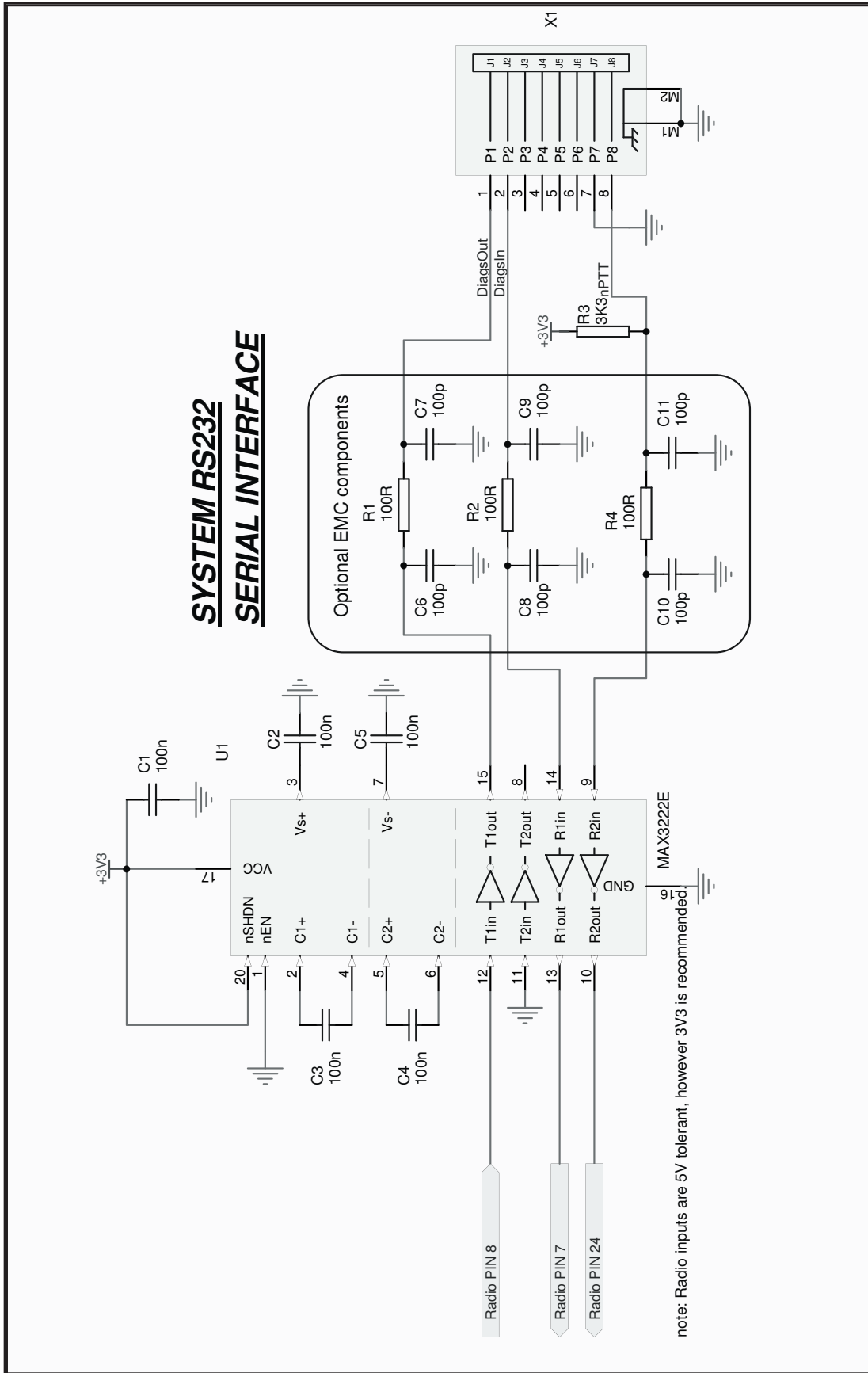
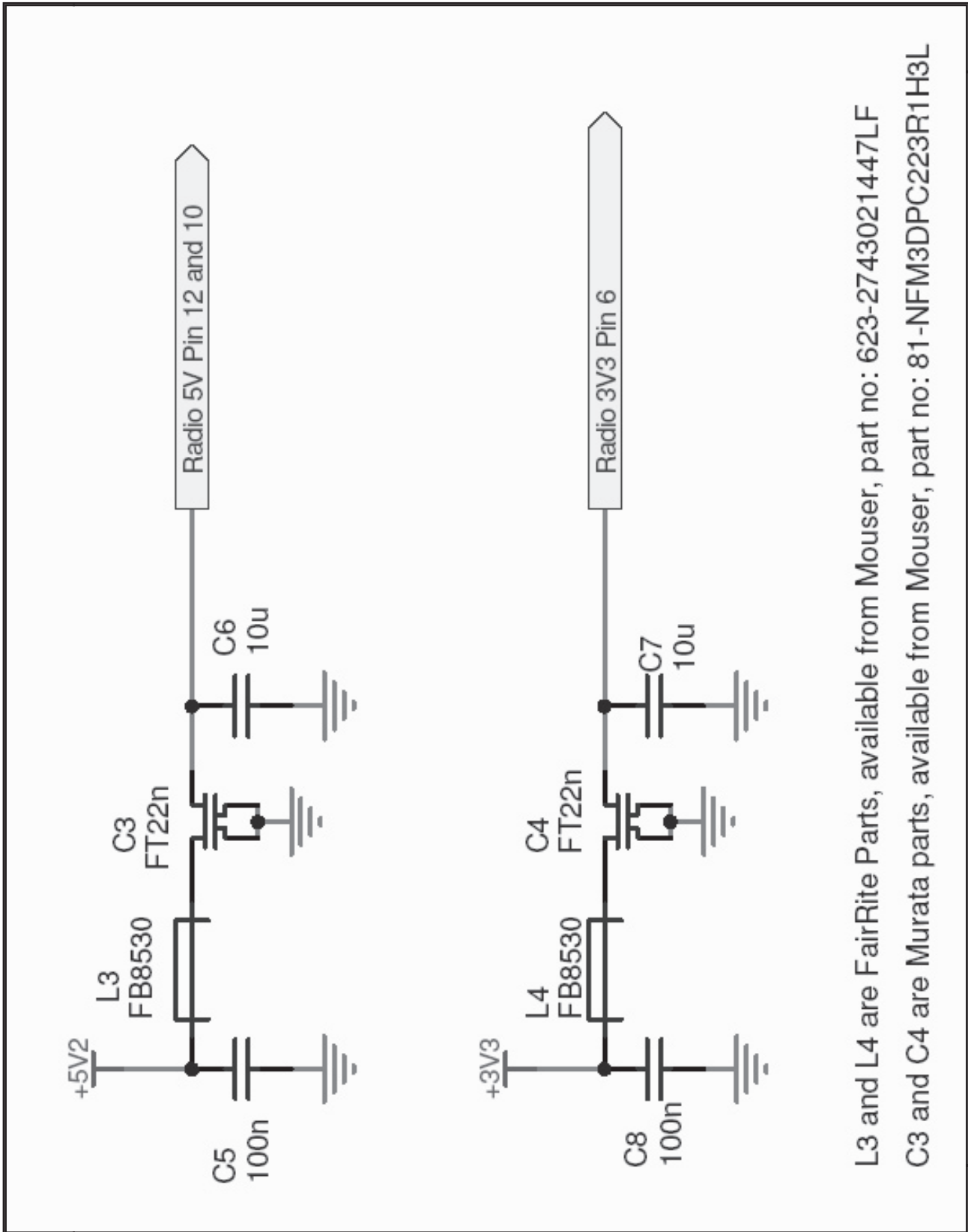


