

FURUNO GNSS Receiver

GT-100 Evaluation Kit VN-100T

Operation Manual

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FURUNO ELECTRIC CO., LTD.

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Revision History

No.	Contents	Date
0	First Release	2022.08.22
1	Correct specifications in Timing Interface and Antenna Interface	2022.10.26
2	Add IMPORTANT NOTICE Change Main Unit picture and antenna picture Change the list of components Change the antenna specifications Change chapter 4 Change the block diagram in chapter 5 Add chapter 7	2023.07.14




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1 Introduction

This document is the specifications and operation manual of the evaluation kit (model: VN-100T) equipped with the dual-band GNSS receiver Module GT-100.

2 List of components

<p>1. Main Unit (VN-100T) :1</p>  A photograph of the main unit, a black PCB populated with various electronic components, housed within a clear acrylic enclosure. The board features several gold-plated SMA connectors on the front edge and a USB port on the side. Text on the board includes "Evaluation board for timing and clock" and "No. 234820216".	<p>2. Dual-band GNSS Antenna :1</p>  A photograph of a dual-band GNSS antenna. It consists of a small, square, black metal enclosure with a circular cutout on the front, connected to a black coaxial cable with a gold-plated SMA connector at the end.
<p>3. USB Cable :1</p>  A photograph of a black USB cable. One end has a standard USB-A connector, and the other end has a USB-B connector.	

