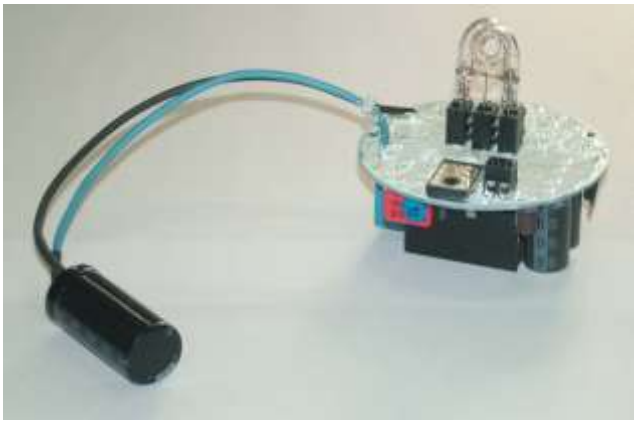


SIRIUS 200

U1X200A12-310-SRS
U1X200A24-310-SRS

USER'S MANUAL

DORADO ENERGY

Belgrade, March 2005

CONTENTS

1 GENERAL

1.1. IMPORTANT NOTICES

- Sirius 200 is delivered as an open-frame module, intended for installation in lighting equipment of official vehicles.
- Only trained personnel is permitted to manage this device.
- Only authorized personnel is permitted to perform servicing of the device, including lamp replacement.
- To avoid the risk of lethal electric shock, all warnings and recommendations in this document must be observed and strictly adhered to.
- Connector KON1 is considered disconnect device. This means that it must be always be disconnected before service actions.
- After disconnection, allow 4 minutes for capacitors to discharge before handling the device.

WARNING: Voltage on flash lamp contacts may exceed 10kV during the ignition cycle.

WARNING: If the main switch is turned on and supply voltage is present on input contacts of the device, voltage on flash lamp contacts is extremely dangerous – 400V dc.

WARNING: If the main switch is turned on and supply voltage is present on input contacts of the device, voltage on certain points of the device exceeds 1200V.

WARNING: Flash lamp light radiation may seriously damage the eye of the observer. Never look directly into the light source during installation procedure.

- Sirius 200 is not an insulated device. Lethal electric shock may occur between the device and the chassis of the vehicle.
- **Measuring equipment (oscilloscope, PC, scope cards, etc) must be disconnected from earth during operation.**
  Connecting some points to the earth potential via probe contacts may form inductive loop with large area. This action may cause very strong high frequency radiation which will produce the illegal operation code situations on the digital logic of the connected equipment.

2 TECHNICAL SPECIFICATIONS SIRIUS 200

2.1. Input

Input voltage	12Vdc nominal
Input voltage range	10.0 to 15 Vdc
Input power	22W max.
Input current - typ.	1.8A max.
Input current - max	2.2A max.
Inrush current	30A (peak)
Energy reserve	10 ms
Efficiency (20 – 110% of nominal load)	>90%

2.2. Output

Max. power – repetitive mode	20W
Single flash energy	12J/6J *(1)
Flash duration	2ms
Flash frequency	3Hz*(2)
Flash lamp voltage range	200 to 400Vdc
Igniter voltage (HF)	10kV
Switching frequency	200 kHz

2.3. Environmental conditions

Operating temperature range	0 to +55˚ C
Storage and transport temperature range	-45 to +85˚ C
Operating humidity (no condensation)	30 to 95%
Storage and transport humidity (no condensation)	10 to 95%

2.4. Mechanical characteristics

Weight	0.25 kg
Height – without flash lamp	50 mm
Diameter	92 mm

See appendix 1.