System Port Interface



Power Supply Filtering

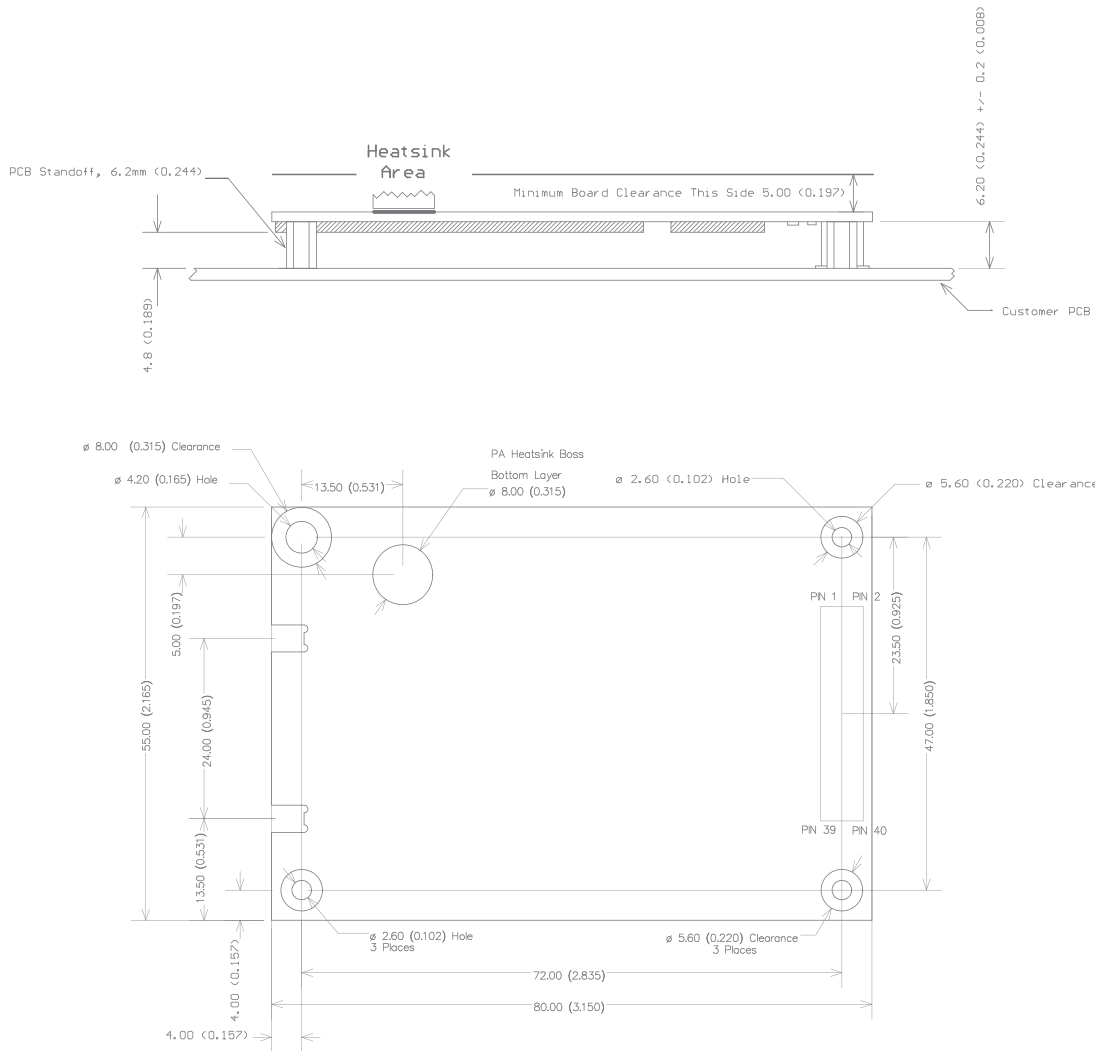


L3 and L4 are FairRite Parts, available from Mouser, part no: 623-2743021447LF
 C3 and C4 are Murata parts, available from Mouser, part no: 81-NFM3DPC223R1H3L

Part G – Mounting and LED Indicators

Mounting & Connector Information

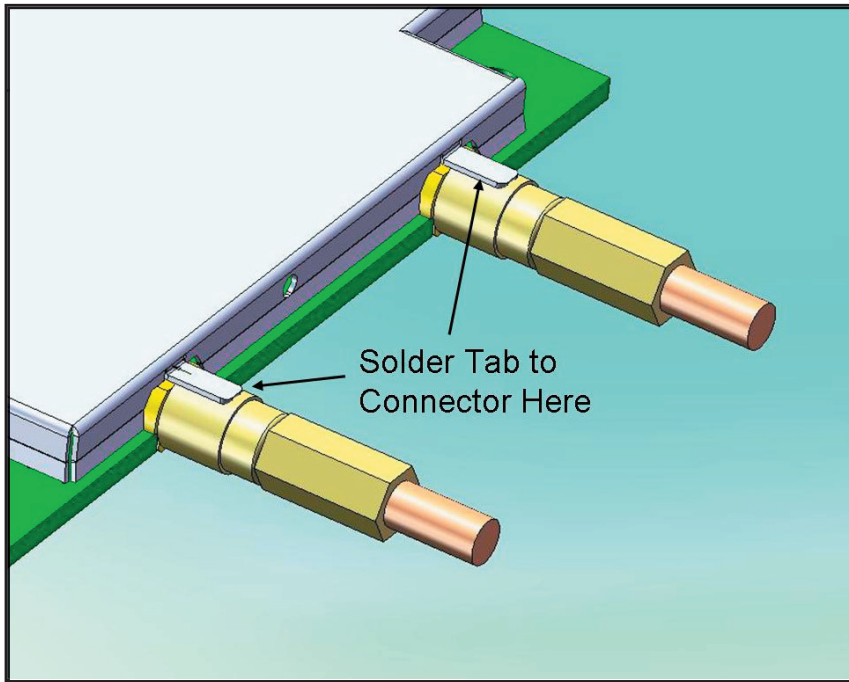
Please Note : Mating connectors can be supplied with each radio or separately. Please order as part number SM%CO2241-20X2



