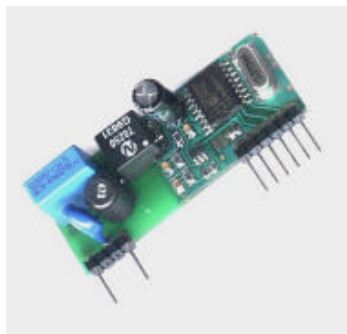




# MOD-V2 Power Line Modem Micro-module

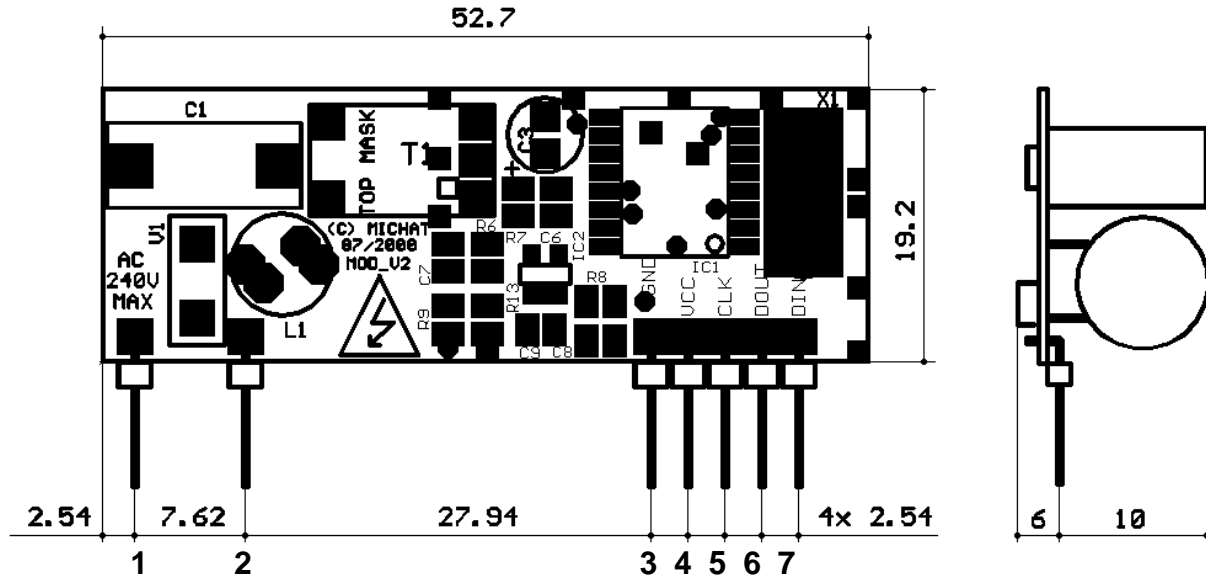
## *Product Specification*



V2.1 08 14 / 2000

email: [mail@michat.com](mailto:mail@michat.com) Web site: [http:// www.michat.com](http://www.michat.com)

## MECHANICAL DATA



Top layer – Not to scale – All dimensions in mm  
(Pins length = 7mm / PCB hole = 1mm diam.)

PINING		
1	Power Line terminal 1	
2	Power Line terminal 2	
3	GND	PWR
4	+VCC	PWR
5	CLK OUT	OUT
6	DATAOUT	OUT
7	DATAIN	IN

