

GEN3 MAIN TRANSCEIVER 3G/GPS PCB

DESIGNED: May 2016
 BY: RASTERVISION Ltd
 SCH REVISION: 4.0.0
 PCB REVISION: 564-05-04

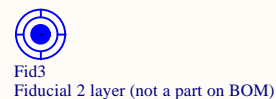
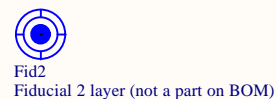
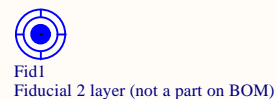
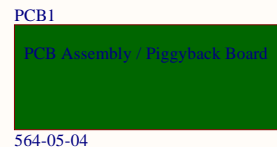
DESIGN MODIFICATION HISTORY:

PCB No 564-05-02 to 564-04-03 (Version 2 to Version 3):

- Changed SIM socket from Yamaichi to Amphenol (lower cost)
- Fixed SIM card detection fault (incorrectly attached to ESD device)
- Updated level translator IC modification (added bufer and FET)
- Changed Top & Bottom layers GROUND Plane polygon and moved it away from edges
- Moved as many Testpoints to Top Silkscreen layer as possible
- Upgraded all Testpoints to 0.5mm holes (for easier attachment of mods wires)
- Corrected PCB Name
- Adjusted Power & Ground Planes pullback on PCB edges

Colour schemes used for Signals/Info:

- Inputs / Bi-directional = Indigo
- Outputs = Orange
- Comm busses / Eval Notes = Green
- General information = Blue
- Important issues = Red