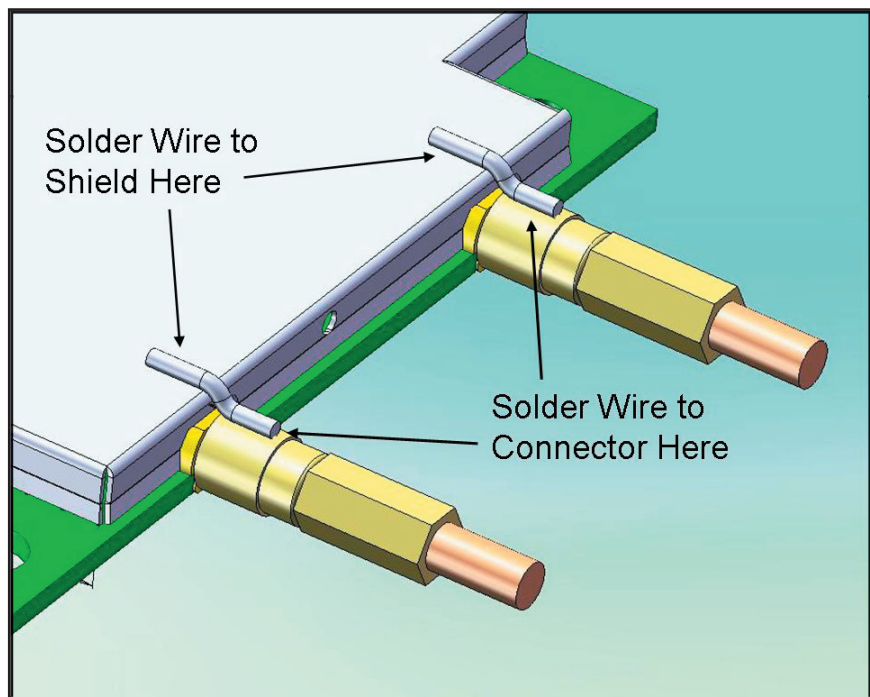
- Notes:
- Dimensions are shown in mm (inch)
 - Clearance areas are all GND connected
 - Heatsink connection is on the bottom layer only,
 - Ensure good thermal connection to this pad
 - Connector Part Number is Oupiin, 2216-40-G-10-DPU
 - Mating Connector Part Number is Oupiin, 2241-2X20-G-10-DPU
 - Refer Manufacturer data sheet for PCB footprint recommendation - (2241D02004K-A1-2XxxG10DPU.pdf)
 - PCB Standoff should be 6.2mm (1/4 inch)
 - Board RF connector type is MMCX JACK.
 - Mating Type is MMCX Plug, e.g Amphenol
 - MMCX Straight Plug for RG-178, 196 908-41200
 - MMCX Straight Plug for RG-174, 188, 316 908-41300
 - MMCX Straight Plug for .086 Semi-Rigid 908-41400
 - MMCX Straight Plug for RD-316 908-41500
 - MMCX Straight Plug for .047 Semi-Rigid 908-41600
 - MMCX Right Angle Plug for RG-178, 196 908-43200

Antenna Port Cabling (Hazardous Installations)

When the O Series OEM module is intended to be used in equipment which is compliant with Class I, Division 2 - Groups A,B,C,D Hazardous Locations, the antenna connectors need to be retained using a soldered connection as shown in the diagrams below. The method of soldered retention will depend on the model of O Series OEM product in use. See below for model specific guidelines.



For O Series modules that have integral mounting tabs, solder the TAB to the RF connector.



For O Series modules that have no TAB, solder a wire from the shield lid to the connector.

Product Labelling

When this OEM module is housed inside another unit, the unit must be labelled with the following notice :

“This unit contains a device with FCC ID:

900MHz Modules:

NI8OM900 and IC: 4630A-OM900.

2.4GHz Modules:

NI8OM240 and IC: 4630A-OM240.

This device complies with part 15 of the FCC rules. Operation of this device is subject to the following conditions:

(1) this device may not cause harmful interference, and (2) this must accept any interference received, including interference that may cause any undesired operation.”

LED Indicators

Indicators	Legend
Power LED	Tx Power (Red) / DC Power (Green)
Sync/NoRx LED	Masters: 100ms pulse when user data received (Green) Remotes/Bridges: Pulsed every 1500ms for 100ms when master acquired, additional 100ms pulse when user data received (Green) Pulsed every 1500ms for 100ms when master not acquired (Red)
Port A Activity	Pulsed for 100ms for any TxD activity on Port A TXD (Red) Pulsed for 100ms for any RxD activity on Port A RXD (Green)
Port B Activity	Pulsed for 100ms for any TxD activity on Port BA TXD (Red) Pulsed for 100ms for any RxD activity on Port B RXD (Green)

Part H – Programming and Diagnostics

Programming

The O Series OEM module is programmed via the System Port. There are two methods of programming:

- (a) In Situ : Programming via the 3-wire System Port pins
- (b) In K-Series : OEM Module can be plugged into a K Series carrier PCB and programmed via the System Port on the K Series.

The O Series OEM module is programmed using the TVIEW+ Management Suite : K Series programmer.

Programming of the O Series is similar to the K Series - however some features are optional on the O-Series (dependent on external support circuitry). The features that require external support circuitry which may or may not be relevant to your design are:

- (a) RS-485 .
- (b) Multi-master Synchronisation.
- (c) RSSI Output
- (d) Port B
- (a) Port A & B Hardware handshaking signals

For a comprehensive guide to programming the O Series OEM module, please refer to the TVIEW+ K Series User Manual - Part G.

Diagnostics

The O Series OEM module includes diagnostics which is useful for fault finding and system commissioning. Detailed information about O Series diagnostics is available in the TVIEW+ Diagnostics User Manual.

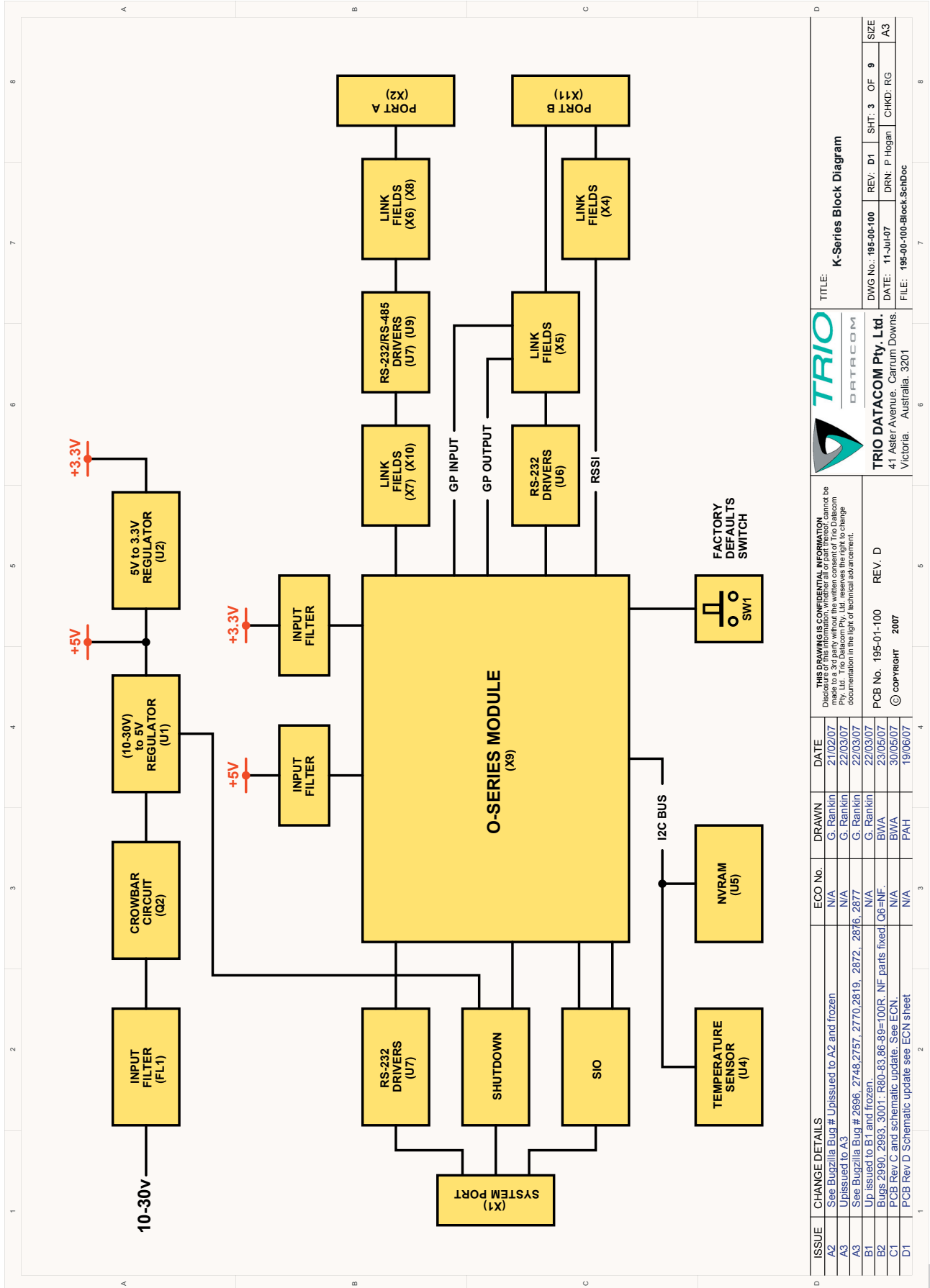
TVIEW+ Diagnostics is available via the System Port of the O Series module. To access the diagnostics facilities locally, the System Port of the O Series must be brought out to a connector for connection to the computer running the diagnostics package.