***(1) – Flash sequence:**
First flash – 12J
Second flash – 6J

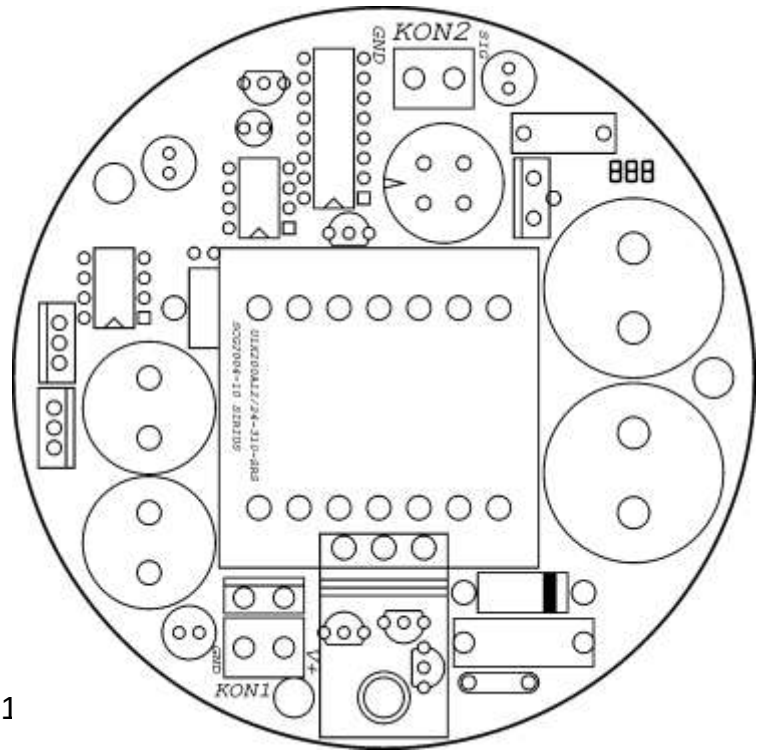
***(2) – Two flash sequences during 1.5 sec.**

	Min. value	Max. value	Nominal
Flash current	1A	250A	200A
Flash duration	100us	5ms	1ms
Lamp voltage	50V	400V	310V
Flash Energy	2J	35J	12J
Flash power	50W	120kW	60kW

Table 1.