3 Product Specifications

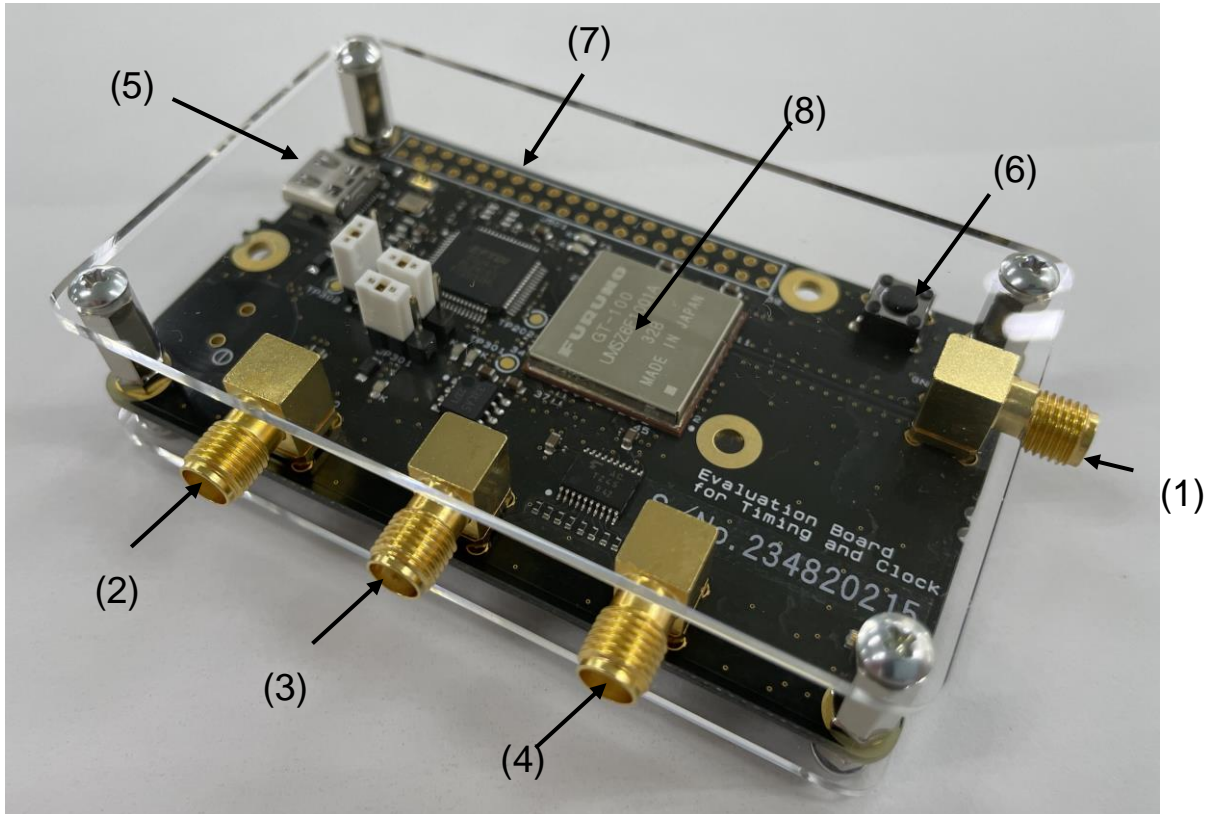
VN-100T

Items	Specifications
Size	(W)86mm x (D)51mm x (H)21mm (Excluding the protruding SMA connectors)
Weight	67g(typ)
Serial Interface	USB 2.0
Timing Interface	SMA-J High level >2.4V, Low level <0.8V (50Ω termination)
Antenna Interface	SMA-J, Superimposed DC +3.3 V
Power Supply	USB DC+5V, 250mA or less
Operating Temperature	-10°C to +45°C

Dual-band GNSS Antenna

Items	Specifications
Cable Length	3m
Connector	SMA-P
Input Frequency	L1: 1557 MHz-1606MHz L5: 1164MHz-1189MHz
GAIN	35dB (typ)
NF	2.5dB (typ)
Power Supply	DC+3.3V~+5.0V、17~23mA
Water Resistant	IP67