Alternatively, remote diagnostics connectivity is available "over-the-air". More information on configuring diagnostics can be found in both the TVIEW+ Diagnostics User Manual and the K Series User Manual.

The OEM user may also wish to integrate O Series diagnostics into their own application. To facilitate this, Trio Datacom can provide the specifications document for the "Remote Diagnostics Protocol". This document specifies how diagnostics messages are constructed and what facilities are available. To obtain this document, please contact the factory on support@triodatacom.com.

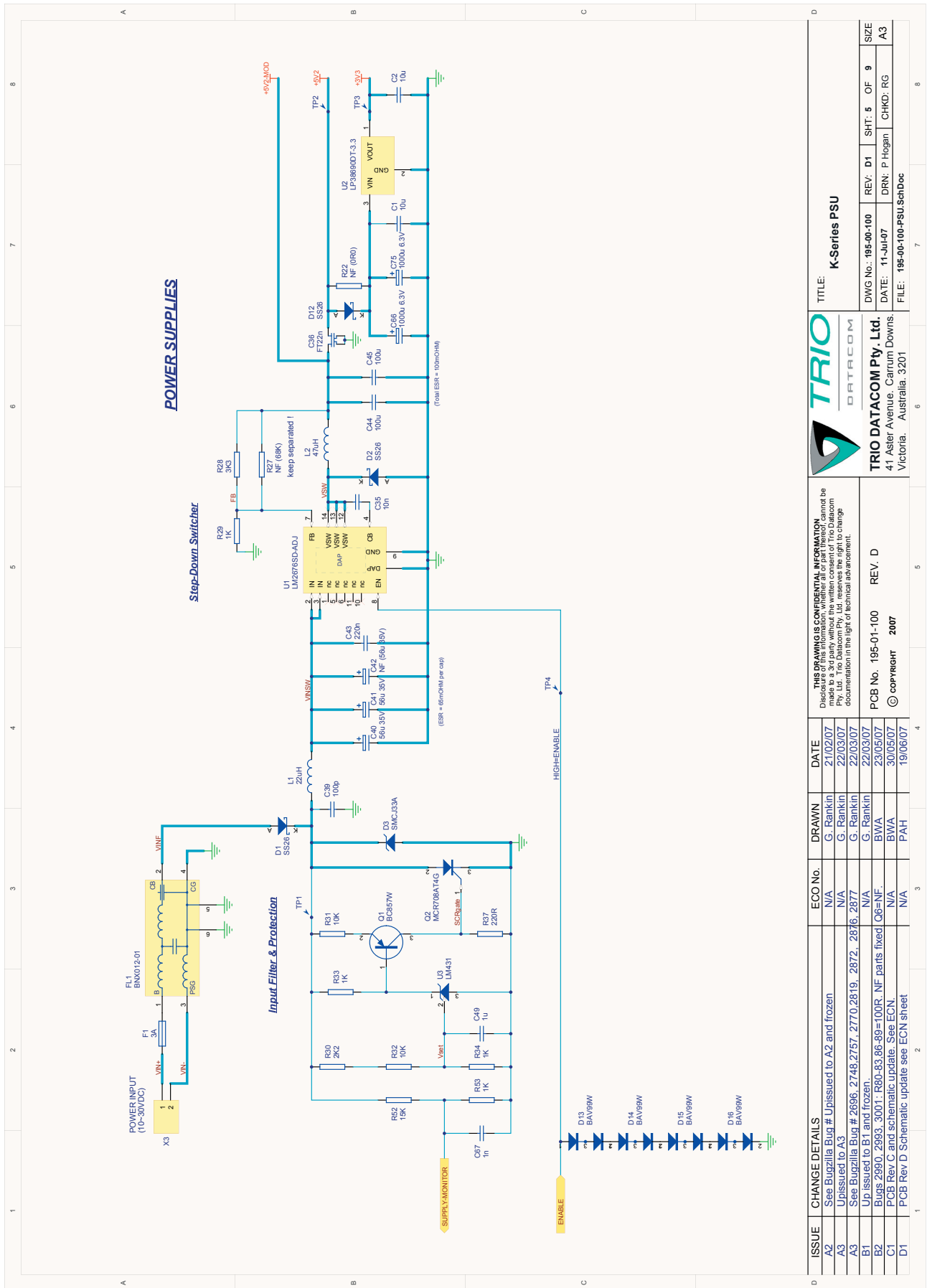
Part I – K Series PCB Overlay & Schematics

Schematics



ISSUE	CHANGE DETAILS	ECO No.	DRAWN	DATE	THIS DRAWING IS CONFIDENTIAL INFORMATION. Declare of this information, whether all or part thereof, cannot be used for any other purpose without the written permission of TRIO Datacom Pty. Ltd. reserves their right to change documentation in the light of technical advancement.	PCB No.	REV.	REV. D
A2	See Bugzilla Bug # Unissued to A2 and frozen	N/A	G. Rankin	21/02/07		195-01-100		
A3	Unissued to A3	N/A	G. Rankin	22/03/07		© copyright	2007	
A3	See Bugzilla Bug # 2696, 2748, 2757, 2770, 2819, 2872, 2876, 2877	N/A	G. Rankin	22/03/07				
B1	Up issued to B1 and frozen.	N/A	G. Rankin	22/03/07				
B2	Bugs 2990, 2993, 3001: R80-83-86-89-100R. NF parts fixed	N/A	BWA	23/05/07				
C1	PCB Rev C and schematic update. See ECN.	N/A	BWA	30/05/07				
D1	PCB Rev D Schematic update see ECN sheet	N/A	PAH	19/06/07				