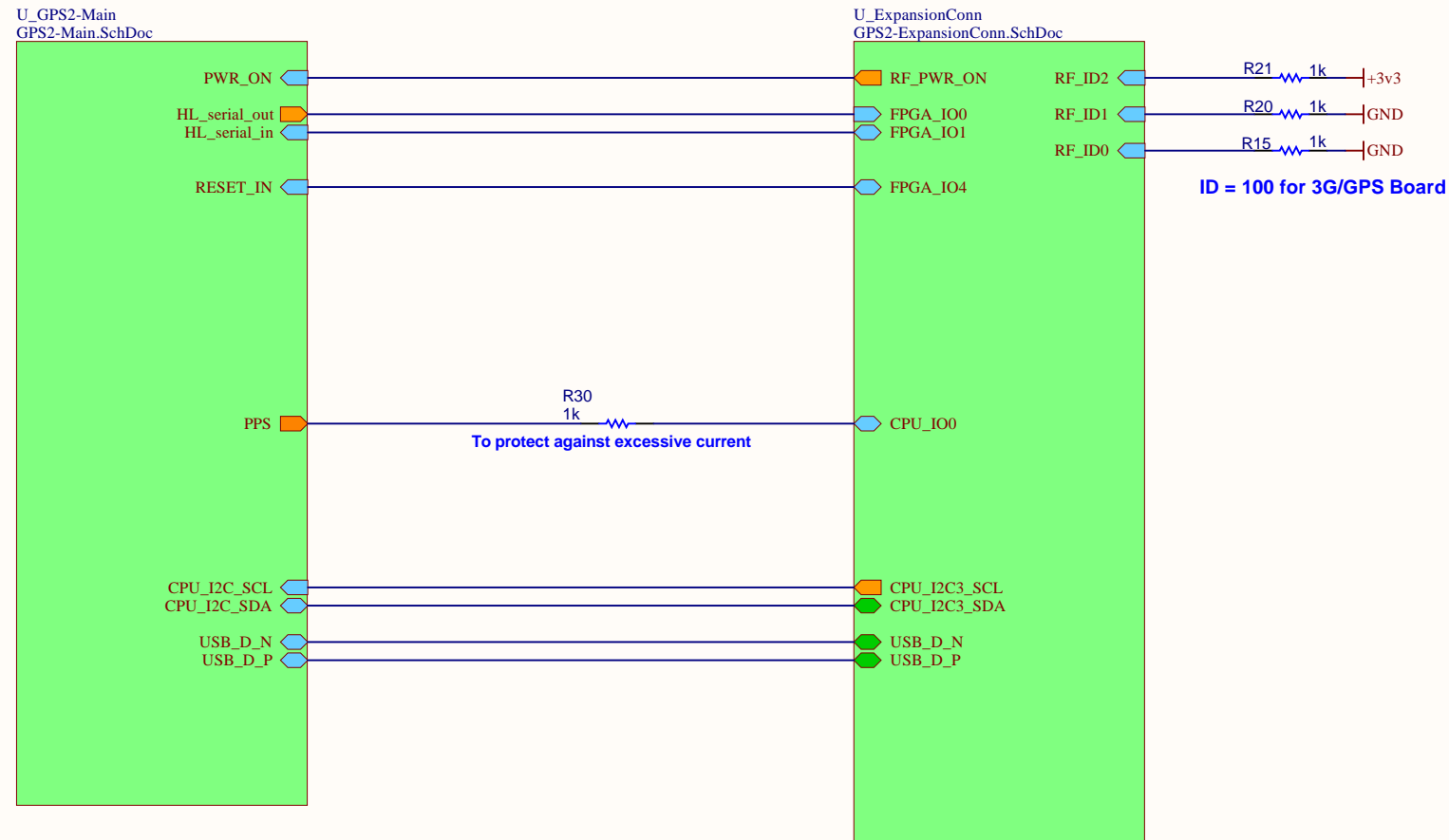


DESIGN COMPONENT CHOICES:

- All components have a minimum temperature range of -40/+85 C unless marked otherwise

Title	Gen3-3GBoard			RVL
Copyright	Michelin			Unit 1, Crundalls
By		Date		Gedges Hill
Dwn	R Penderis	May 2016	Number	Matfield
Chk	M Leman	May 2016	Revision	Tonbridge
App	P Smith	May 2016	Sheet	TN12 7EA
Client	Michelin		Printed	Tel : +44 (0)1892 722228
			Time	Fax : +44 (0)1892 724228
			Date	info@rastervision.co.uk
File:	GPS2-Mechanical.SchDoc			

Gen3 3G/GPS Module - TOP Level Block Diagram



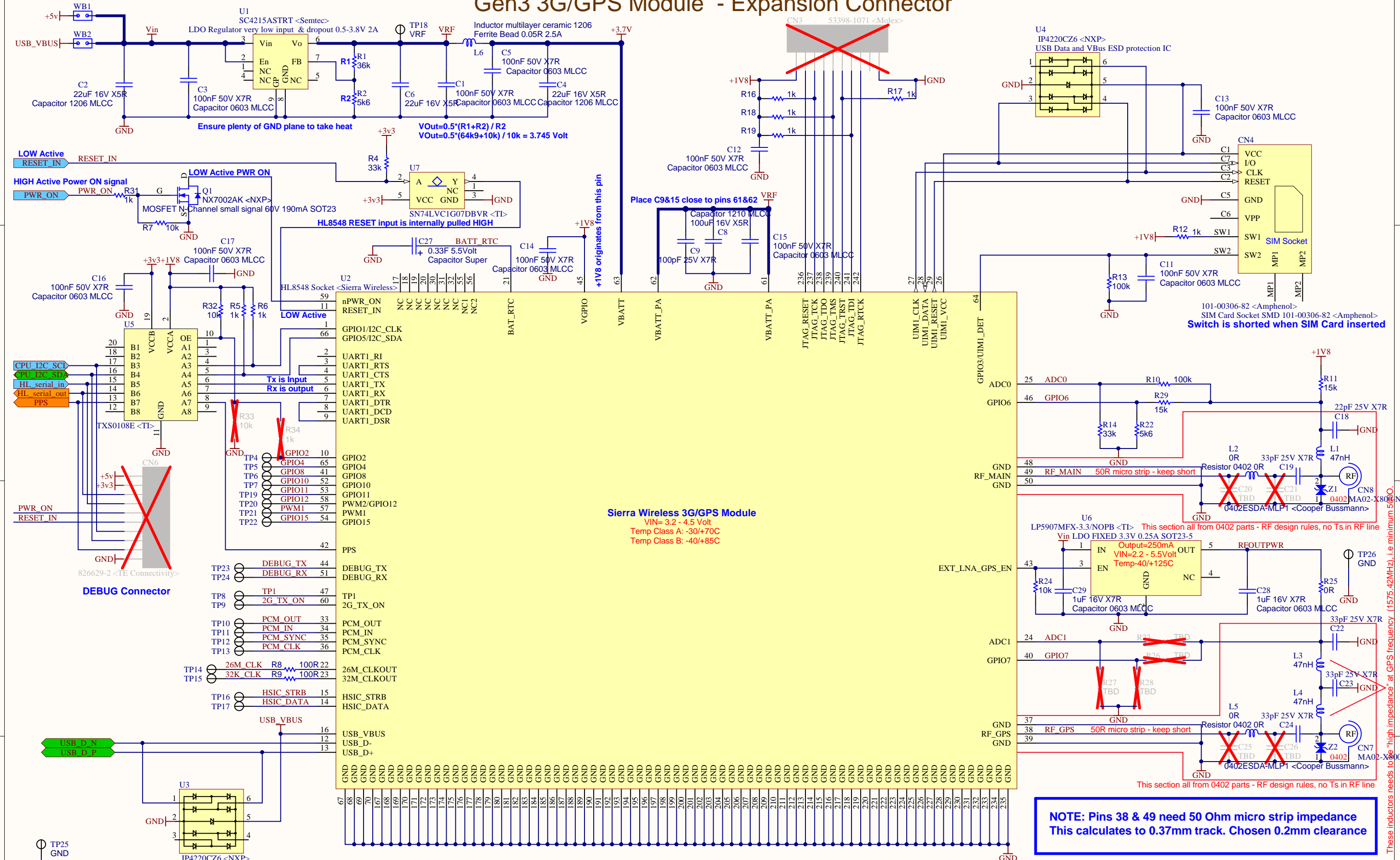
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GPS2-Mechanical.SchDoc