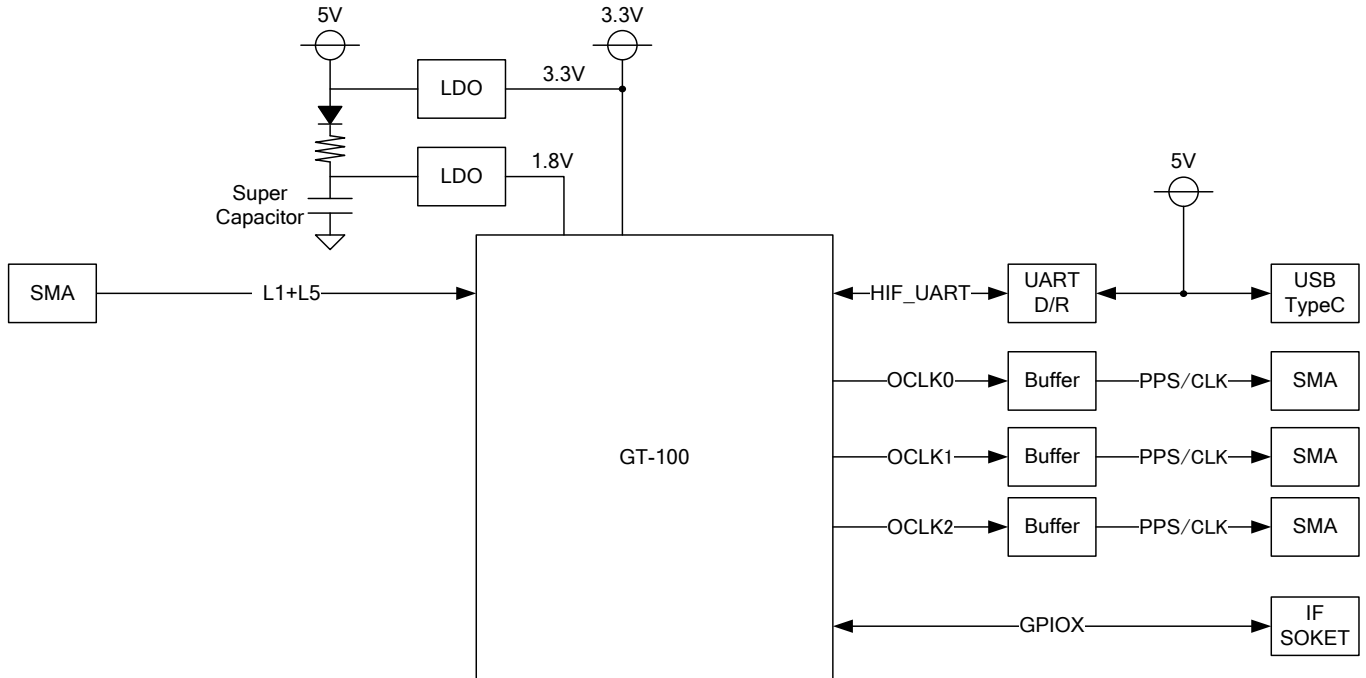
4 Part names and Functions



	Name	Type	Description
(1)	ANT	SMA-J	Connect the attached dual-band GNSS antenna. It is superimposed with a 3.3V DC voltage.
(2)	OCLK0	SMA-J	The GT-100 OCLK0 signal is output from this pin. In default there is no command set, 1PPS is output when GNSS signal is received. It becomes H level >2.4V at 50Ω termination.
(3)	OCLK1	SMA-J	The GT-100 OCLK1 signal is output from this pin. It becomes H level >2.4V at 50Ω termination.
(4)	OCLK2	SMA-J	The GT-100 OCLK2 signal is output from this pin. It becomes H level >2.4V at 50Ω termination.
(5)	USB	Type C	USB port for power supply and data communication. Use the attached USB cable to connect to PC.
(6)	RESET	-	Reset button
(7)	IF SOCKET	-	It is directly connected to the IO pin of GT-100, and is designed for waveform and operation checking. Please contact our sales for more details (ex. pin assignments etc.)
(8)	GT-100	-	GNSS chip, Filter, XTAL, TCXO and passive elements are mounted inside the case.

5 Block Diagram

The block diagram of VN-100T is shown below.