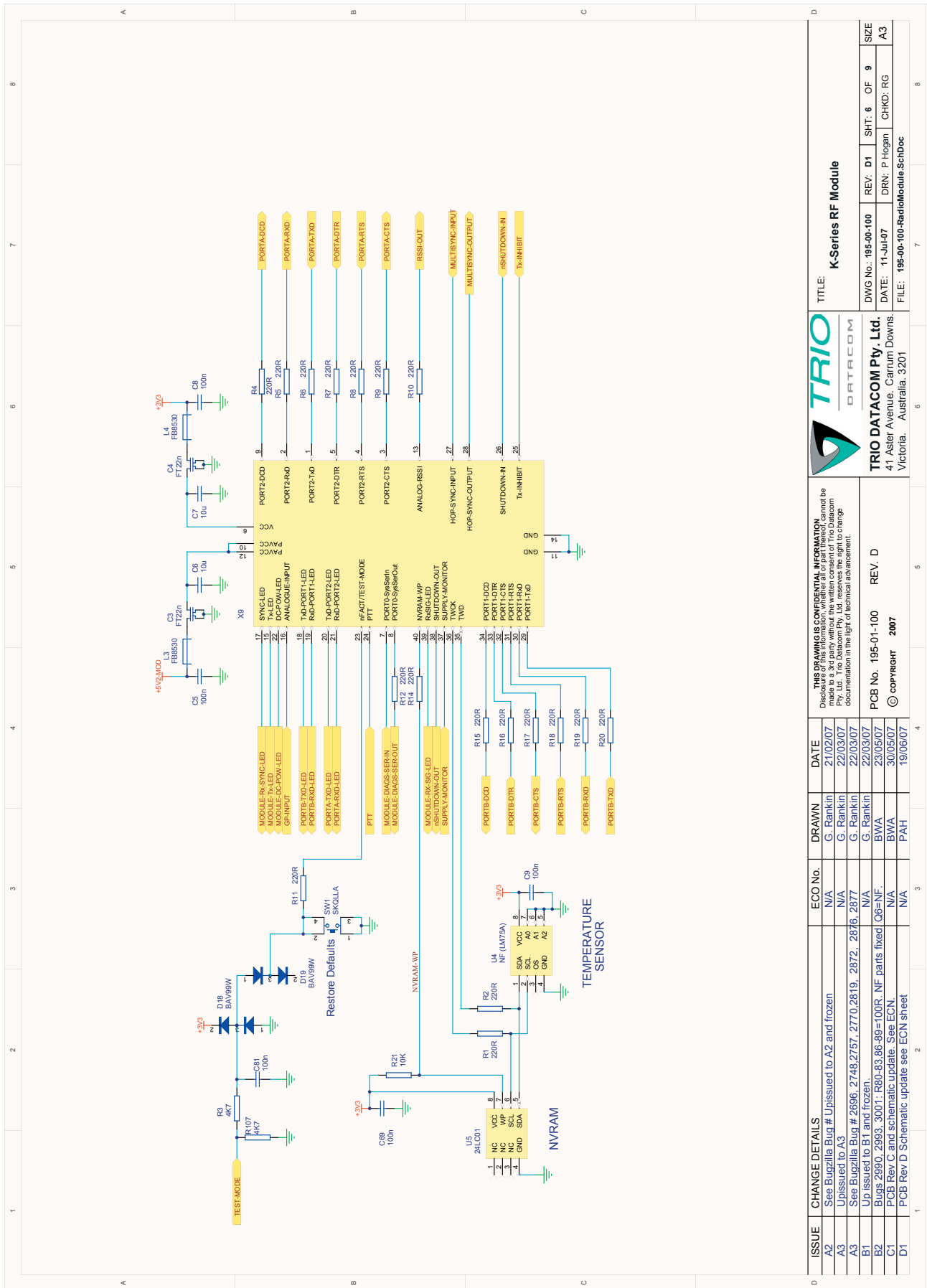
K-Series Block Diagram			
DWG No.:	195-00-100	REV.:	D1
DATE:	11-Jul-07	DRN:	P. Hogan
FILE:	195-00-100-Block.SchDoc	SHT:	3 OF 9
		CHKD:	RG
		SIZE:	A3

