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MC145572EVK ISDN U-INTERFACE TRANSCEIVER EVALUATION KIT

A.1 INTRODUCTION

The MC145572EVK ISDN U–Interface Transceiver Evaluation Kit provides Motorola ISDN customers a convenient and efficient vehicle for evaluating the MC145572 ISDN U–interface transceiver. The approach taken to demonstrate the MC145572 ISDN U–interface transceiver is to provide the user with a fully functional NT1 (Network Termination TYPE 1) connected to an LT (Line Termination). An NT1 provides transparent 2B + D data transfer between the U– and S/T–interfaces. In addition, it must also provide for network–initiated maintenance procedures. It does not, however, provide any interface to higher level protocols — this functionality is left to entities such as the NT2 (Network Termination Type 2).

The MC145572EVK ISDN U–Interface Evaluation Kit can be physically and functionally separated into two “halves”. The left side of the card is the NT1 while the right side of the card is the LT. Alternatively it can be thought of as having both ends of the two wire U–interface, extending from the customer premise (NT1) to the digital switch line card (LT), on a single standalone evaluation board.

The kit provides the ability to interactively manipulate status registers in the MC145572 ISDN U–interface transceiver as well as in the MC145474/75 S/T–interface transceiver with the aid of an external terminal or PC. A unique combination of hardware and software features allows for standalone or terminal activation of the U–interface and as such provides an excellent platform for NT1 and LT hardware/software development.

The MC145572EVK ISDN U–Interface Evaluation Kit can be interfaced directly to the MC68302 Integrated Multiprotocol Processor Development System to aid in the hardware and software development of S/T– and U–interface terminal equipment.

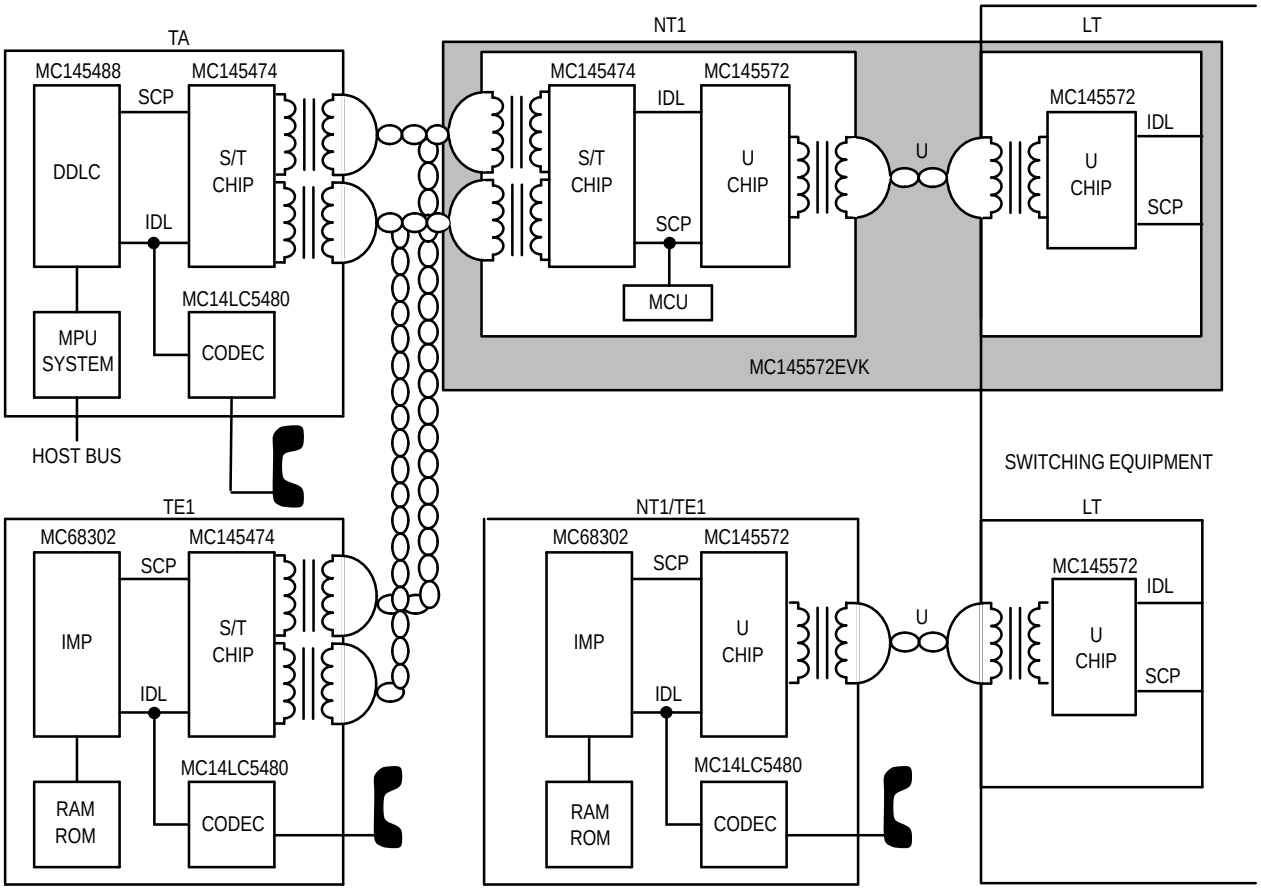

Figure A–1. Motorola Silicon Applications and the MC145572EVK

A.2 FEATURES

A.2.1 General

- Provides Standalone LT and NT1 on Single Board
- Board Can Be Broken Apart Providing Separate LT and NT1
- On–Board Microcontrollers with Resident Monitor Software
- Convenient Access to Key Signals
- Generous Prototype Area for Application Development
- LT and NT1 Software Development Platform
- Extensive User Manual