Contains ALL PCB Mechanicals

Title	Gen3-3GBoard			RVL
Copyright	Michelin			A3
By	Date	Number		
Dwn R Penderis	May 2016	Revision 4.0.0		
Chk M Leman	May 2016	Sheet 2 of 4		
App P Smith	May 2016	Printed 08/06/2016		
Client Michelin		Time 12:12:02		
File: GPS2-TopBlock.SchDoc		Date 08/06/2016		

Unit 1, Crundalls
Geddes Hill
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TN12 7EA
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Gen3 3G/GPS Module - Expansion Connector



LOW Active RESET_IN
HIGH Active Power ON signal

CPU I2C SCI
CPU I2C SD
HL serial in
HL serial out
PPS

DEBUG Connector

Sierra Wireless 3G/GPS Module
 VIN= 3.2 - 4.5 Volt
 Temp Class A: -30/+70C
 Temp Class B: -40/+85C

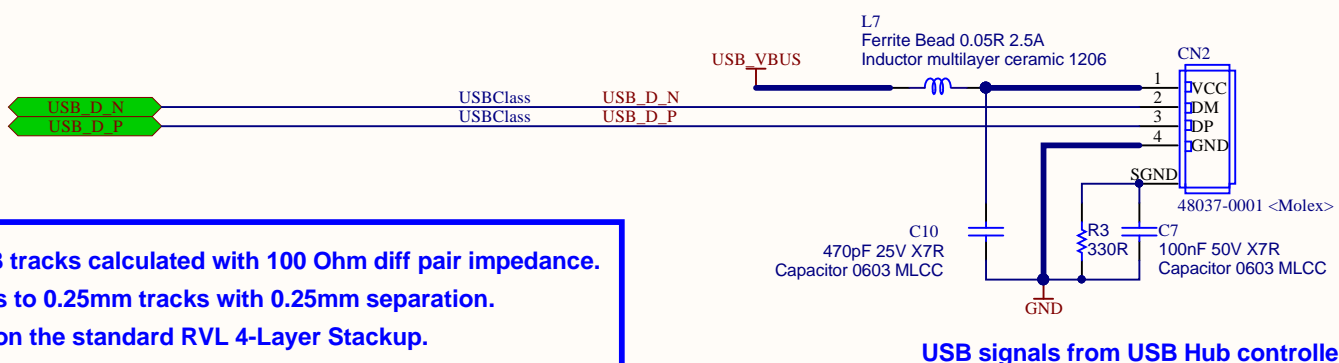
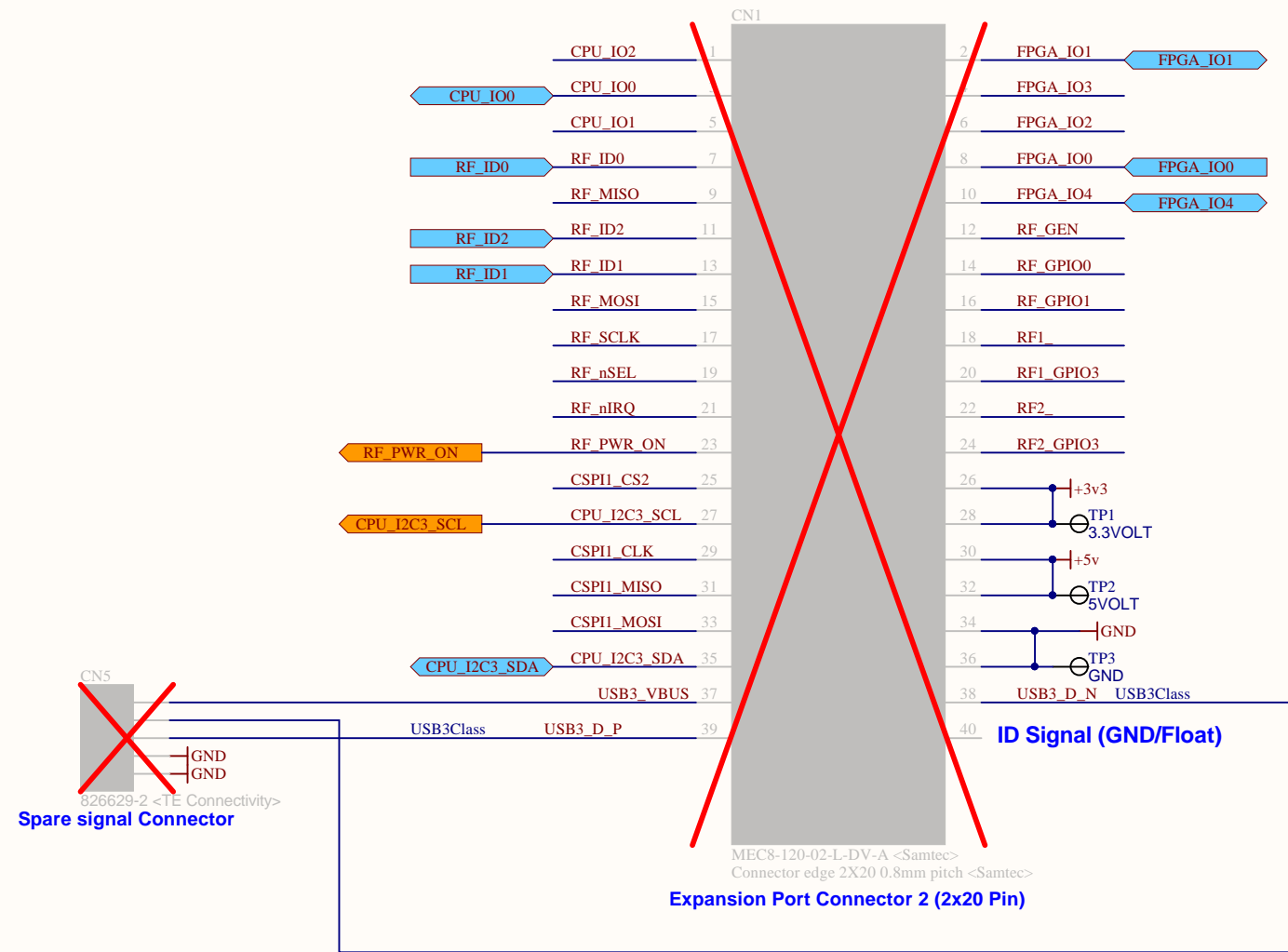
NOTE: Pins 38 & 49 need 50 Ohm micro strip impedance
 This calculates to 0.37mm track. Chosen 0.2mm clearance