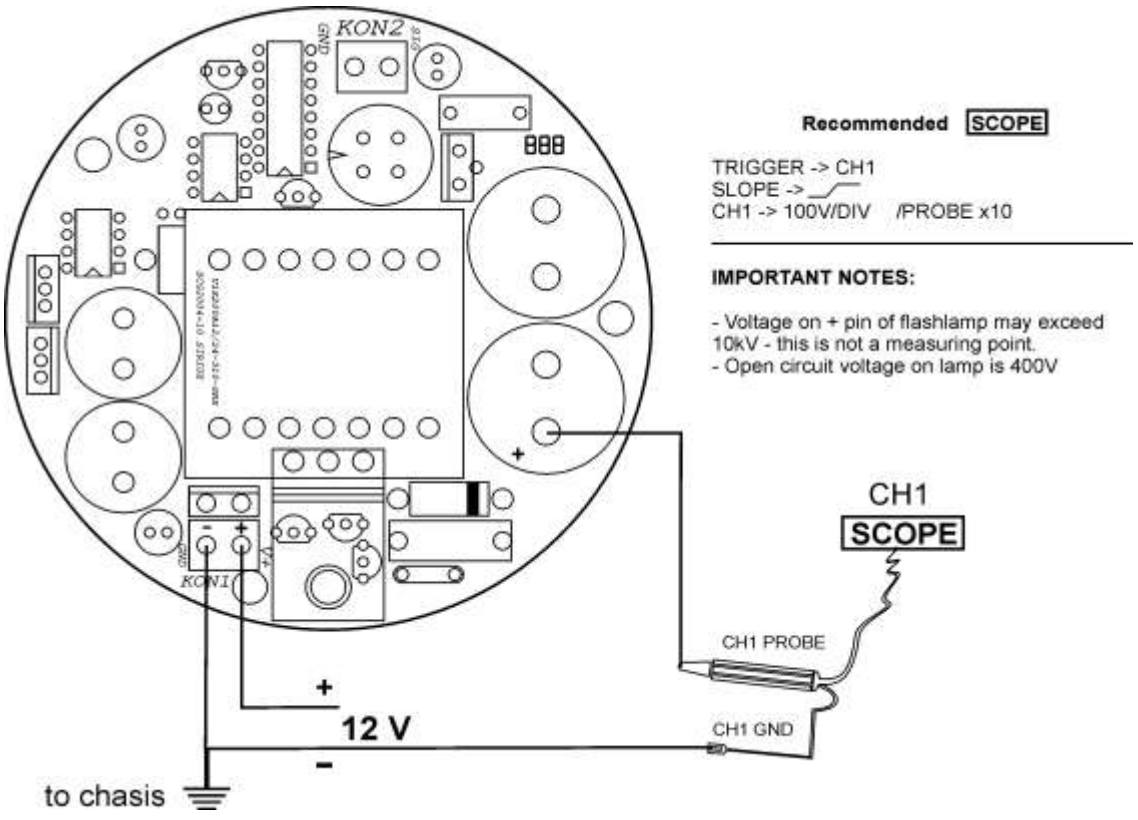
3 CONNECTIONS

3.1. TOP VIEW



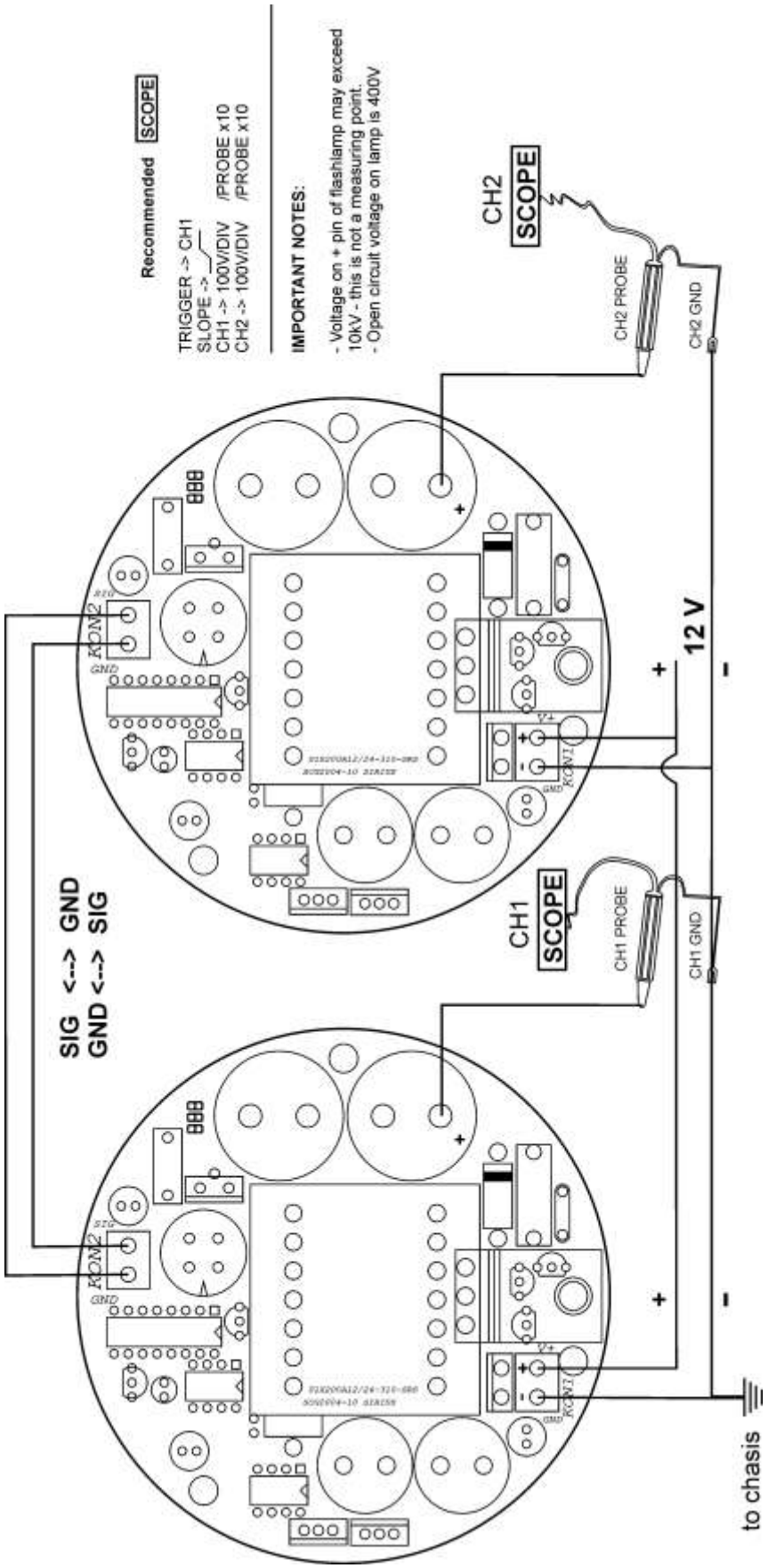
Picture 1

3.2. BLOCK DIAGRAM – CONNECTING IN SINGLE MODE



Picture 2.

3.3. BLOCK DIAGRAM – CONNECTING IN PARALLEL MODE



Picture3.

3.4. MOUNTING PRECAUTIONS

Always make sure that plastic insulation is present between the printed circuit board and the mounting distancers.

The helical flash lamp should be mounted so that the red dot designating its positive end (or any other reference marking positive) should match the red dot on the module.

4 MANAGING

4.1. GENERAL

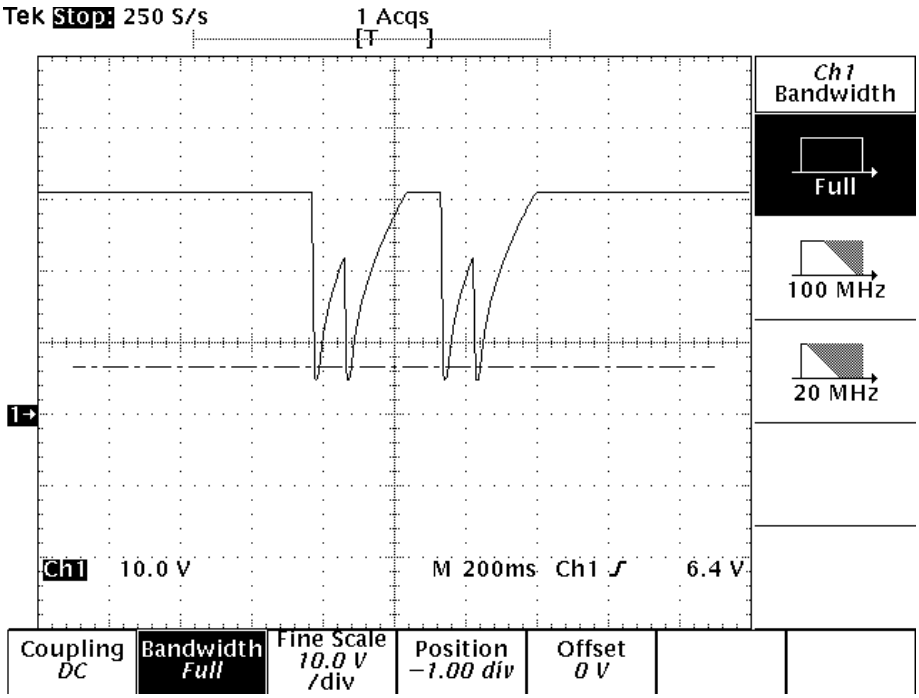
1) Before beginning the connection steps, the user must make sure there is no DC voltage present.
2) If the module's serial number is marked "A", all reverse polarity connection will cause internal damages, and the necessity to repair the module. For connection polarities follow indications mentioned in Picture 1. Picture 2 shows the appropriate connections of modules SIRIUS 200 working in parallel. The 12V dc power supply must be common for all modules. Electrolytic capacitors C18, C19 should not be mounted directly onto the circuit board of the module. They should be connected to the module through insulated cable, which is at least 2.5mm in diameter, and is shorter than 20cm.
3) Turn on the 12V power supply and check if the device is working properly. In case of malfunction, turn off the power supply, wait for 4 minutes, disconnect the device and call authorized service personnel.