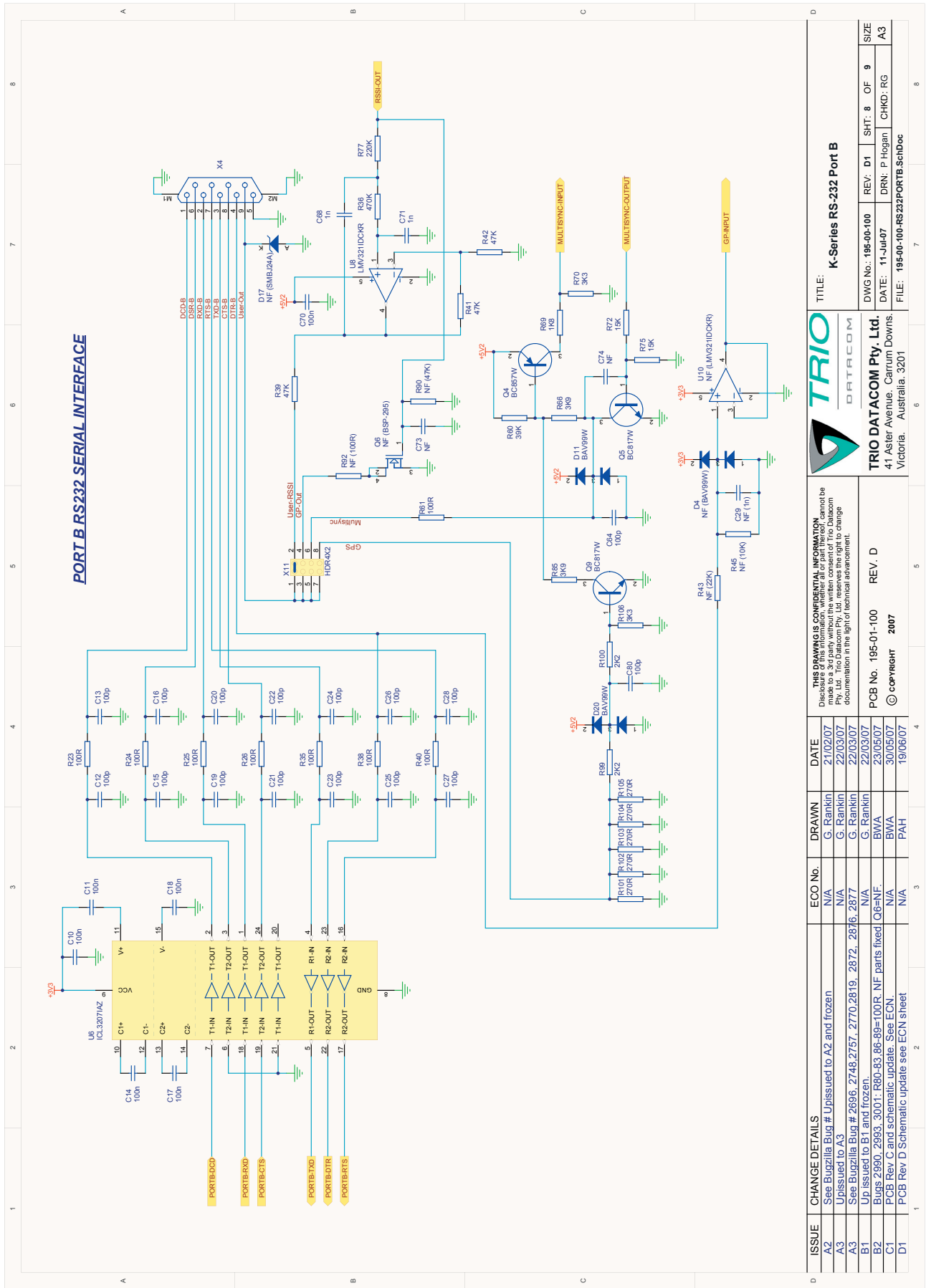


ISSUE	CHANGE DETAILS	ECO No.	DRAWN	DATE
A2	See Bugzilla Bug # Upissued to A2 and frozen	N/A	G. Rankin	21/02/07
A3	Upissued to A3	N/A	G. Rankin	22/03/07
A3	See Bugzilla Bug # 2896, 2748, 2757, 2770, 2819, 2872, 2876, 2877	N/A	G. Rankin	22/03/07
B1	Up issued to B1 and frozen.	N/A	G. Rankin	22/03/07
B2	Bugs 2990, 2993, 3001: R60-83,86-89=100R; NF parts fixed Q6=NF.	N/A	BWA	23/05/07
C1	PCB Rev C and schematic update. See ECN.	N/A	BWA	30/05/07
D1	PCB Rev D Schematic update see ECN sheet	N/A	PAH	19/06/07

TRIO		DATACOM	
TRIO DATACOM Pty. Ltd.			
41 Aster Avenue, Carrum Downs, Victoria, Australia, 3201			
TITLE: K-Series PSU			
DWG No.: 195-00-100	REV: D1	SHT: 5	OF 9
DATE: 11-Jul-07	DRN: P.Hogan	CHKD: RG	SIZE: A3
FILE: 195-00-100-PSU.schDoc			

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PCB No. 195-01-100	REV. D
© COPYRIGHT 2007	

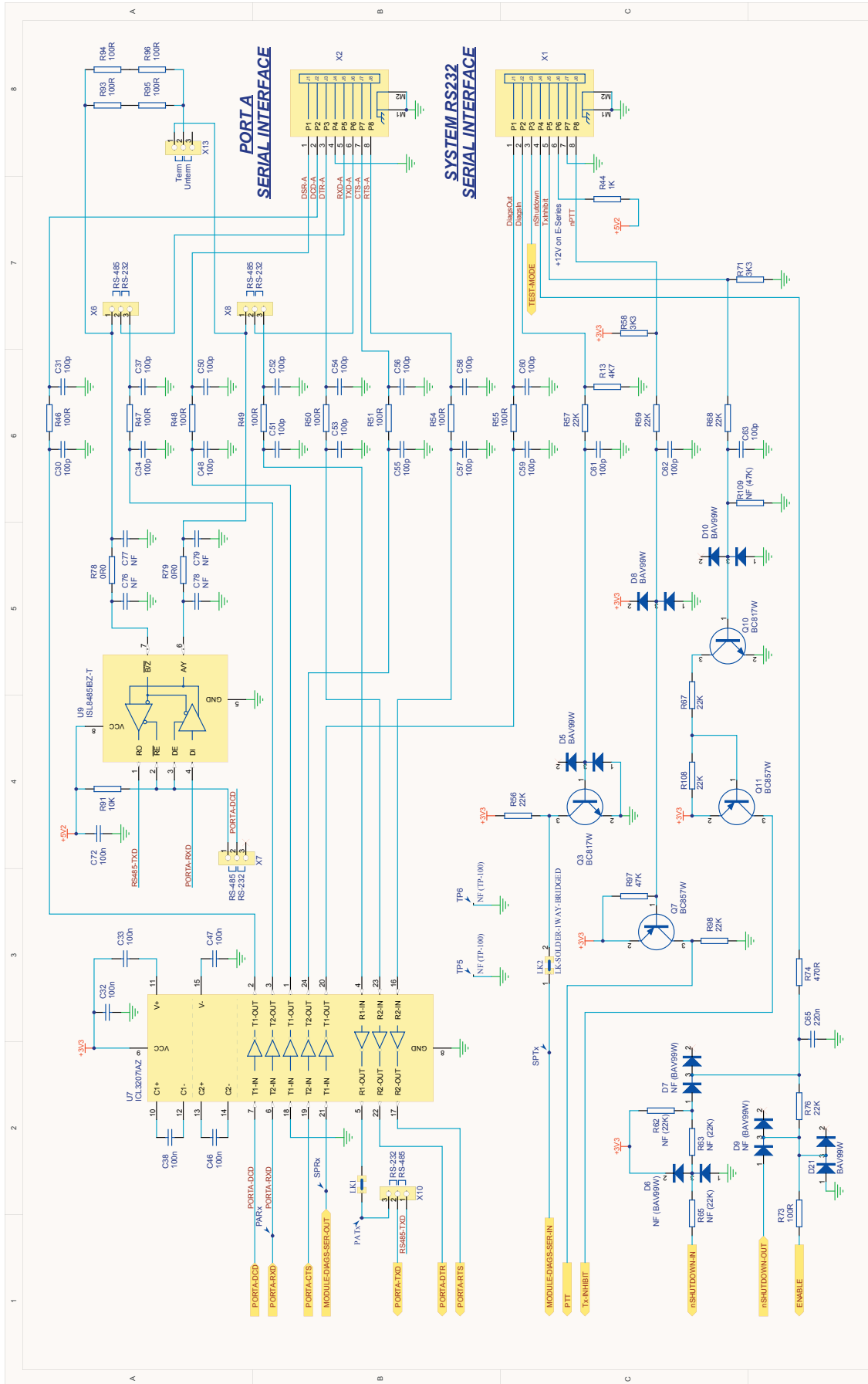




PORT B RS232 SERIAL INTERFACE

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A3	Unissued to A3	N/A	G. Rankin	22/03/07
A3	See Bugzilla Bug # 2696, 2748, 2757, 2770, 2819, 2872, 2876, 2877	N/A	G. Rankin	22/03/07
B1	Up issued to B1 and frozen.	N/A	G. Rankin	22/03/07
B2	Bugs 2990, 2993, 3001: R80-83 86-89=100R. NF parts fixed. Q6=NF.	N/A	BWA	30/05/07
C1	PCB Rev C and schematic update. See ECN.	N/A	BWA	19/06/07
D1	PCB Rev D Schematic update see ECN sheet	N/A	PAH	19/06/07