NOTE: SUPERCAP Temperature Range is only -25 to +70 Celcius

Title Gen3-3GBoard				RVL	
Copyright Michelin				Unit 1, Crundalls Geddes Hill Matfield Tonbridge Kent, UK TN12 7EA Tel : +44 (0)1892 722228 Fax : +44 (0)1892 724228 info@rastervision.co.uk	
By				A3	
Dwn	R Penderis	May 2016	Number	3 of 4	
Chk	M Leman	May 2016	Revision	4.0.0	
App	P Smith	May 2016	Sheet	3 of 4	
Client	Michelin		Printed	08/06/2016	
			Time	12:12:03	
			Date	08/06/2016	
File:	GPS2-Main.SchDoc				

These inductors need to be high impedance at GPS frequency (1575.42MHz), i.e. minimum 50 Ohm

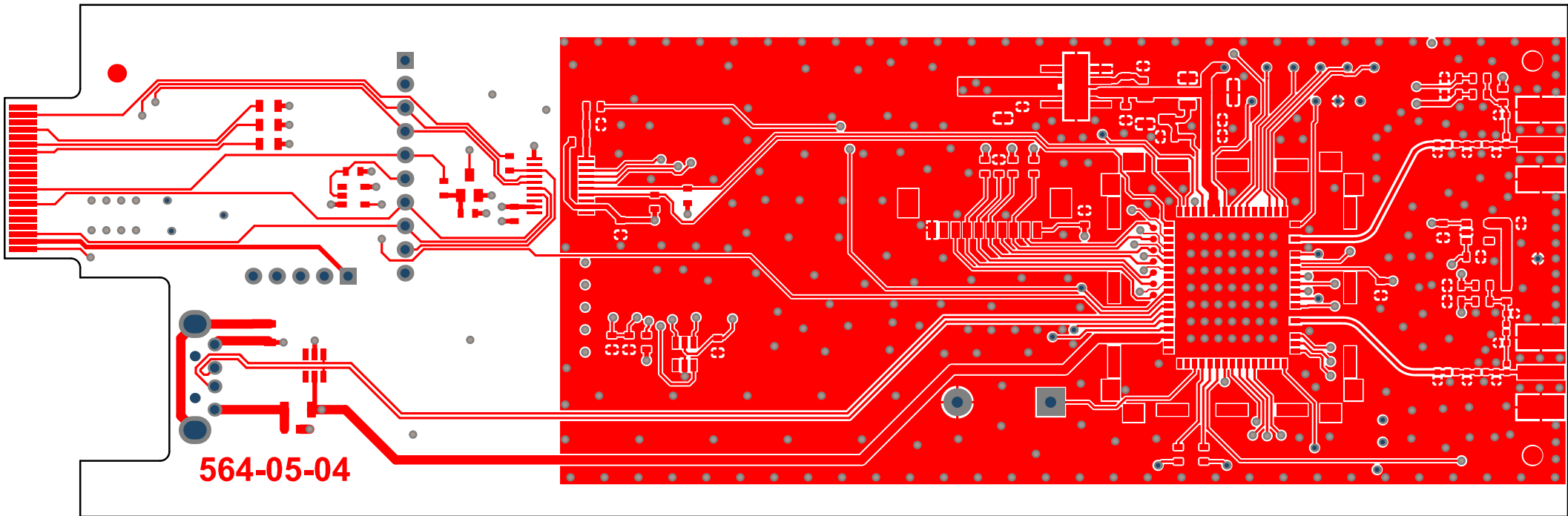
Gen3 3G/GPS Module - Expansion Connector