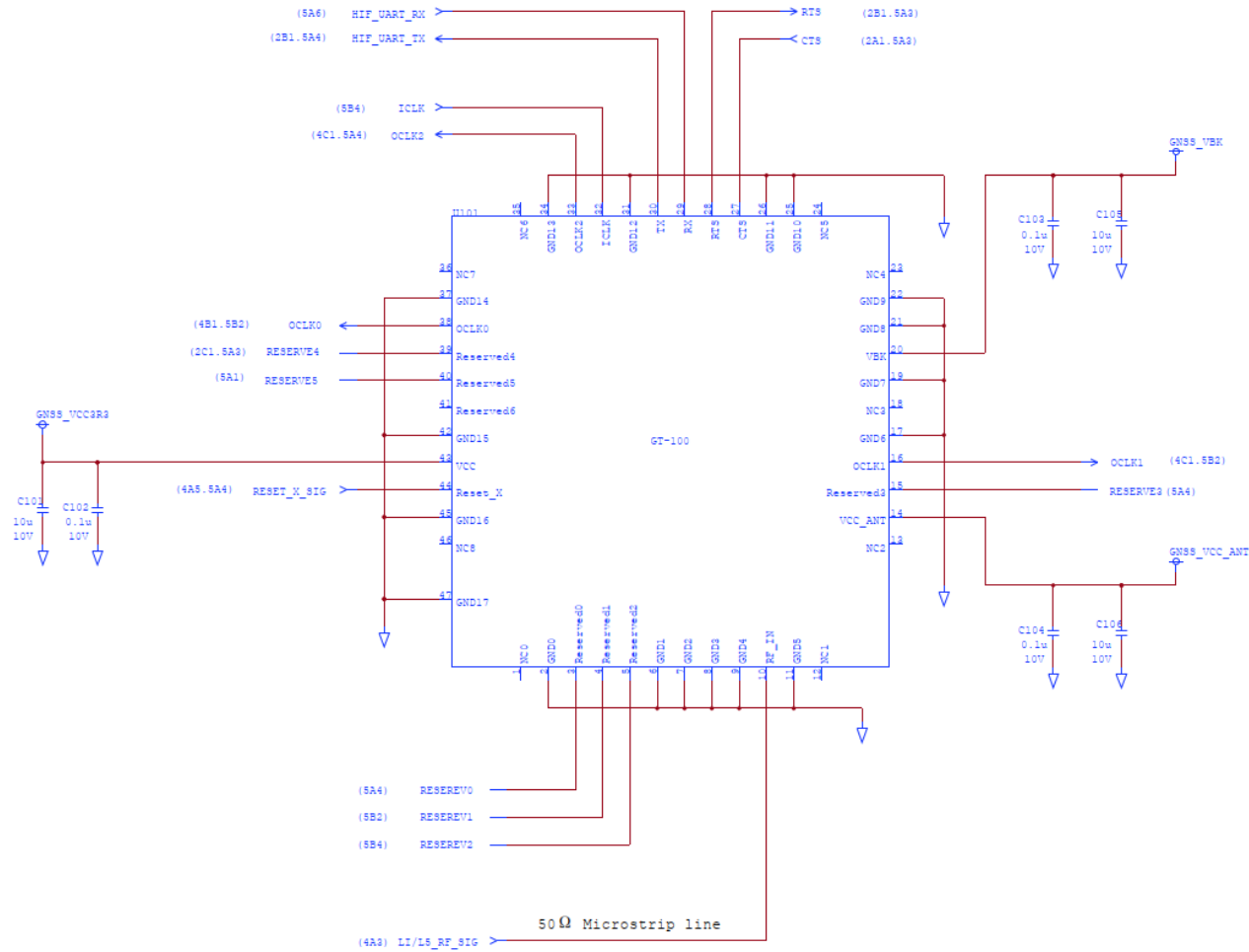


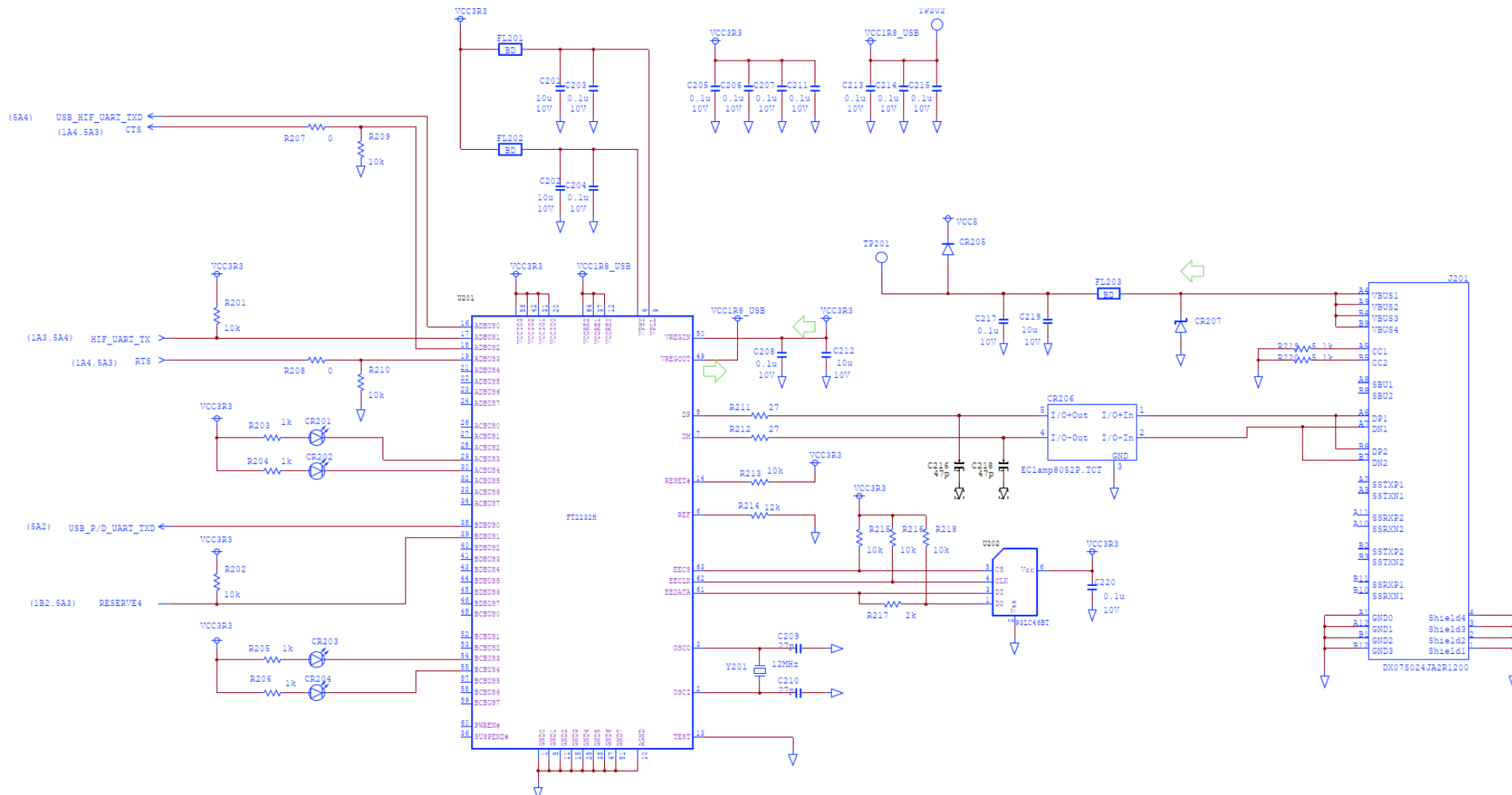
6 How to Operate

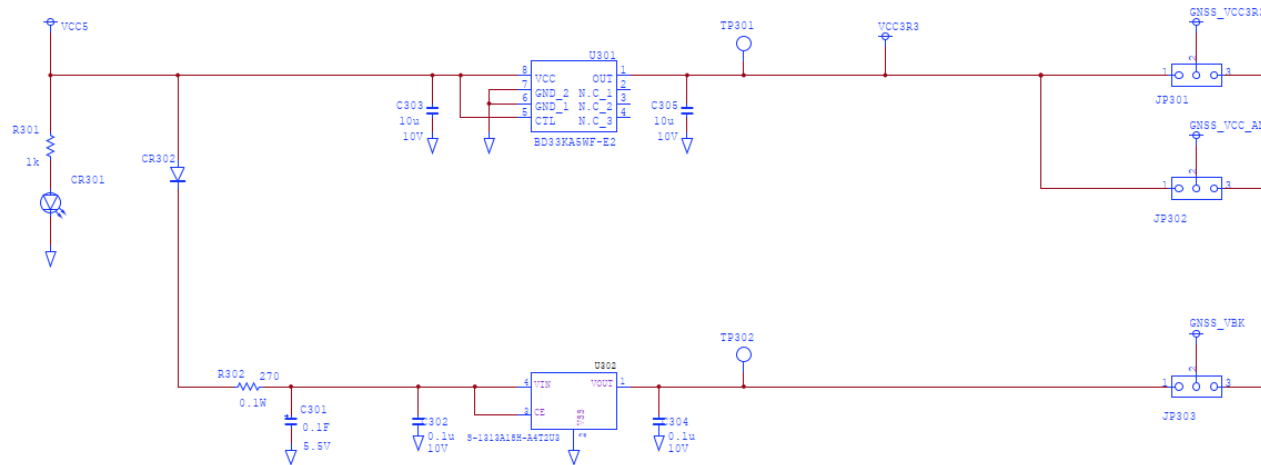
- (1) Install GNSS TIMING MONITOR and the Device Driver on PC.
- (2) Connect the attached antenna to the ANT of the evaluation kit.
- (3) Connect the evaluation kit to the PC with GNSS TIMING MONITOR installed via the attached USB cable.
