

PART

5

Analog and
Mixed-Signal
Boundary-Scan
(IEEE 1149.4 Std.)



5.1 The Simplest Concept of 1149.4

The simplest concept of the 1149.4 Standard is to imagine that we have integrated a portion of an ATE system's analog measurement bus and multiplexing system into an IC, eliminating the need for ICT access to it.

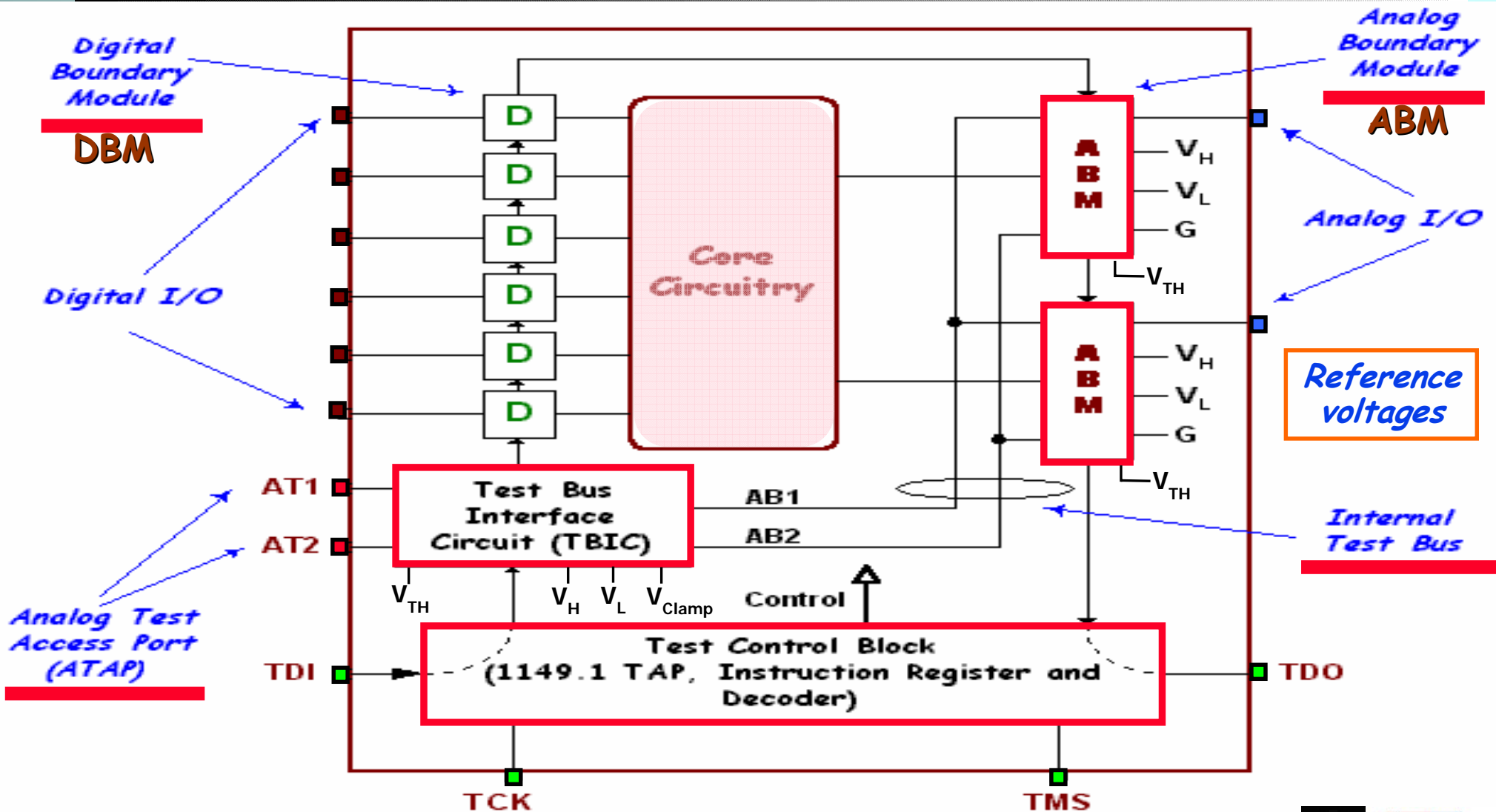
Ken Parker



The first important characteristic to note about the IEEE 1149.4 Std is that it is intended for use with lower frequencies: from DC to around 10 MHz. If this seems like a serious limitation, consider the fact that virtually all the boards tested with ICT over the last 25 years have had their analog components tested at 10 kHz or less !