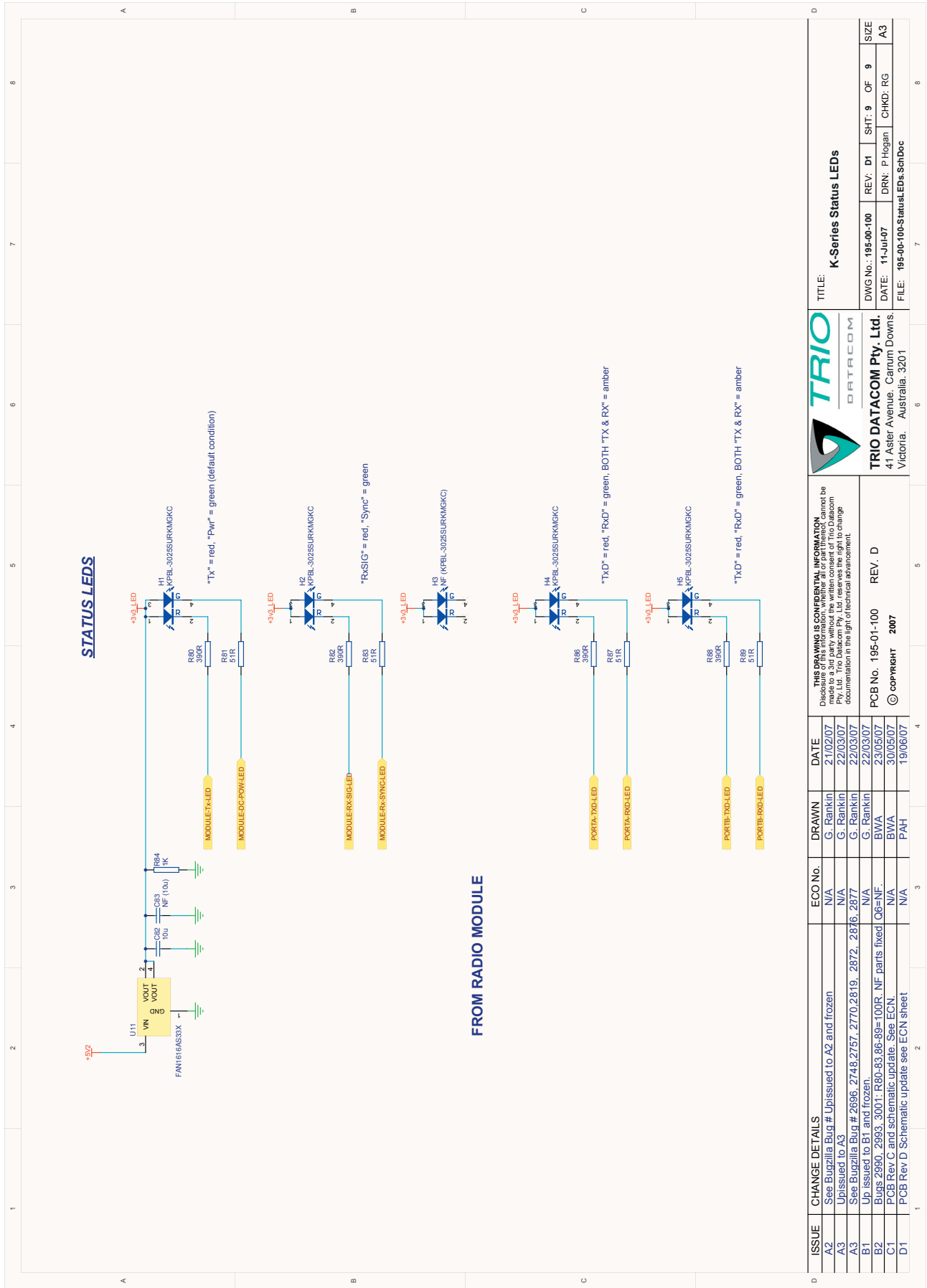
THIS DRAWING IS CONFIDENTIAL INFORMATION	TRIO	DRATCOM
Disclosure of this information, whether all or part thereof, cannot be made without the prior written permission of Trio DataCom Pty. Ltd. or Trio DataCom Pty. Ltd. reserves the right to change documentation in the light of technical advancement.	TRIO	DRATCOM
PCB No. 195-01-100	TITLE: K-Series RS-232 Port B	
© copyright 2007	DWG No.: 195-00-100	
REV. D	DATE: 11-Jul-07	REV. D1
	DRN: P Hogan	SHT: 8 OF 9
	FILE: 195-00-100-RS232PORTB.SchDoc	CHKD: RG
	Victoria, Australia. 3201	SIZE
		A3



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A2	See Bugzilla Bug # Upissued to A2 and frozen	N/A	G. Rankin	21/02/07			K-Series RS-232 System Port and Port A
A3	Upissued to A3	N/A	G. Rankin	22/03/07			
A3	See Bugzilla Bug # 2696, 2748, 2757, 2770, 2819, 2872, 2876, 2877	N/A	G. Rankin	22/03/07			
B1	Up issued to B1 and frozen.	N/A	G. Rankin	22/03/07			
B1	Bugs 2990, 2993, 3001: R80-R83, 86-89=100R. NF parts fixed	N/A	BWA	30/05/07			
C1	PCB Rev C and schematic update. See ECN.	N/A	BWA	30/05/07			
D1	PCB Rev D Schematic update see ECN sheet	N/A	PAH	19/06/07			

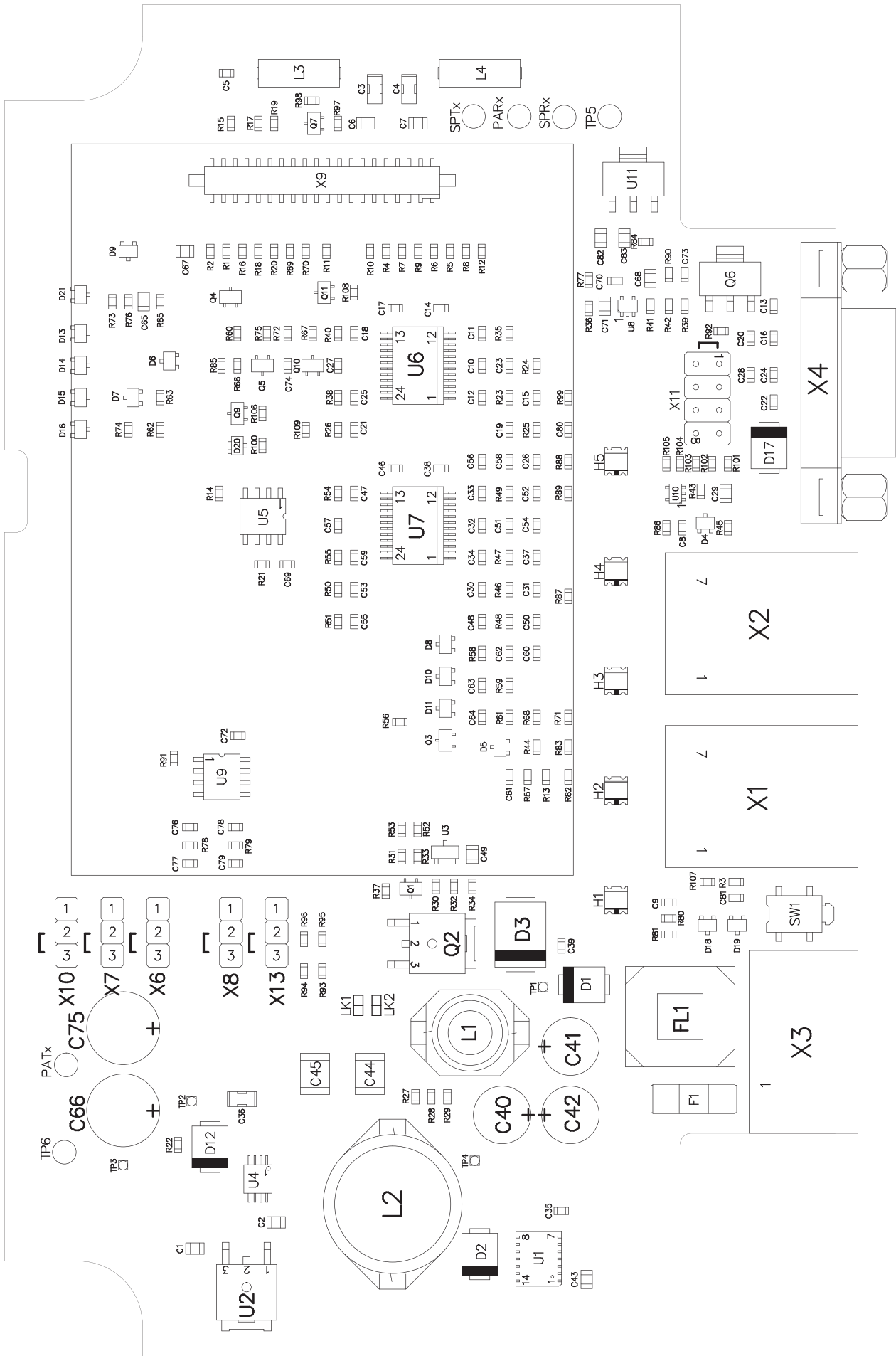
PCB No.	REV.	DATE	DRN	CHKD	SIZE
195-01-100	REV. D	11-Jul-07	P Hogan	RG	A3

