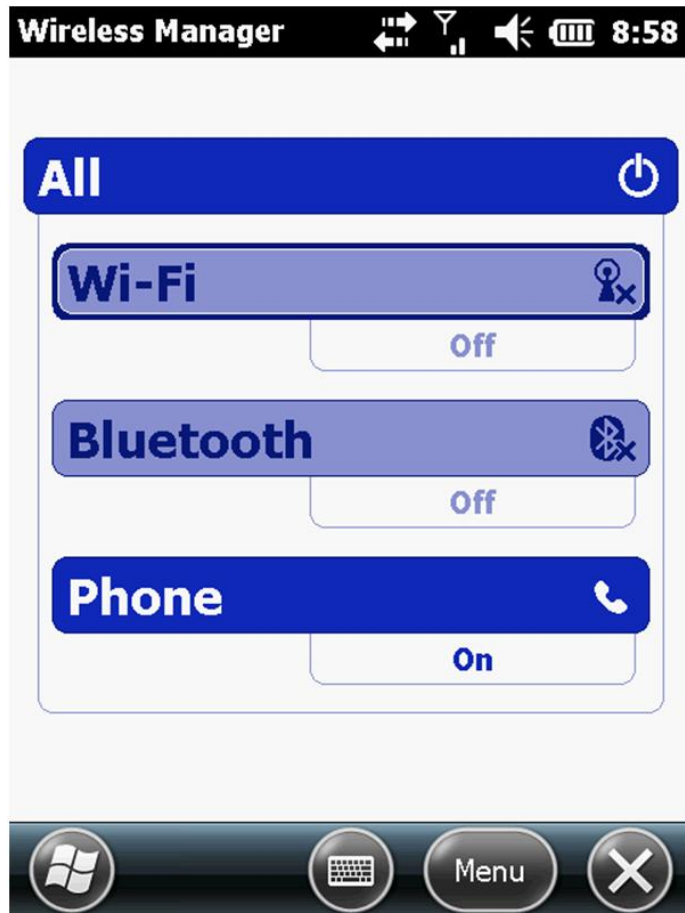


Mapping Unit (GeoXH 6000)

- ▶ 10cm and 1cm versions
- ▶ GIS Mapping
- ▶ SIM Chip Cell Phone Internal



GEOXH 6000



GEOXH 6000



GEOXH 6000

TerraSync 9:01

Setup

External Source Settings

Correction Datum:
NAD 1983 (Conus)

Type: Single Base

Connection Method: Internet

Address:
132.239.152.74

Port: 2103

Done Cancel

TerraSync 9:01

Setup

External Source Settings

Source: WHYT_RTCM3

User name:
KDMCrew1

Password:

Connection Control: Auto

Real-time Protocol: Auto

Station ID: Any

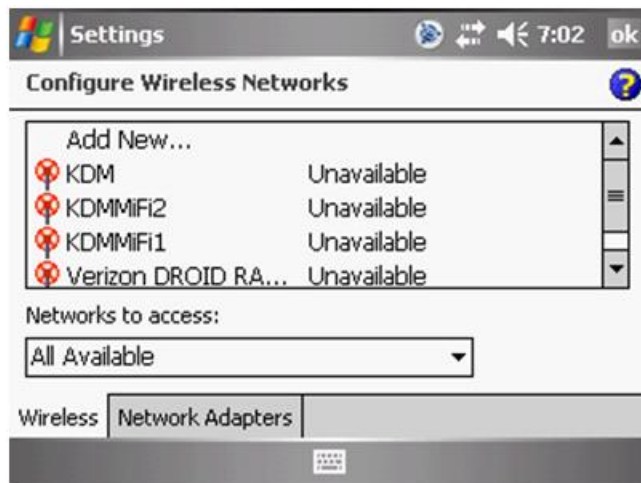
Done Cancel

Survey Unit (TSC2 Access/R8)

- ▶ Survey Grade Receiver
- ▶ WiFi Data Collector
- ▶ WiFi Cell Device



TSC2 Access WiFi



TSC2 Access WiFi

Connect

Internet Setup

GNSS contacts

Auto connect

Radio settings

Bluetooth

Back

GNSS contacts

Name	Type
CAL VRS	Internet rover
CRTN	Internet rover
OCRTN	Internet rover
SMARTNET CA	Internet rover

Esc New Delete Copy Connect Edit

Edit GNSS contact

Name: CRTN

Network connection: Auto (Wi-Fi, Modem, ActiveSync)

1/3

Esc Test Config Store

Edit GNSS contact

NTRIP Configuration

Use NTRIP: ☒ Use NTRIP v1.0: ☐

Use proxy server: ☐

Connect directly to Mountpoint: ☐

NTRIP username: KDMCrew2 NTRIP password: *****

2/3

Esc Test Config Store

TSC2 Access WiFi

Edit GNSS contact

IP Address: IP Port:

Send user identity info:
☐

3/3

Esc Test Config Store

Bluetooth

Connect to GNSS rover: Connect to GNSS base:

Connect to conventional instrument:

Connect to laser: Send ASCII data to:

Connect to echo sounder: Automatically enable Bluetooth: ☒

Esc Config Accept

Survey Styles

Name	Size	Modified	Location
CAL VRS	2kb	7/23/2012	\Trimble
CRTN	2kb	7/23/2012	\Trimble
FastStatic	2kb	8/10/2012	\Trimble
I-CAL VRS	2kb	7/23/2012	\Trimble
I-CRTN	2kb	7/23/2012	\Trimble
I-OCRTN	2kb	7/23/2012	\Trimble
I-SMARTNET	2kb	7/23/2012	\Trimble
OCRTN	2kb	9/14/2012	\Trimble
PRK	2kb	7/23/2012	\Trimble

Esc New Copy Delete Options Edit

CRTN

Rover options

- Rover radio
- Base options
- Base radio
- Topo point
- Observed control point
- Rapid point
- Continuous points
- Stakeout
- Site calibration
- Duplicate point tolerance
- Laser rangefinder

Esc Store Edit

TSC2 Access WiFi

Rover options [Navigation icons] [?] [—] [X] [100% battery]

Survey type:
RTK [v]

Broadcast format:
RTCM RTK [v]

Elevation mask:
10° [▶]

PDOP mask:
6.0 [▶]

[Map] [Menu] [Favorites] [Switch to]

1/3 [v]

Esc [Input field] Accept

Rover options [Navigation icons] [?] [—] [X] [100% battery]

Tracking

Use L2e: **Yes**

GPS L2C: ☐

GLONASS: ☒

[Map] [Menu] [Favorites] [Switch to]

3/3 [v]

Esc [Input field] Accept

Rover options [Navigation icons] [?] [—] [X] [100% battery]

Antenna

Type:
R8 GNSS/SPS88x [v]

Measured to:
Bottom of antenna mount [v]

Antenna height: **2.000m** [▶] Part number: **60158-00**

Serial number:
? [v]

[Map] [Menu] [Favorites] [Switch to]

2/3 [v]

Esc [Input field] Accept

Rover radio [Navigation icons] [?] [—] [X] [100% battery]

Type:
Internet connection [v]

Route through controller:
Yes

GNSS Contact:
CRTN [▶]

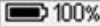
Prompt for GNSS contact:
☐

[Map] [Menu] [Favorites] [Switch to]

Esc [Input field] Accept

TSC2 Access WiFi

Observed control point

Auto store point: ☒ Quality control: **QC 1 & QC 2** 

RTK

Number of measurements:

Precision

Auto tolerance: ☒

Map
Menu
Favorites
Switch to

1/2

Esc Accept

New job: CRTN-PRES

Job name: 

Template: **ZONE 6 (OC. R/V. SAN D. IMP)**

Properties

Coord. sys.: **California Zone 6 0406 (US Sta**

Units (Dist.): **US survey feet**

Linked files: **None**

Active map: **None**

Feature library: **None**

1/2

Esc Accept

Observed control point

Postprocess

Time for 4 SVs: Time for 5 SVs:

Time for 6+ SVs:

Map
Menu
Favorites
Switch to

2/2


Esc Accept

New job


Cogo settings: **Ground**


Descriptions: **Off**

Media file: **Previous point**

Reference: 

Description: 

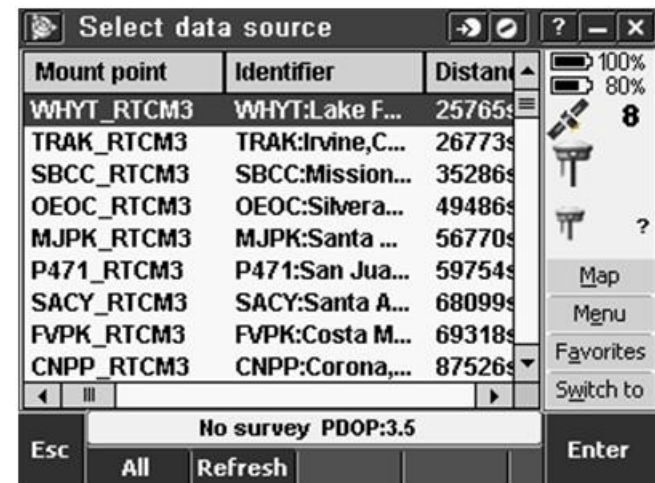
Operator: 

Notes: 

2/2

Esc Accept

TSC2 Access WiFi



Samples / Questions

- ▶ Connection Configuration Database
- ▶ Samples
 - GeoXH
 - TSC2 (Access) R8
- ▶ Questions?