## ABSOLUTE MAXIMUM RATINGS - LIMITING VALUES

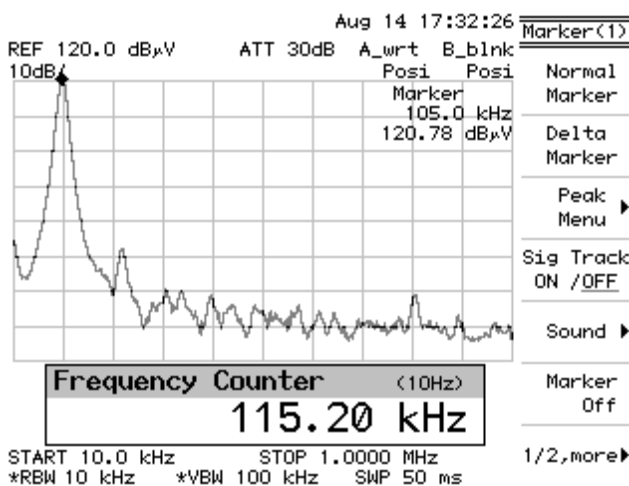
		Unit	MIN	MAX
Vcc	DC Power Supply voltage	V	4.5	5.5
Vline	AC Power Line voltage	Vrms		240
Vline	DC Power Line voltage	V		300
Vin_max	Max/Min input voltage on DATAIN	V	-0.5	Vcc+0.5
Iout_max	Max source/sink current on DATAOUT	mA		1.6
Vins	Power line insulation voltage	Vrms		1500
T°	Operating temperature	°C	-10	+70

## DC SPECIFICATION

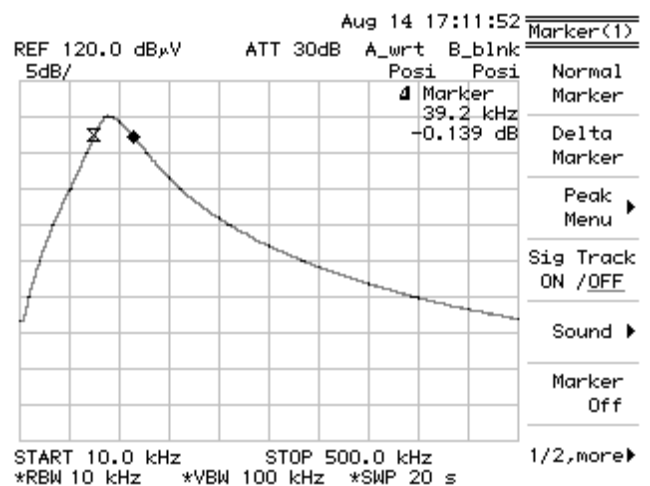
Name	Parameter	Unit	MIN	Typ	MAX
Vcc	DC Power supply voltage	V	4.75	5.0	5.25
Icc_RX	DC supply current in RX mode	mA			40
Icc_TX	DC supply current in TX mode	mA			90
V <sub>IH</sub>	High level input voltage on DATAIN	V	0.2V <sub>cc</sub> +0.9		V <sub>cc</sub> +0.5
V <sub>IL</sub>	Low level input voltage on DATAIN	V	-0.5		0.2V <sub>cc</sub> -0.1
V <sub>OH</sub>	High level on DATAOUT (at 1.6mA)	V	2.4		
V <sub>OL</sub>	Low level on DATAOUT (at -1.6mA)	V			0.45

## AC SPECIFICATION

Name	Parameter	Unit	MIN	Typ	MAX
Fc	Carrier frequency (standard)	KHz	-50ppm	115.2	+50ppm
Fout	CLKOUT output frequency	MHz	-50ppm	3.685	+50ppm
Br	Baud rate	Baud		600	1200
Ts/h	Setup/Hold time of the carrier	μs		200	
Td	Demodulation delay	μs			500
Vo	Output voltage on CISPR16 load	dBμV		120	121
Zo	Output impedance in TX mode	Ω		7	
Zi	Input impedance in RX mode (at Fc)	Ω		100	
Vin	Input sensitivity	dBμV	70		



