User's Manual for InsMon

Tamagawa Seiki Co., Ltd.

Table of Content

1.	Scope	3
2.	Preparation of items	3
3.	Applicable Model	3
4.	Startup and Baud rate	4
5.	COM port change	5
6.	Baud rate change	7
7.	Measurement	8
	Frequency change	
	Data save	
10	. Command input1	1

1. Scope

InsMon is communication software for three-axis inertial measurement unit.

2. Preparation of items

Before use, please check 5 items below in advance.

- 1) PC (OS Windows 10 or previous version)
- 2) RS232 cable (specified by each model or equivalent)
- 3) Power supply cable (specified by each model or equivalent)
- 4) USB-RS232 conversion cable (unnecessary for PC loaded with COM port)
- 5) Communication Software InsMon

3. Applicable Model

- 1) AU7428 Series including cased TAG244 $\,$
- 2) AU7554 Series including cased TAG250 $\,$
- 3) AU7498 Series
- 4) AU7595 Series including cased TAG247 and TAG264 $\,$
- 5) AU7615 Series including cased TAG265
- 6) AU7684 Series including cased TAG300

4. Startup and Baud rate

- 1) Please execute "Insmon.exe." The screen in figure 1 is displayed.
- 2) Press the VER button in the red frame to check the communication. The send-command is displayed in green on the terminal screen.
- 3) If succeeded, software version is displayed in blue on the screen. If no response, communication is not established.
- 4) If communication is not established, please refer to the chapter 5 COM port change in this manual.

ද් Insmon COM5	
File(F) View(V) Communicate Window(W) Help(H)	
Terminal Monitor3 Status	COM Log 19070200.LOG Save
SAV > 方位角RST> OFC > キャリプレーショ> CAL_リセット> 7ライメント> /	ALN_リセット > 更新周期 > VER >
ARST >	
FastDisp	
ready	C C C C C C C C C C C C C C C C C C C
reauy	SCRL /

Figure 1. Startup screen

- 5. COM port change
 - 1) Confirm the COM port which you are currently connected.
 - 2) Open the OS device manager and check the port COM and LPT. If you are using a USB cable, the display "USB Serial Port" is added, and the COM number is displayed. In the example in Figure 2, the COM number is "COM 3 ".
 - 3) In case of COM 100 (3 digits) or more, the connection is not established. In that case, please change the COM port to be lower than COM99.

1	Device Manager	- 🗆 X
File Action	View Help	
� � ☴	💈 📷 💐	
 Mon Mon Network Port 	vork adapters s (COM & LPT) Communications Port (COM1) JSB Serial Port (COM3) c queues	^
	ost adapters urity devices ors	~

Figure 2. Device Manager

- Insmon COM5 _ 🗆 🗙 File(F) View(V) Communicate Window(W) Help(H) Terminal Status COM Log 19070200.LOG - Save Disconnect *レーショ~〉_CAL_リセット~>__アライメント~>__ALN_リセット~>__更新周期~>___VER > Communication setting Send Command Line 🖉 Terminal - • × Communication setting request ▼ _____ Send 🔽 FastDisp Save the communication log SCRL
- 4) Reopen the InsMon and click the "Disconnect" button in communicate tab.

5) After disconnection, click the "Communication setting" button in Communicate tab. Input the COM port which you are currently using.

ort	COMB	•	OK
audRate	115200	•	Cancel
ata bit	8	-	
arity bit	NO	-	
top bit	1	-	

- 6) Click the "Connect" button in Communicate tab to restart operation.
- 7) Please execute the chapter 4. Startup and Baud rate and see if there is a response of VER command.

6. Baud rate change

The initial setting of baud rate is 115.2kbps. In normal use, no need to change baud rate. In case the initial baud rate is not suitable to the environmental condition, please change the baud rate accordingly.

- 1) Please execute "Insmon.exe." and open InsMon. Note that data reception needs to be suspended during this period.
- 2) With the IMU powered on and connected, press the "COM" button. The following screen will be displayed.

F Insmon COM5			
File(F) View(V) Comm	nicate Window(W) Help(H)		
Terminal	Monitor3 Stat	tus COM	Log 19070200.LOG 🗆 Save
SAV	· ∫ 方位角RST > OFC > キャリフ*レーショ > ARST >	CAL_U2+1 > 751x21 > ALN_U2+1	communication setting request
🖉 Terminal			L
\$TSC,VER*29 \$TSC,VER,TAG250Nxx	00 Ver.1.10.1*60	▼ Send	
Communication setting re-			

BaudRate	115200	•	OK
Data bit	8	•	Cancel
Parity bit	NO	•	

- 3) Change the setting of BaudRate and Data bit to be desired and press OK.
- 4) Power on and restart IMU.
- 5) Press "AUTO" in COM Command Tab to complete the connection.
- Note: The initial setting of baud rate is 115.2kbps. The frequency is 100 Hz max for GPS type, 200 Hz max for other models. If the baud rate is lowered, communication is not performed in maximum frequency. In that case, lower the frequency to suitable level.

