Using LITELINK™ III In a LITELINK II Circuit

NOTE: Using LITELINK III in a LITELINK II circuit does not allow using the lower line current draw of LITELINK III. See section 2.2 on page 4 for complete information.

1. Introduction

LITELINK II (CPC5610 and CPC5611) and LITELINK III (CPC5620 and CPC5621) application circuits differ in some details, as expected, due to improvements in the IC. LITELINK III parts, however, can be used in LITELINK II circuits with few circuit modifications. This application note shows the changes required to use a circuit designed for the CPC5610 with the CPC5620.

Please note that these changes form an interim step where LITELINK III can be used in a LITELINK II design with only one small change in the layout of your printed-circuit board (for C_{GAT}) and some different resistors. IXYS Integrated Circuits Division, however, recommends using the application circuits included with the LITELINK III data sheets.

2. Conversions

2.1 Conversion from CPC5610 or CPC5611 to CPC5620 or CPC5621

For resistive termination applications like North American and Japan, R5 (R_{TXF}) becomes 60.4 kΩ, 1/16 W, 1%, R2 (R_{RXF}) becomes 130 kΩ, 1/16W, 1%, and R12 (R_{NTF}) becomes 499 kΩ, 1/16W, 1%. Add C19 (C_{GAT}). See Figure 1. on page 3 for more information.

For reactive termination applications, like most of Europe, R5 (R_{TXF}) becomes 60.4 kΩ, 1/16 W, 1%, R2 (R_{RXF}) becomes 130 kΩ, 1/16W, 1%, and R12 (R_{NTF}) becomes 221 kΩ, 1/16W, 1%. Delete C3 and connect pin 6 of the LITELINK to analog ground. Add C19 (C_{GAT}). See Figure 2. on page 4 for more information.

Figure 1. LITELINK II to LITELINK III Design Conversion for Resistive Termination Applications