- (4) Check the connection status of the evaluation kit from the Device Manager of the PC. If it is not recognized, install the device driver. (*)
- (5) Start GNSS TIMING MONITOR on the PC. (*)
- (6) Run the evaluation kit using GNSS TIMING MONITOR. (*)

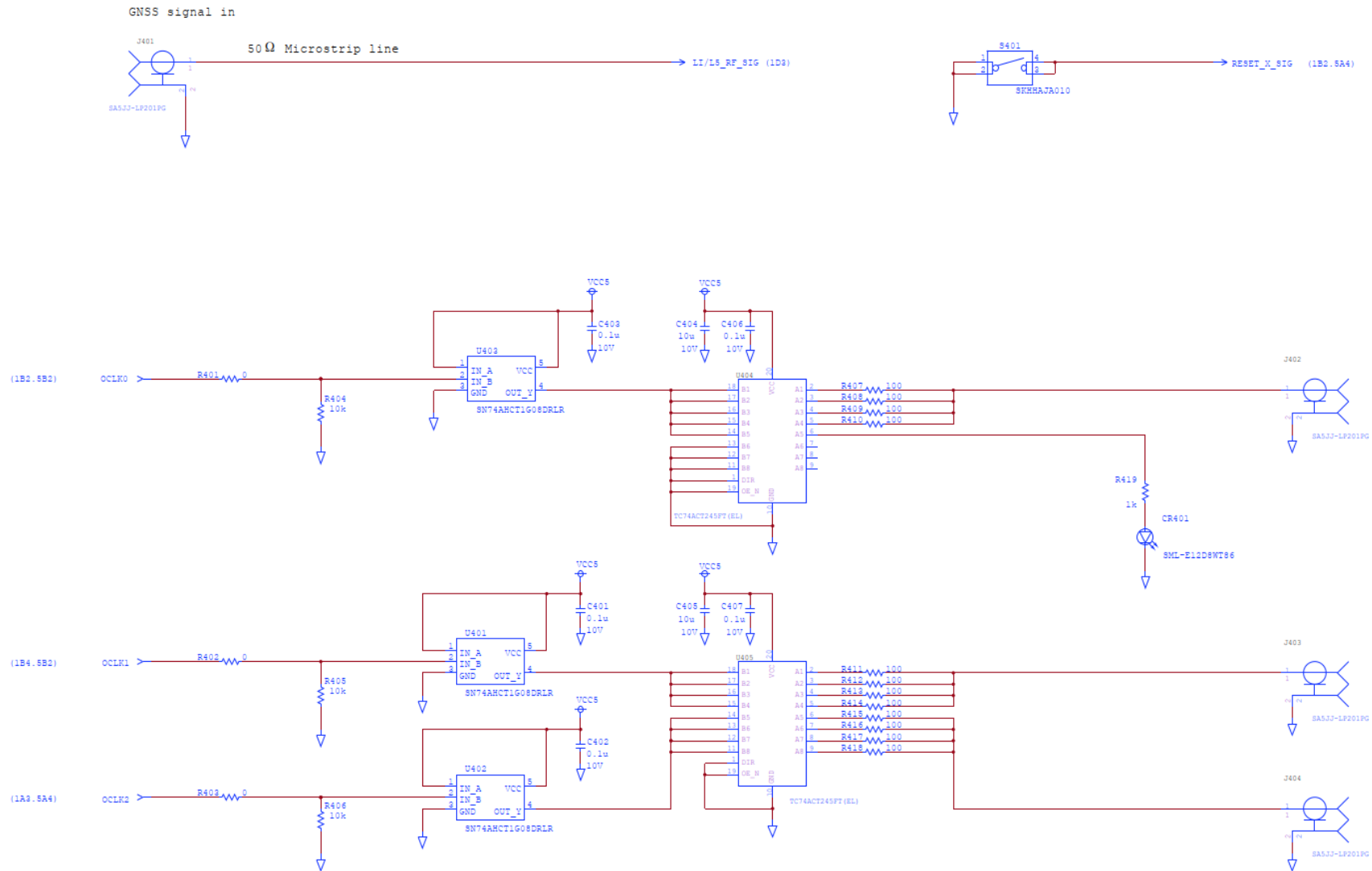
(*) Please refer to FURUNO GNSS TIMING MONITOR Operating Manual (SE22-900-001) for more details.