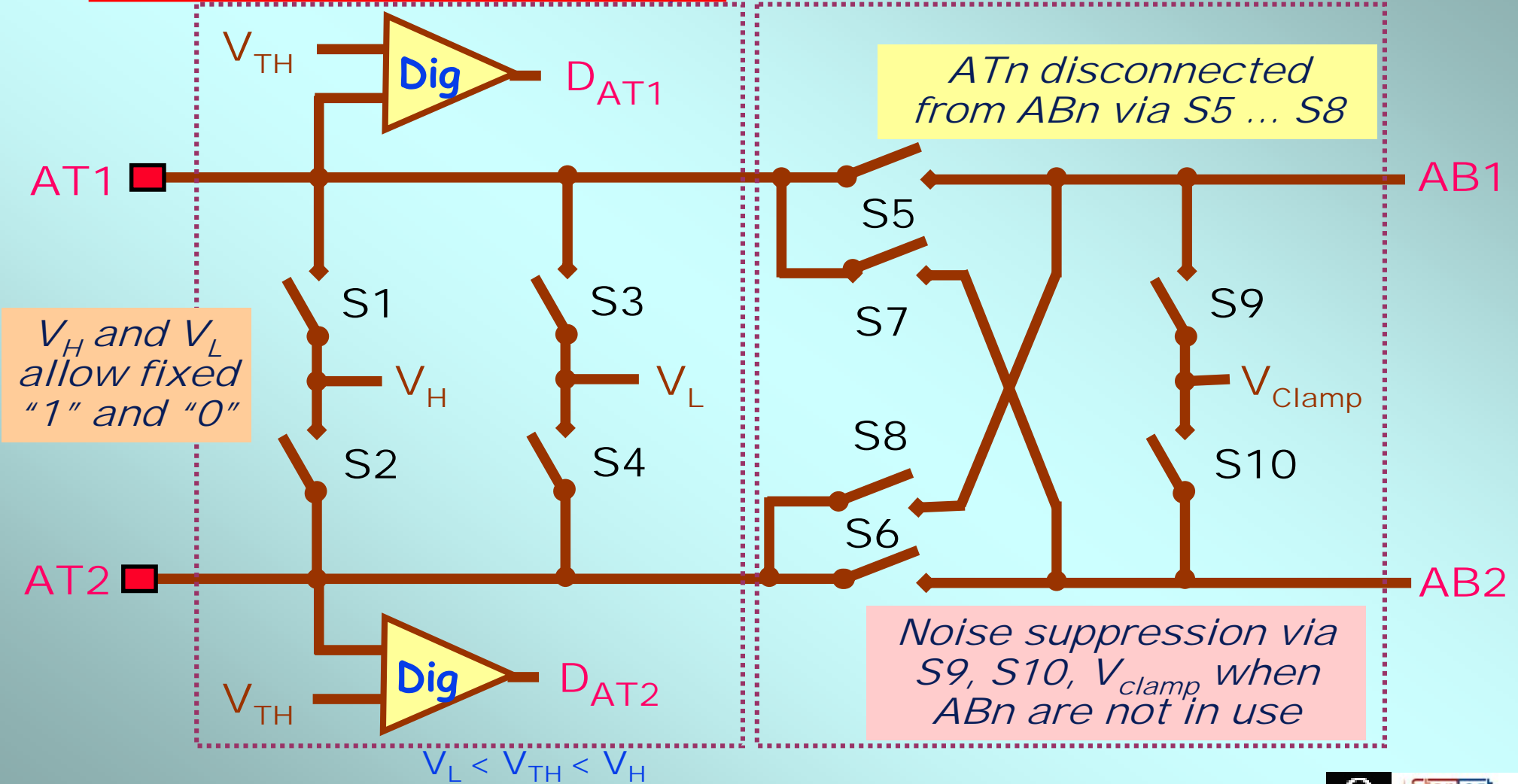
5.2 General Architecture of 1149.4 Device