FILE:	REV:	SHT:	OF:
195-00-100-RS232SYSTEM-PORTA.Schdoc	D1	7	9



ISSUE	CHANGE DETAILS	ECO No.	DRAWN	DATE	THIS DRAWING IS CONFIDENTIAL INFORMATION	TRIO DATAKOM Pty. Ltd.
A2	See Bugzilla Bug # Upissued to A2 and frozen	N/A	G. Rankin	21/02/07	Dispose of this information, whether all or part thereof, cannot be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of Trio DataCom Pty. Ltd. Trio DataCom Pty. Ltd. reserves the right to change documentation in the light of technical advancement.	TRIO DATAKOM Pty. Ltd. 41 Aster Avenue, Carum Downs Victoria, Australia. 3201
A3	Upissued to A3	N/A	G. Rankin	22/03/07		
A3	See Bugzilla Bug # 2696, 2748, 2757, 2770, 2819, 2872, 2876, 2877	N/A	G. Rankin	22/03/07		
B1	Up issued to B1 and frozen.	N/A	G. Rankin	22/03/07		
B2	Bugs 2990, 2993, 3001: R80-R83, 86-89=100R; NF parts fixed 06=NF.	N/A	BWA	23/05/07		
C1	PCB Rev C and schematic update. See ECN.	N/A	BWA	30/05/07	PCB No. 195-01-100 © COPRIGHT 2007	
D1	PCB Rev D Schematic update see ECN sheet	N/A	PAH	19/06/07	REV. D © COPRIGHT 2007	TITLE: K-Series Status LEDs DWG No.: 195-00-100 DATE: 11-Jul-07 FILE: 195-00-100-StatusLEDs.SchDoc

Overlay



Part I – Specifications

Parameter	900MHz Specification	2.4GHz Specification
Frequency Range	FCC: 902 – 928MHz, ACMA: 915-928MHz	2.4 - 2.4835MHz
Antenna Impedance:	50Ω	50Ω
Main Antenna Connector Type:	MMCX	MMCX
Auxiliary Antenna Connector Type:	MMCX	MMCX
Frequency Error (over temp range):	+/- 1.5ppm	+/- 3.0ppm
Supply Rails		
DC Supply #1	5.0V ±5%	5.0V ±5%
DC Supply #2	3.3V ±5%	3.3V ±5%
Current Consumption (nom @ +25° C)		
+10dBm output power	130mA@5v	240mA@3v3 & 117mA@5v
+20dBm output power	240mA@5v	360mA@3v3 & 275mA@5v
+27dBm output power		530mA@3v3 & 440mA@5v
+30dBm output power	820mA@5v	
RX	<1mA @ 5.0V 270mA @3.3V	<1mA @ 5.0V 270mA @3.3V
Current Consumption (maximum)		
+5.0v	1.35A	760mA
+3.3v	375mA	540mA
I/O Connector	Oupiin 2216-40-G-10-DPU	Oupiin 2216-40-G-10-DPU
Operating Temperature	-40 to +75°C Duty cycle limits apply.	-40 to +75°C Duty cycle limits apply.
Humidity	5 – 95% non-condensing	5 – 95% non-condensing
Storage Temperature	-40°C to +85°C	-40°C to +85°C
Dimensions	80mm x 55mm x 8mm (including connectors)	80mm x 55mm x 8mm (including connectors)
Modulation technique	2 Level GFSK	2 Level GFSK
Bandwidth	382kHz	382kHz

Appendix – FCC Approved Antennas

Part Number **Description**

Yagi Antennas

BM Y890K	10dBd, 900MHz Yagi Directional Antenna Bluewave, Marathon Series
BM Y890G	6.5dBd, 900 MHz Yagi Directional Antenna Bluewave, Marathon Series
BG Y890K	10dBd, 900 MHz Yagi Directional Antenna Bluewave, Gaurdian Series
BG Y890G	6.5dBd, 900MHz Yagi Directional Antenna Bluewave, Gaurdian Series
BX Y24XI	6dBd, 2.4GHz Yagi Directional Antenna Bluewave, Sentinel Series
BX Y24XK	8dBd, 2.4GHz Yagi Directional Antenna Bluewave, Sentinel Series
BX Y24XM	10dBd, 2.4GHz Yagi Directional Antenna Bluewave, Sentinel Series

Omni Antennas

BMO902J	9dBd, 900MHz Omni Directional Antenna Bluewave, Marathon Series
BMO902H	7dBd, 900 MHz Omni Directional Antenna Bluewave, Marathon Series
BMO902G	6dBd, 900 MHz Omni Directional Antenna Bluewave, Marathon Series
BGO902G	6dBd, 900MHz Omni Directional Antenna Bluewave, Gaurdian Series
BXO24XD	1dBd, 2.4GHz Omni Directional Antenna Bluewave, Sentinel Series
BXO24XG	4dBd, 2.4GHz Omni Directional Antenna Bluewave, Sentinel Series
BXO24XJ	7dBd, 2.4GHz Omni Directional Antenna Bluewave, Sentinel Series
BXO24XM	10dBd, 2.4GHz Omni Directional Antenna Bluewave, Sentinel Series
ANT2G4WHIP	0dBd, 2.4GHz Omni Directional Antenna Trio Datacom, Whip Series

Panel Antennas

BXL24XM	10dBd, 2.4GHz Panel Directional Antenna Bluewave, Sentinel Series
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WARNING

Changes or modifications not expressly approved by Trio Datacom could void the user's authority to operate the equipment. Fixed antennas require installation preventing end-users from replacing them with non-approved antennas. Antennas not listed in the above table must be tested to comply with FCC Section 15.203 (unique antenna connectors) and Section 15.247 (emissions). Please contact Trio Datacom Inc. if you need more information.

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1 WATT POWER



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Issue: 08-08