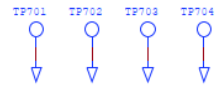
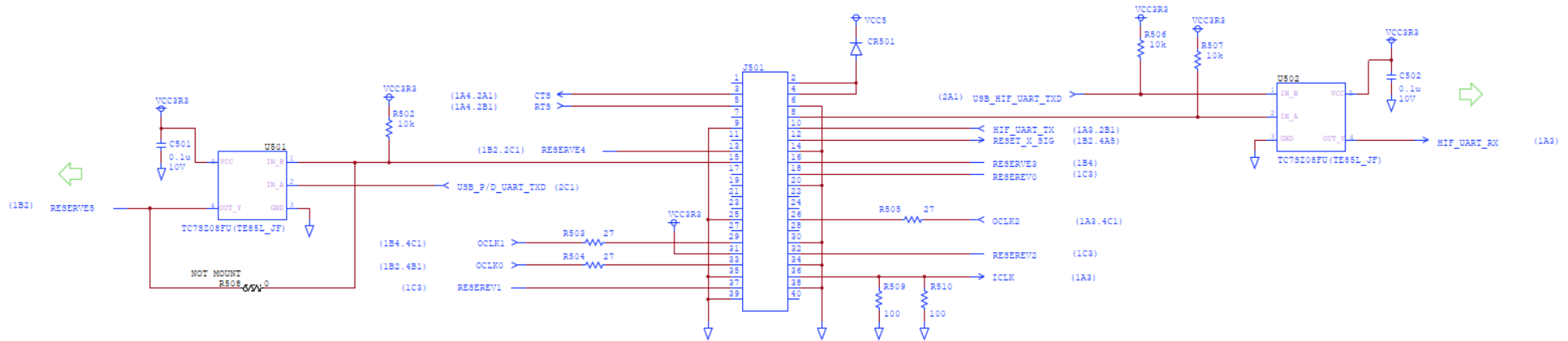
7 VN-100T Circuit Diagram











N.C	1	2	5.0V IN
CTS	3	4	5.0V IN
RTS	5	6	GND
N.C	7	8	RX
GND	9	10	TX
N.C	11	12	RESET_X
RESERVE4	13	14	GND
RESERVE5	15	16	RESERVE3
N.C	17	18	RESERVE0
N.C	19	20	GND
N.C	21	22	N.C
N.C	23	24	N.C
GND	25	26	OCLK2
N.C	27	28	N.C
OCLK1	29	30	GND
VCC_IO OUT	31	32	RESERVE2
OCLK0	33	34	GND
GND	35	36	ICLK
RESERVE1	37	38	GND
GND	39	40	N.C