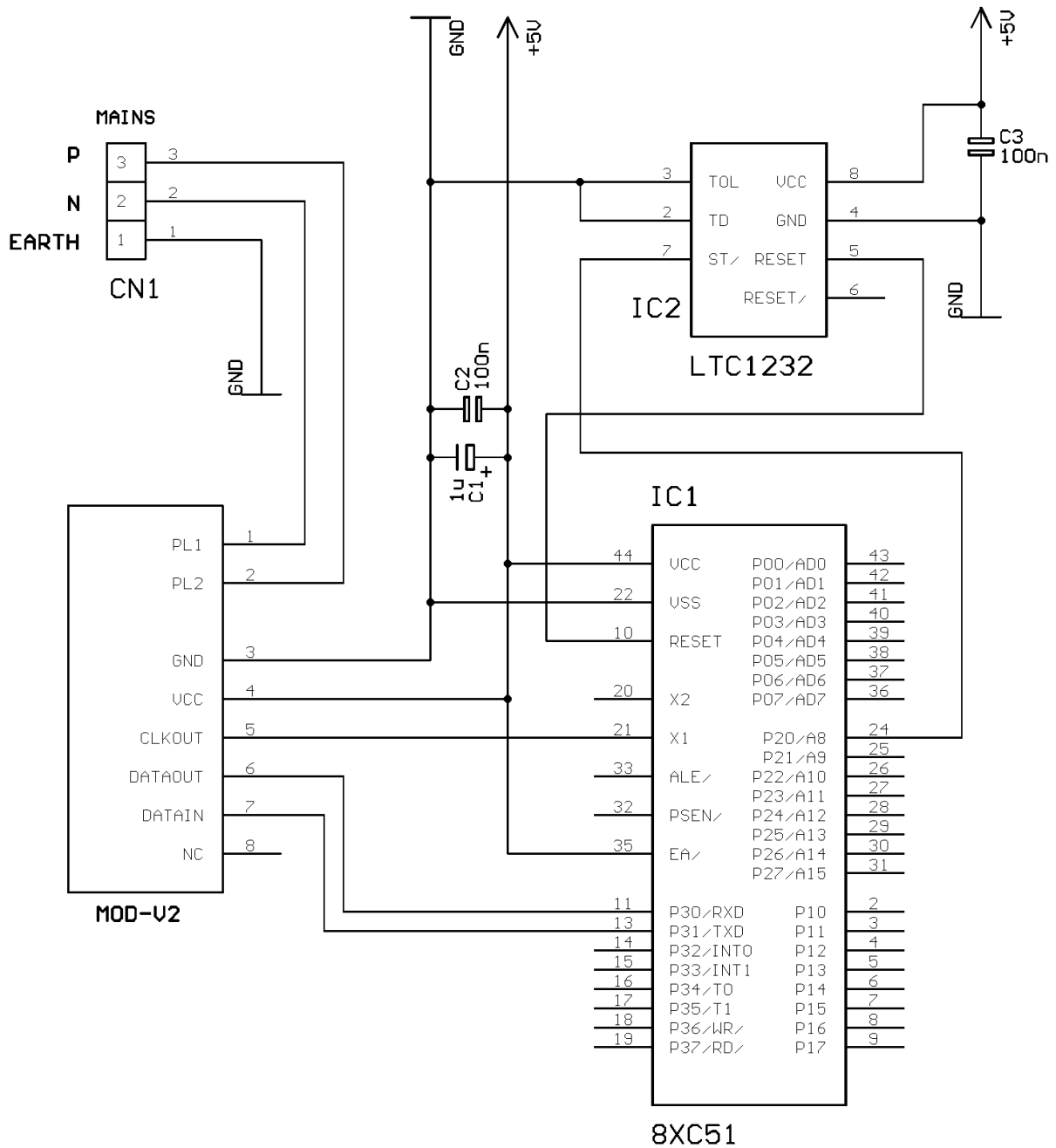
Typical output spectrum  
on 50 Ohms (Peak value – Max hold)



Transfer function of the  
input stage (Q~3)

**APPLICATION INFORMATION**

**Typical application diagram with a 8051 controller**  
(Pining is for a PLCC44 package)



**Note: Assuming P2.0 is the WatchDog reset output**

### A simple RS232 to Power Line interface