NOTE: All USB tracks calculated with 100 Ohm diff pair impedance. This calculates to 0.25mm tracks with 0.25mm separation. This is based on the standard RVL 4-Layer Stackup.

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Copyright	Michelin			A3
By	Date	Number	Revision	Unit 1, Crundalls
Dwn	R Penderis	May 2016	4.0.0	Gedges Hill
Chk	M Leman	May 2016	4 of 4	Matfield
App	P Smith	May 2016		Tonbridge
Client	Michelin			Kent, UK
Printed				TN12 7EA
Time				Tel : +44 (0)1892 722228
Date				Fax : +44 (0)1892 724228
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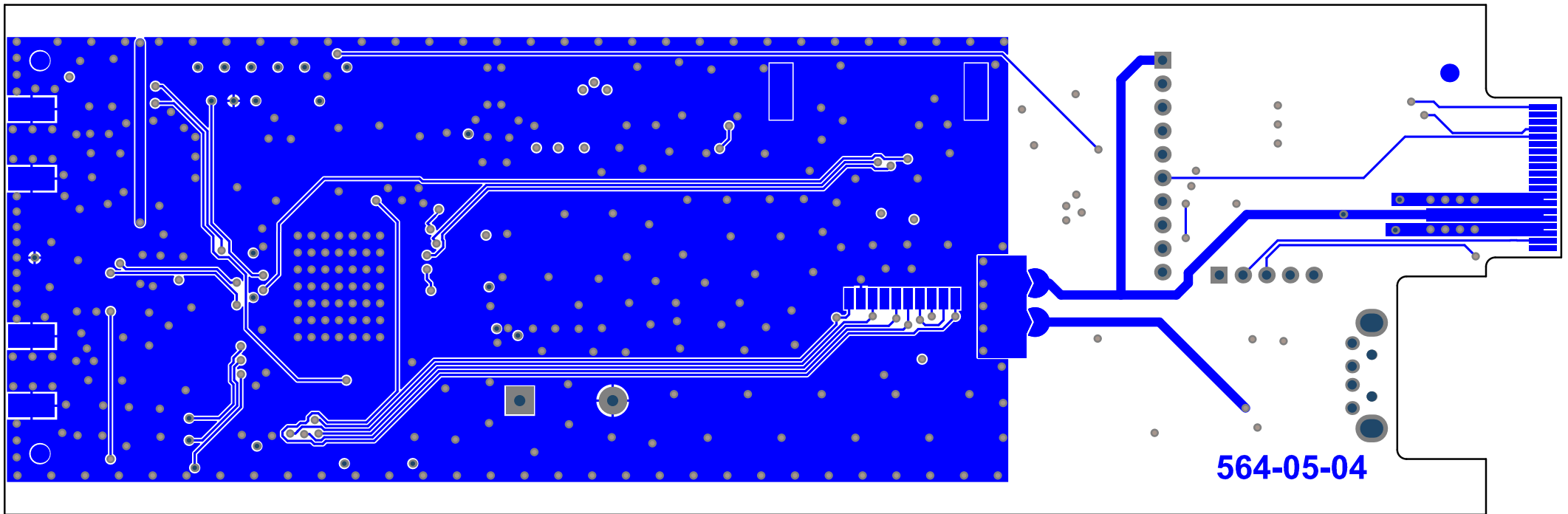