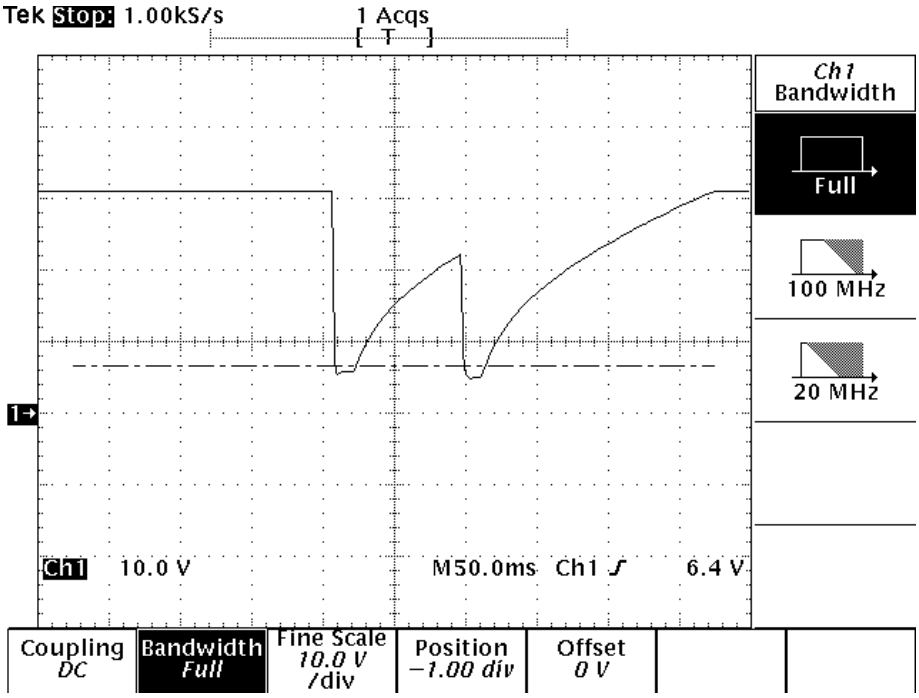
5 APPENDIXES

5.1. APPENDIX 1

Voltage diagrams on characteristic points of SIRIUS 200

CH1 -> FLASH LAMP VOLTAGE – LAMP 1– 0-310V



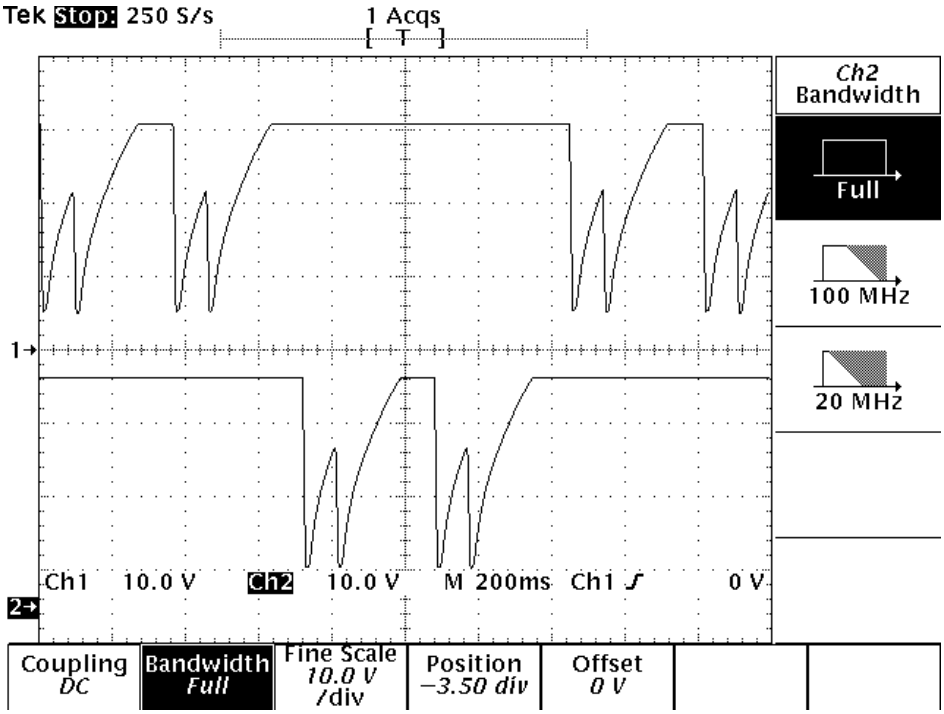


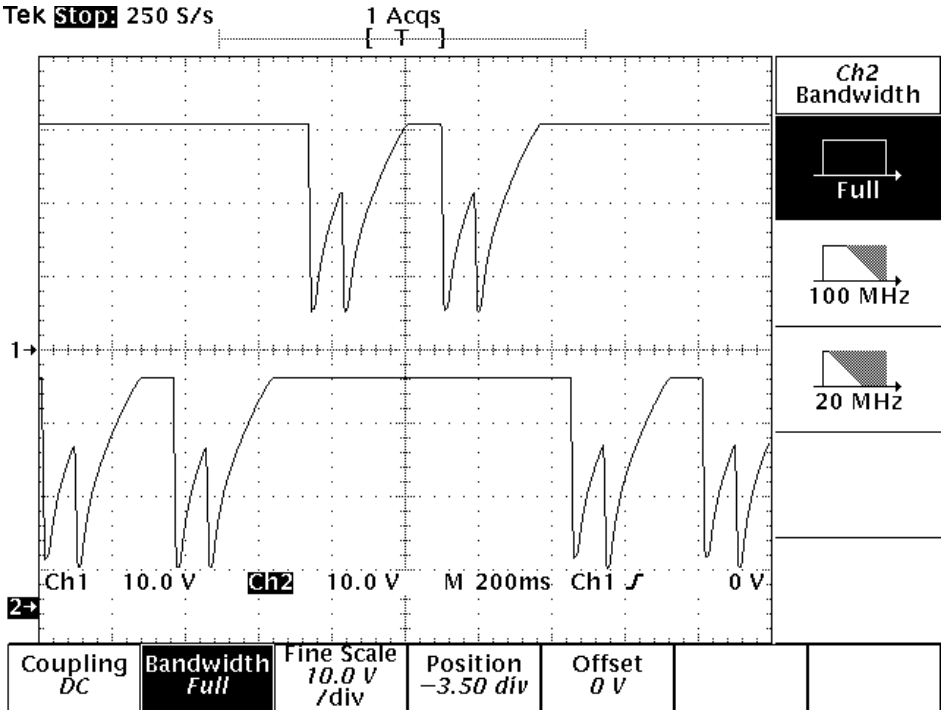
5.2. APPENDIX 2

Voltage diagrams on characteristic points of SIRIUS 200