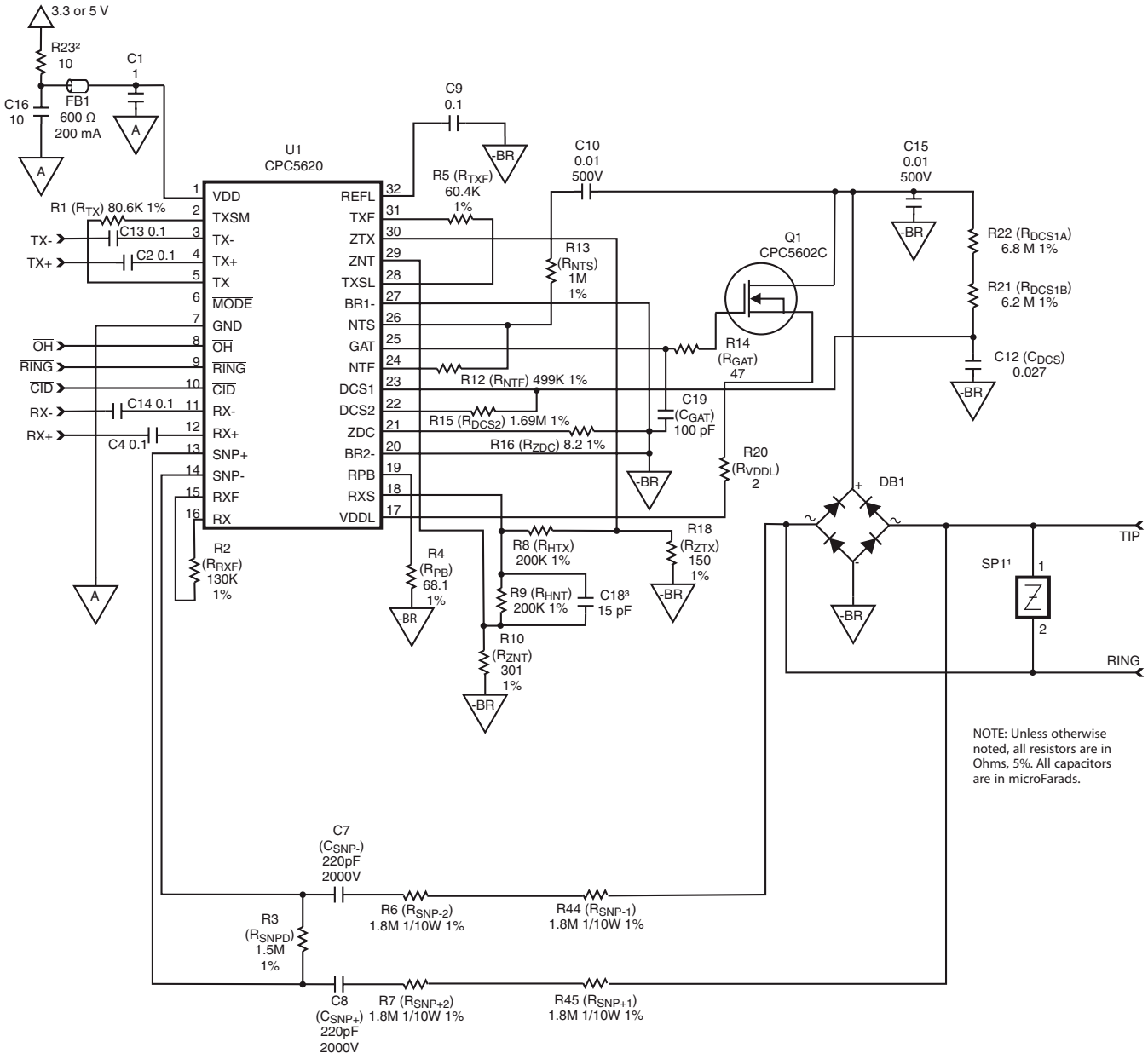
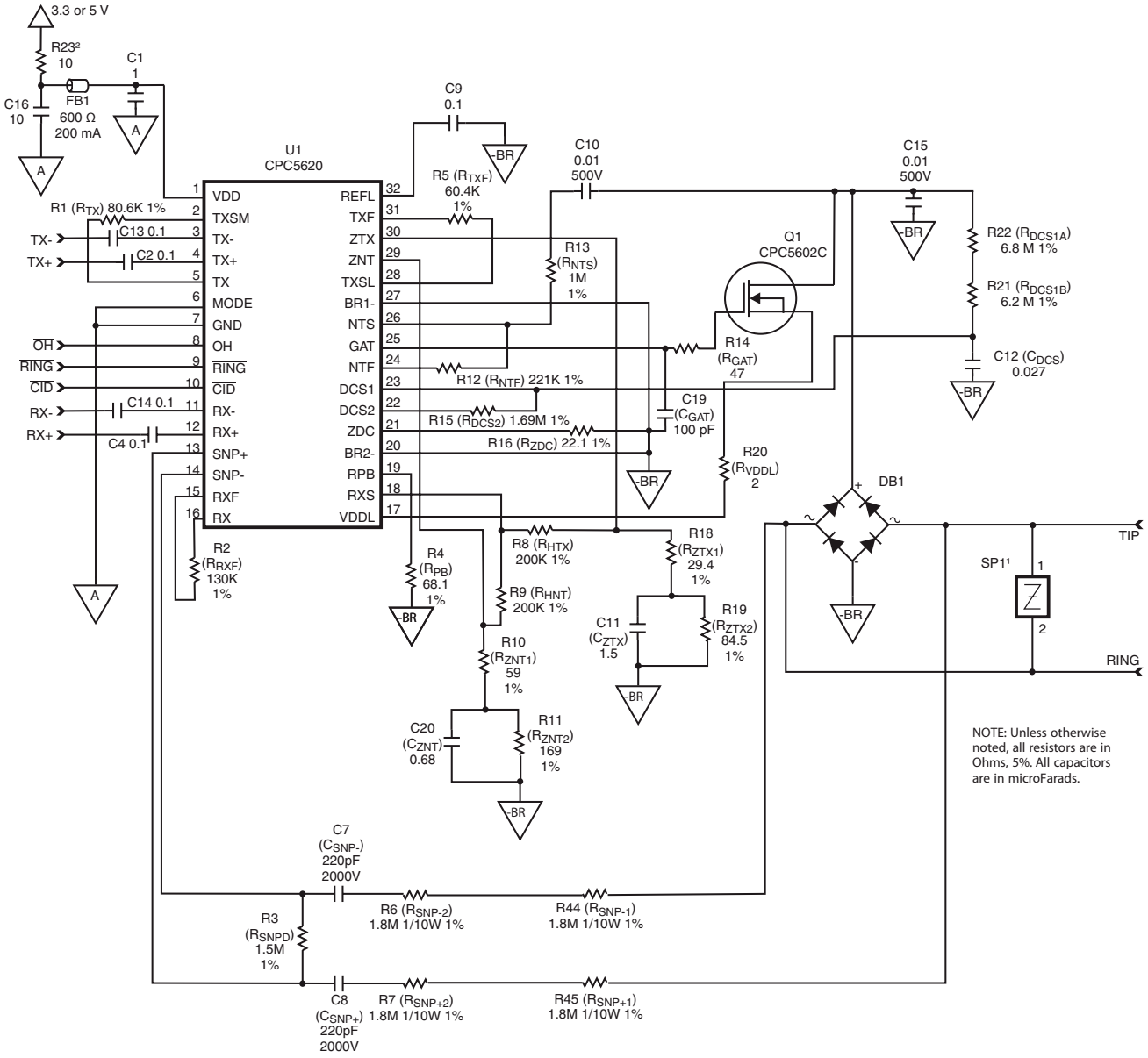


Figure 2. LITELINK II to LITELINK III Design Conversion for Reactive Termination Applications



2.2 Line Current Draw

With this circuit the I_{DDL} specification remains 12 mA maximum, the same specification as for CPC5610 and CPC5611. For lower I_{DDL} (8 mA maximum), use the CPC5620 and CPC5621 application circuit in the datasheet. This circuit uses a slightly different topology and will probably require new layout of the printed-circuit board.

3. LITELINK Design Resources

3.1 Design Resources

www.ixysic.com has a wealth of information useful for designing with LITELINK, including application notes and reference designs that already meet all applicable regulatory requirements. LITELINK data sheets also contains additional application and design information. See the following links:

LITELINK datasheets and reference designs

Application note AN-114 **ITC117P**

Application note AN-117 **Customize Caller-ID Gain and Ring Detect Voltage Threshold for CPC5610/11**

Application note AN-140, **Understanding LITELINK**

Application note AN-146, **Guidelines for Effective LITELINK Designs**

Application note AN-150, **Ground-start Supervision Circuit Using IAA110**

3.2 Third Party Design Resources

The following also contain information useful for DAA designs. All of the books are available on amazon.com

Understanding Telephone Electronics, Stephen J. Bigelow, et. al., Butterworth-Heinemann; ISBN: 0750671750

Newton's Telecom Dictionary, Harry Newton, CMP Books; ISBN: 1578200695

Photodiode Amplifiers: Op Amp Solutions, Jerald Graeme, McGraw-Hill Professional Publishing; ISBN: 007024247X

Teccor, Inc. Surge Protection Products

United States Code of Federal Regulations, CFR 47 Part 68.3

For additional information please visit our website at: www.ixysic.com

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