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Top Layer

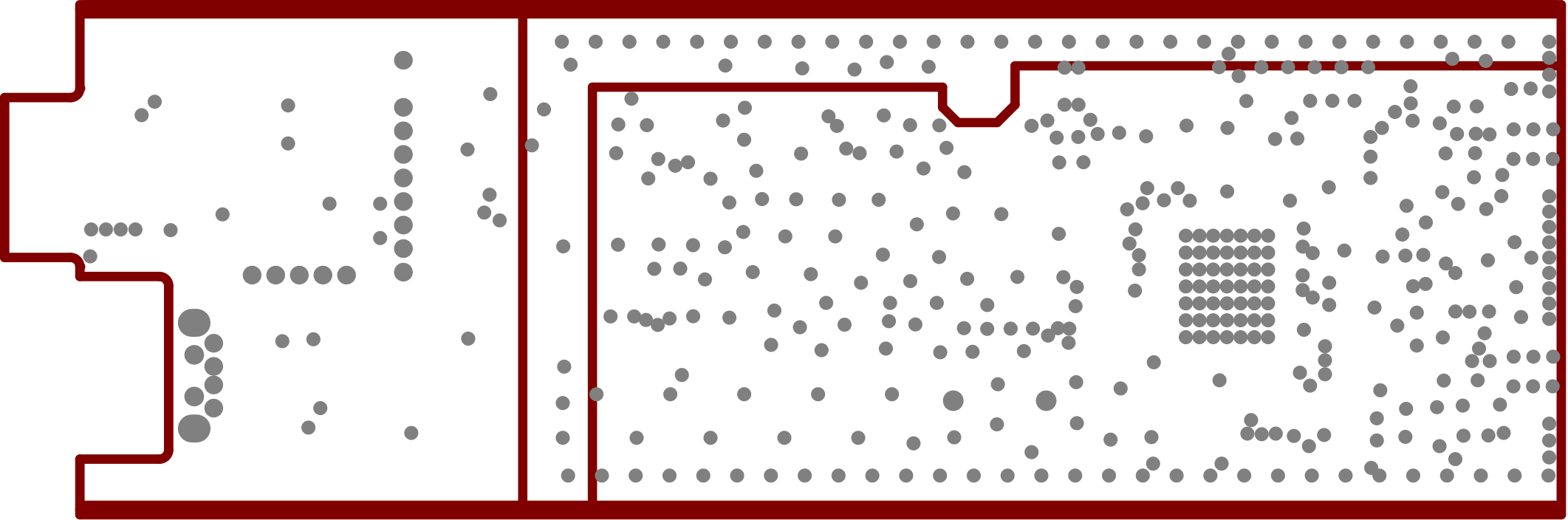
M4-PCBOutline



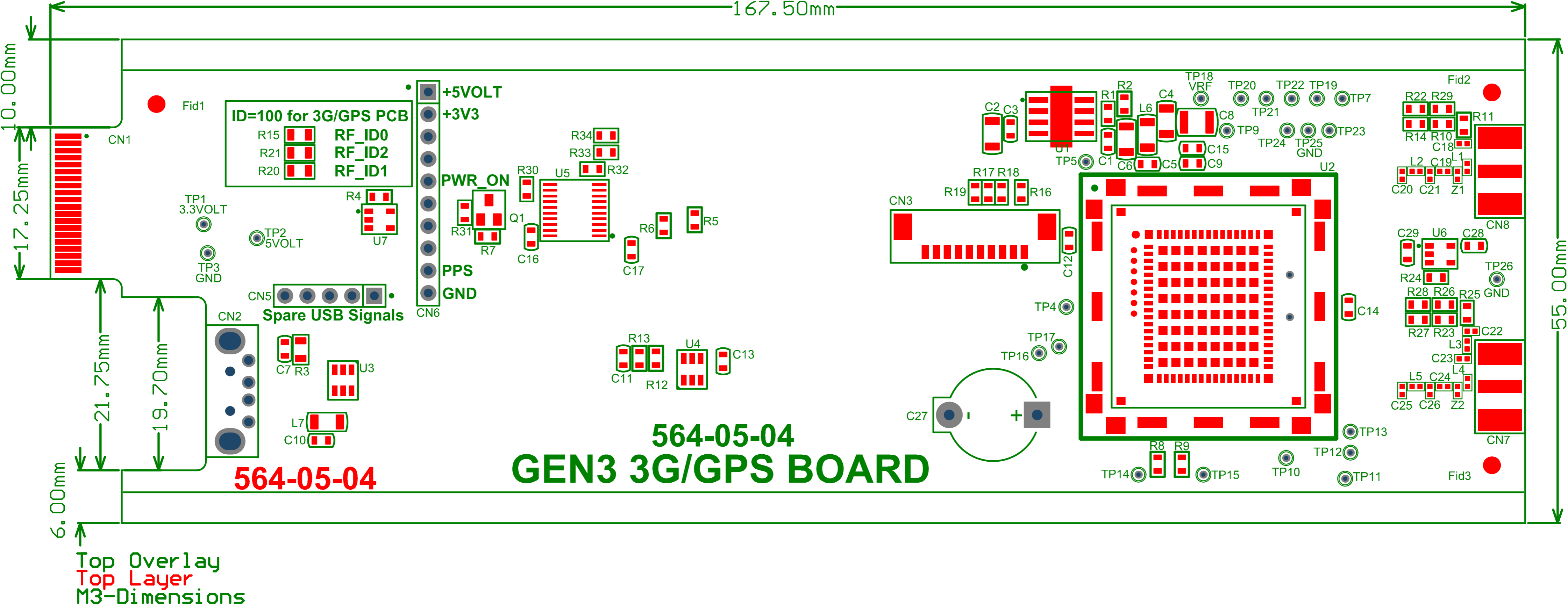
564-05-04



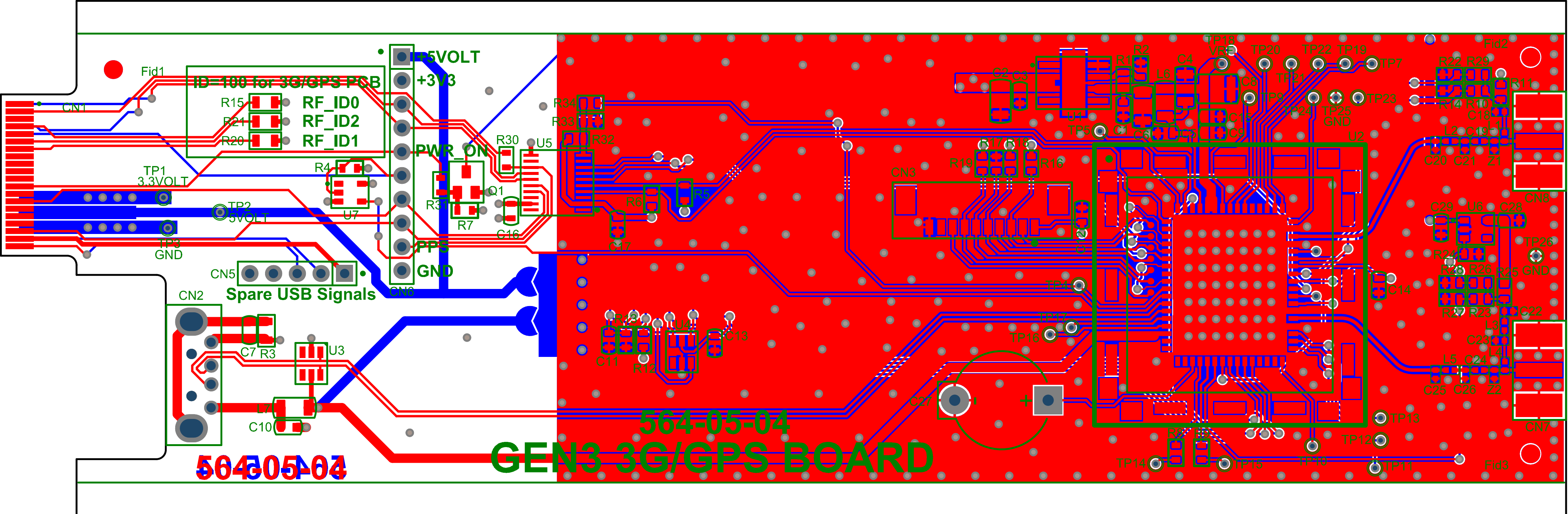
Ground



Power