CH1 -> FLASH LAMP VOLTAGE – LAMP 1– 0-310V

CH2 -> FLASH LAMP VOLTAGE – LAMP 2– 0-310V

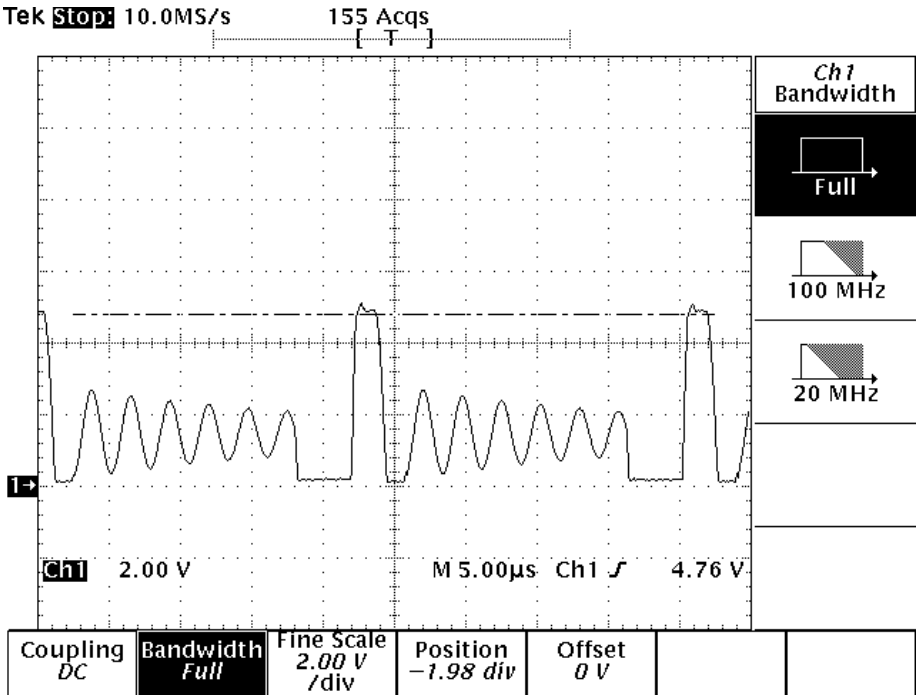


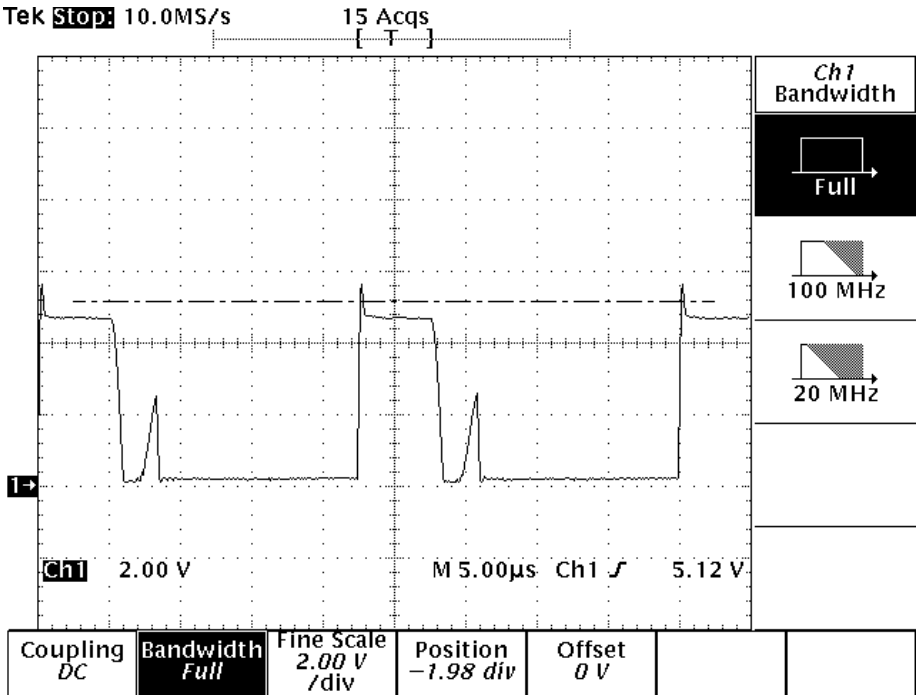


5.3. APPENDIX 3

Voltage diagrams on characteristic points of SIRIUS 200

CH1 -> DRAIN VOLTAGE – Q1





6 LATEST MODIFICATIONS AND UPGRADES

SIRIUS 200 series marked with “B” and “C” will have built-in protection from accidental reversing of polarity. Also, all series (“A”, “B” and “C”) marked “12/24” will capable of working with input voltages from 9 to 33 Volts. The software and hardware enabling such operation is under testing, and will be available in April 2005.