SURVEY/GIS



Date:	May 18, 2005
Product:	Z-Max
Subject:	Firmware Release Maintenance Version MC00
Number:	ZMax2005_05

Introduction :

The Z-Max maintenance version MC00 is a no cost firmware update. It fixes some firmware bugs that have been reported by users, dealers or Thales Navigation Technical Support.. New functions have also been implemented making the Z-Max operation easier and more flexible, like outputting base RTK message on 2 ports simultaneously, estimating the base line length when logging raw data for post-processing purposes.

Upgrade procedure :

The upgrade procedure is as follows :

- Copy the ZA00MC00.BIN from your hard disk into the SD card. The file ZA00MC00.BIN can be downloaded from Thales Navigation ftp site at :

ftp.thalesnavigation.com

- Insert the SD card into the Z-Max. Caution: make sure that the Z-Max is powered off before inserting the SD card into the Z-Max.
- Make sure that the Z-Max battery module is fully charged. To do so, press the button on the back of the Z-Max battery module, the 4 LED's on the size of the module must be green. You may also use an external power supply.
- Hold down the up arrow button for few seconds while switching the Z-Max on.
- You should see the following message on the Z-Max screen :

'Loading Thales Firmware, Stage 1'

and few second later, 'St#1 37'

The value on the right part of the screen decreases until it reaches 0.

The process will continue in Stage 2 and so on.

The upgrade is divided in 5 stages corresponding to the different parts of the Z-Max. It lasts about 1 minute.

At the end of the upgrade the Z-Max automatically reboots and goes to SYSINFO menu. To check the version, press the 'Enter' button. The Z-max displays then:

VER:MC00.

Note that some stages may be skipped if no battery module (Stage 1) or no communication module (Stage 2) is attached to the Z-Max.

Firmware modifications since MB00:

1. The Z-Max base is able to broadcast RTK messages on two different ports simultaneously. This allows the transmission on 2 different communication means.

For **Base operation**, the following command was modified to generate DBEN/CMR/CMR+ on 2 ports simultaneously :

\$PASHS,CPD,PRT,c1,c2 where c1 an c2 are the port com number, A,B or D.

For **Rover operation**, the receiver will automatically detect between DBEN, CMR or CMR+.

The available Base transmission configuration are as follows :

DBEN - DBEN CMR - CMR CMR+ - CMR+ DBEN - RTCM CMR - RTCM

Note : the first mode is transmitted by GSM, the second by radio

- 2. The Z-Max rover compatibility with CMR and CMR+ formats has been enhanced. The Z-Max has been tested with Trimble 5800/5700 and Trimble 4700 receivers.
- 3. When reprogramming the PDL radio, the transmission mode is not changed, only the channel number, Link speed, Sensibility are changed according to the user's choice.
- 4. The Z-Max rover is now fully operational with Aquarius or Scorpio LRK base message.

5. The "Desired Vector length" function is now operational when logging rawdata. The user may enter the base line length, the Z-Max will then warn the user whether there is enough data logged in memory providing a more efficient occupation time on the field. If no value is entered in the "Desired Vector length" field, this display works as an "observation timer". The Observation Timer examines the collected satellite data to estimate when enough data has been collected to ensure a quality position when the data is processed. 6. The RTK engine has been improved for better and shorter initialization time on long base line.

Known bugs or none-compatibilities:

- 1. The Z-Max base is not fully compatible with Trimble 4700 receivers. It works perfectly in base or rover modes with the latest Trimble receiver versions.
- Z-Max and Thales Navigation radio: When working with Thales Navigation radio, the Z-Max base does not re-start properly after a power cycle. Workaround : using the onboard keyboard, go to COM OPTN/THALES RADIO/Baud Rate and select 19.2k instead of 9600, or re-configure the base with FAST Survey.
- 3. Z-Max Base and PDL Radio :

If the PDL radio com port has been setup at 19200bps, which is Thales Navigation factory default settings, the keyboard communication with the radio is not possible after a power cycle. When going to COM OPTN/PDL/LOAD, the receiver prompts a "communication error" message due to a bad com. port speed (9600 instead of 19200).

Workaround : using the onboard keyboard, go to COM OPTN/PDL/Baud Rate and select 19.2k instead of 9600.

Note that the Z-Max base re-starts properly after a power cycle and as far as the user does not go to COM OPTN/PDL/LOAD.

The radio baud rate (com port D) is correctly saved in rover mode.