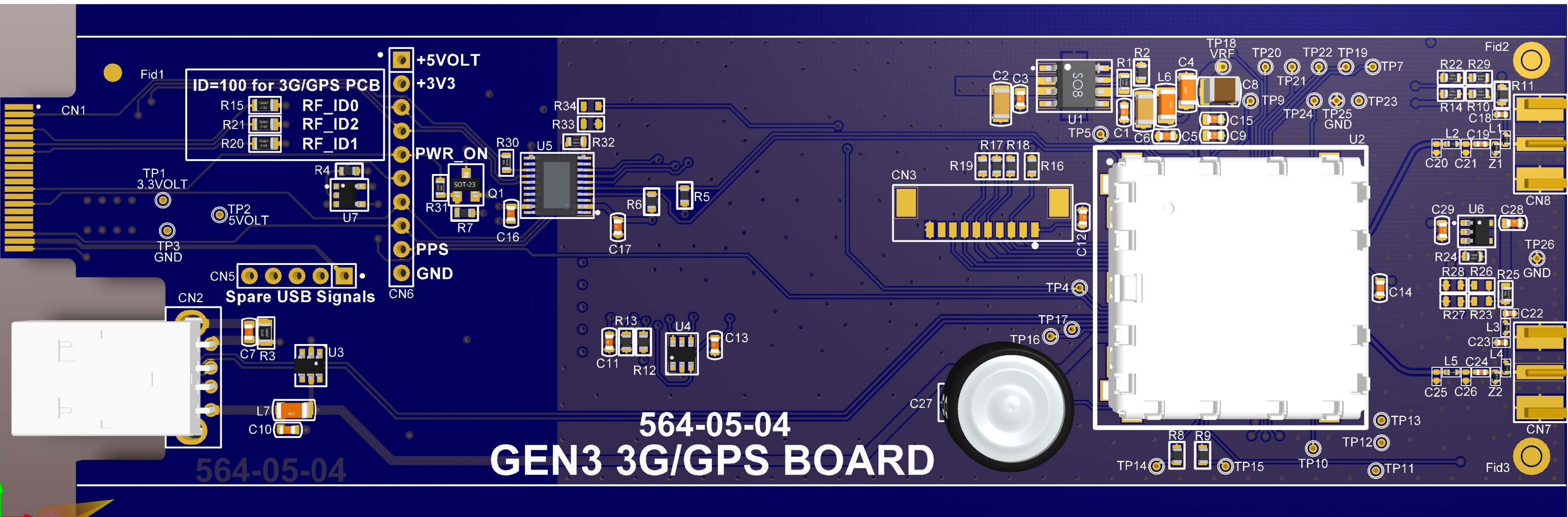


Top Overlay
 Top Layer
 M3-Dimensions



Top Overlay
 Bottom Layer

M4-PCBOutline

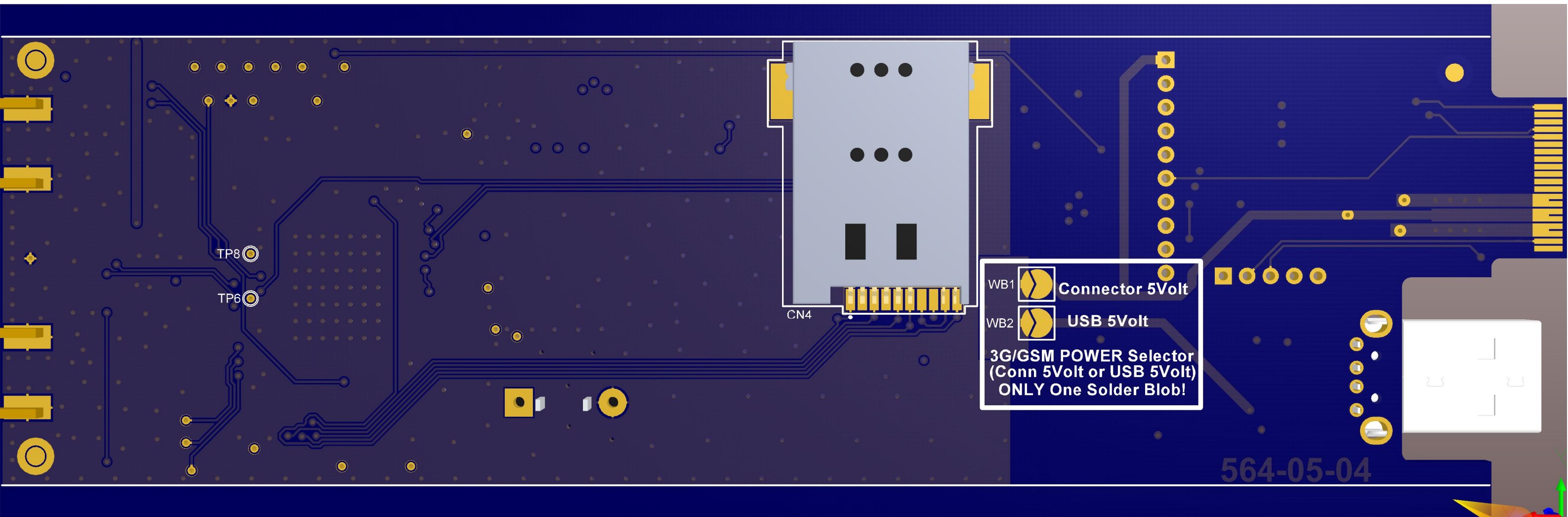


ID=100 for 3G/GPS PCB
R15 RF_ID0
R21 RF_ID2
R20 RF_ID1

Spare USB Signals

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GEN3 3G/GPS BOARD

564-05-04



TP8

TP6

CN4

WB1  Connector 5Volt

WB2  USB 5Volt

**3G/GSM POWER Selector
(Conn 5Volt or USB 5Volt)
ONLY One Solder Blob!**

564-05-04