A.2.2 Hardware

- +5 V Only Power Supply
- “Push Button” Activation of U–Interface from LT or NT1
- Standalone Operation for Bit Error Rate Testing
- Gated Data Clocks Provided for Bit Error Rate Testing
- Interfaces Directly to ADS302 IMP Evaluation Board
- Can Be Used as U– or S/T–Interface Terminal Development Tool
- On–Board 5 ppm LT Frequency Reference
- EIA–232 (V.28) Serial Port(s) for Terminal Interface
- Configurable for IDL2 and GCI Operation

A.2.3 Software

- Standalone or Terminal Operation
- Resident Firmware Monitor for User Control of Board
- Device Driver for Serial Control Port Interface
- Microcontroller Controlled or Automatic Activation/Deactivation
- Access to All Maintenance Channels
- MC68HC05 Assembly Language Source Code Available
- Enhanced Command Set from the MC145494EVK

A.3 BLOCK DIAGRAM

Figure A–2 is a basic functional block diagram of the MC145572EVK ISDN U–Interface Evaluation Kit. Note that the dotted line represents the physical and logical separation between the LT and the NT1 sides of the evaluation board. While the board is capable of activating “standalone”, the user may decide to use a single ASCII terminal to gain total control of the MC145572EVK capabilities. Or the user may choose to split the board, allowing the LT and NT1 portions to be physically located in separate areas.

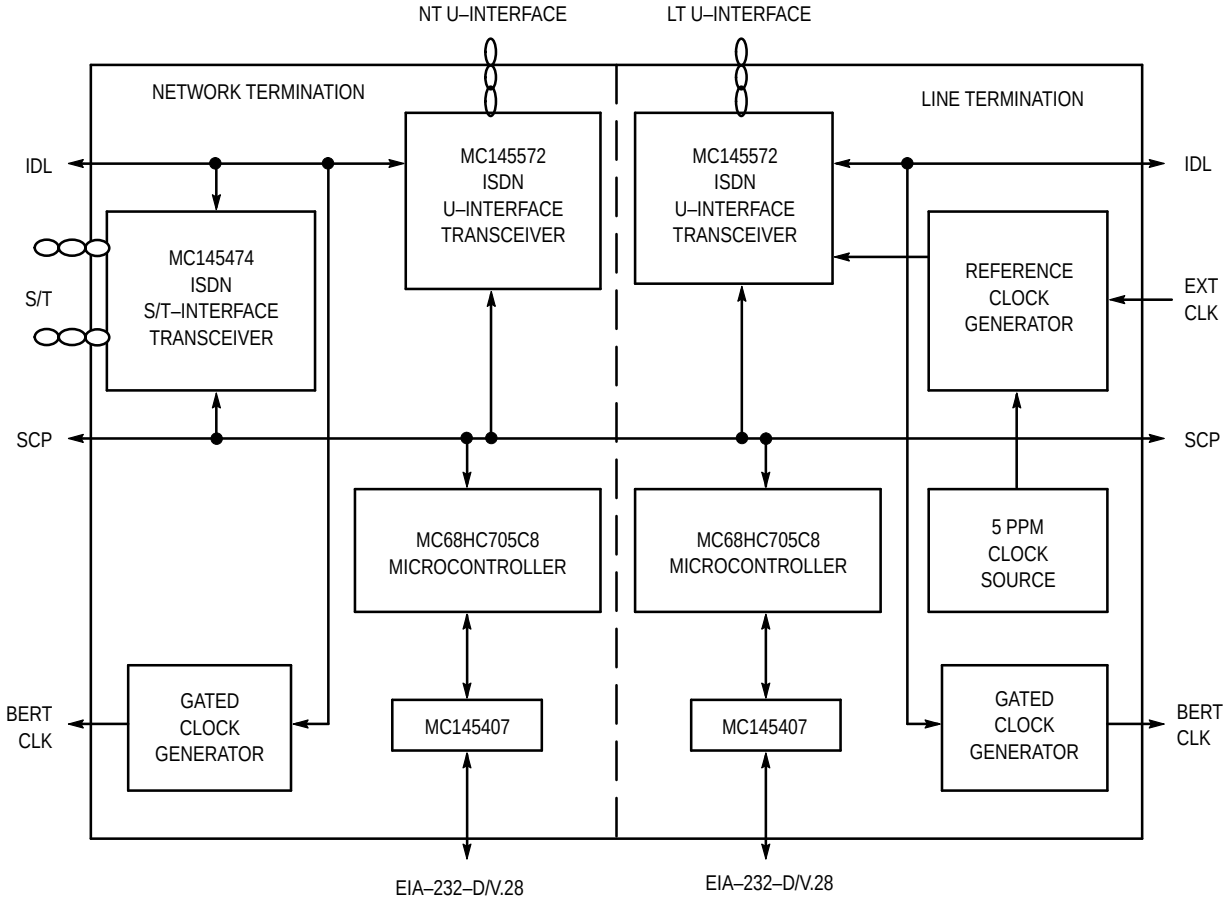

Figure A–2. MC145572EVK Functional Block Diagram