7. Measurement

- 1) Please execute "Insmon.exe." and startup InsMon.
- 2) Push "monitor 3" and following screen is displayed. (Screen is different depending on model)

7 ⁻ Insmon COM5	
File(F) View(V) Communicate Window(W) Help(H)	
Terminal Monitor3 (2) Status	Log 19070200.LOG 🕅 Save
SAV > 方位角RST >OFC <mark>monitor 3</mark>) ^{* レージョ} >CAL_リセット >7ライメント > ARST >	>】_ALN_Uセット >】_更新周期 >】YER>
F Monitor3	
LogFileName #19070200.BIN 🗆 Save Req. 👌 భ >	
ステータス エラー <mark>なし</mark> 演算 なし NAV 通常	
カウンタ GPS時刻 [r ステータス GPS緯度 [* X軸角速度 [* /s] GPS経度 [*	ns] ^] ^]
] n/s]
Y軸加速度 [m/s2] GPS衛星数 [f	
Z軸加速度 [m/s2] GPS PDOP [n][n	n]
fonitor 3 Display	

Figure 3. Measurement

- 3) Turn on IMU. If the device operates normally, the LED flashes green.
- 4) Press "Req." button to start data reception. Each sensor will be measured and displayed on the screen. Please push the "Stop" button when you finish measurement.

8. Frequency change

1) Press the ">" button to the right of the "Req" button.

Tinsmon COM5 - [Monitor3]
File(F) View(V) Communicate Window(W) Help(H)
Terminal Monitor3 Status COM Log 19070200.LOG Save
SAV > 方位角RST > 0FC > キャッフ ^ッ レーショ> CAL_リセット> 7ライメント > ALN_リセット> 更新周期> VER >
ARST
LogFileName #19070200.BIN Save Req. [(st)e >
ステータス エラ <mark>イ なし</mark> 演算 <mark>「なし」</mark> NAV <mark>通常</mark>
カウンタ ステータス (軸角速度 [*/s] GPS時刻 [ms] (中角速度 [*/s] GPS高度 [*] (中角速度 [*/s] GPS高度 [m] (中加速度 [m/s2] GPS高度 [m/s] (中加速度 [m/s2] GPS衛星数 [個] (中加速度 [m/s2] GPS PDOP [m] コール角 [*] だッチ角 [*]
eady

- 2) Command Edit is displayed on the screen.
- 3) "Freq," in Figure 4 shows the current setting of frequency. Change the setting of frequency to be desired and press "send".

Command Ed	lit	X
Title	Req.	ОК
Command	BIN	Cancel
Freq.	200	Send
🔽 Add Chec	ksum	T ACK check



Note: The frequency that can be received is the values obtained by dividing 200 by an integer. For example, 200, 100, 66, 50..., etc. If you input such as 150Hz, the value is automatically changed to 100Hz. 75Hz is automatically changed to 66Hz. In case of less than 1Hz, 0.5Hz, 0.2Hz, and 0.1Hz are available.

9. Data save

- 1) Input the title of file and click the save checkbox. Only BIN file can be used.
- 2) Press the "Req." button and start data reception. Press "Stop" button when you finish measuring. The data is created in the same folder as the exe file.
- 3) After the data reception, you can convert a BIN file into csv file by Binary to Text Convert in File tab. You can also change the data conversion rate which initial setting 1.

S Insmon COM5 - [Monitor3]					
File(F) View(V) Communicate Window(W) Help(H)					
Binary to Text Convert	(ኳ)itor3	Status	COM Log 19070200.LOG T Save		
Exit(X)	> OFC	> ++	7ライメント > ALN_Uセット > 更新周期 > VER >		
	ARST >				
LogFileName #19070200.BIN	[√(\$<u> </u>4))e Req. > 	Stop >			
ステータス エラープ	こし 演算 な	NAV 通常			
カウンタ 「		GPS時刻	[ms]		
ステータス		GPS緯度	[*]		
X軸角速度 Y軸角速度		GPS経度 GPS高度			
「軸角速度」		GPS方位	[m] [^]		
X軸加速度	[m/s2]	GPS速度	[m/s]		
Y軸加速度		GPS衛星数	[個]		
Z軸加速度 ロール角	[m/s2]	GPS PDOP	[m]		
ピッチ角	[*]				
方位角	[*]				

Binary to Text Con	vert	×
BINARY	U7684N1 x00_TAG300N1 x00_BINV1 9070200.BIN Ref	Convert
Definition file	C:¥Users¥p14019¥Desktop¥InsMon_AU7684N1xCRef	Cancel
Output Text	C:¥Users¥p14019¥Desktop¥InsMon_AU7684N1 xCRef	
-Convert Rate -C	Conversion situation	

10. Command input

- 1) With IMU being connected, press "Stop" button in monitor 3.
- 2) Press the "Terminal" button to open the screen, and enter the send command in the command field.
- Ex) Offset cancel command (time: 3 seconds): \$TSC,OFC,3

*Checksum is can be abbreviated.

🖉 Insmon COM5 - [Terminal]	
File(F) View(V) Communicate Window	(W) Help(H)
Monit	or3Status
SAV > 方位角RST>	OFC > キャリフ [*] レージョ > CAL_リセット > アライメント > ALN
ARST >	
	💌 Send 🔽 FastDisp
\$TSC, VER*29 \$TSC, VER*29 \$TSC, VER*29	Command input field
\$TSC,VER*29	
\$TSC, VER*29	
ready	SCRL