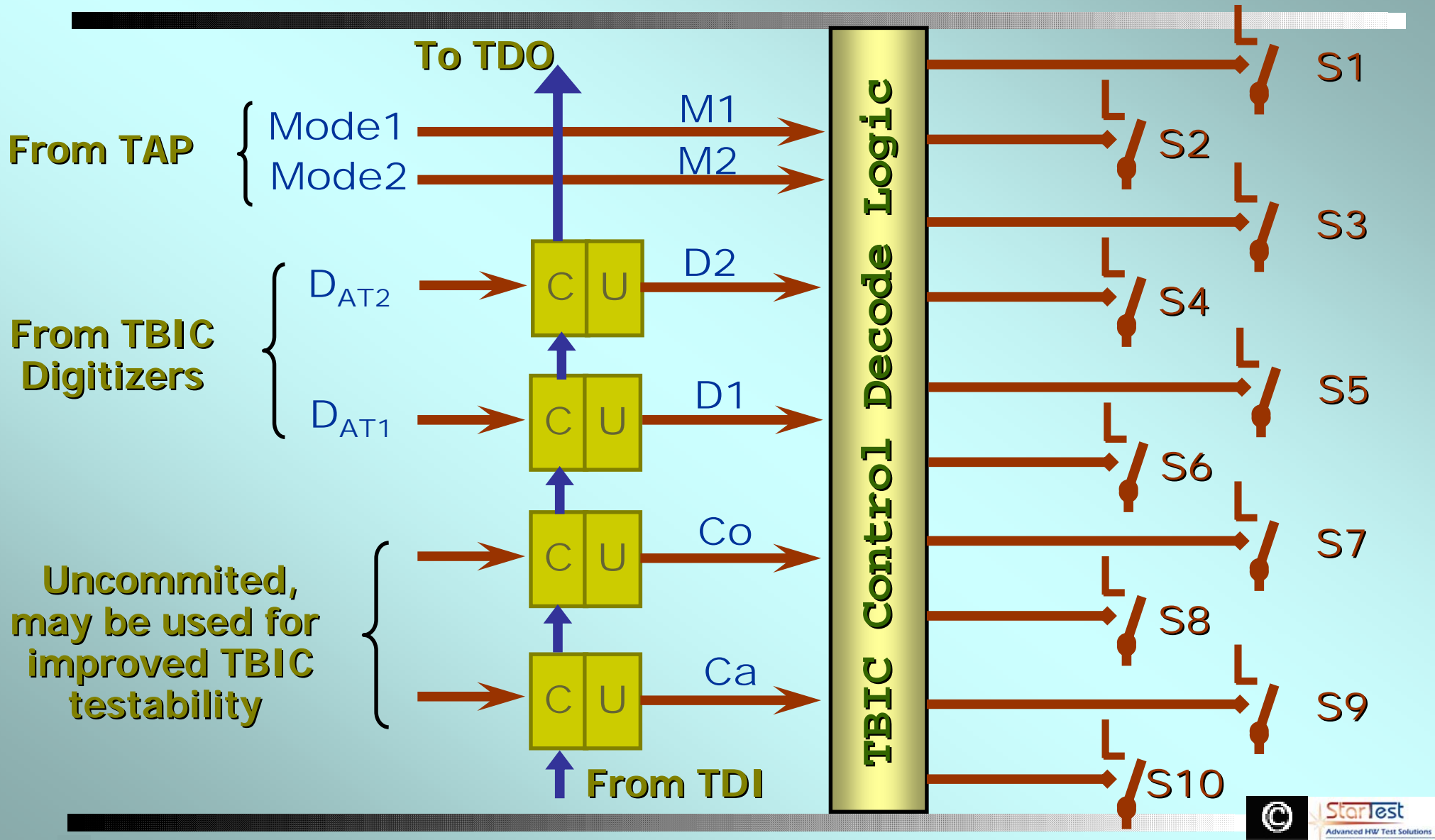
5.3 TBIC Switching Structure

For Interconnect Test on AT1/AT2 pins

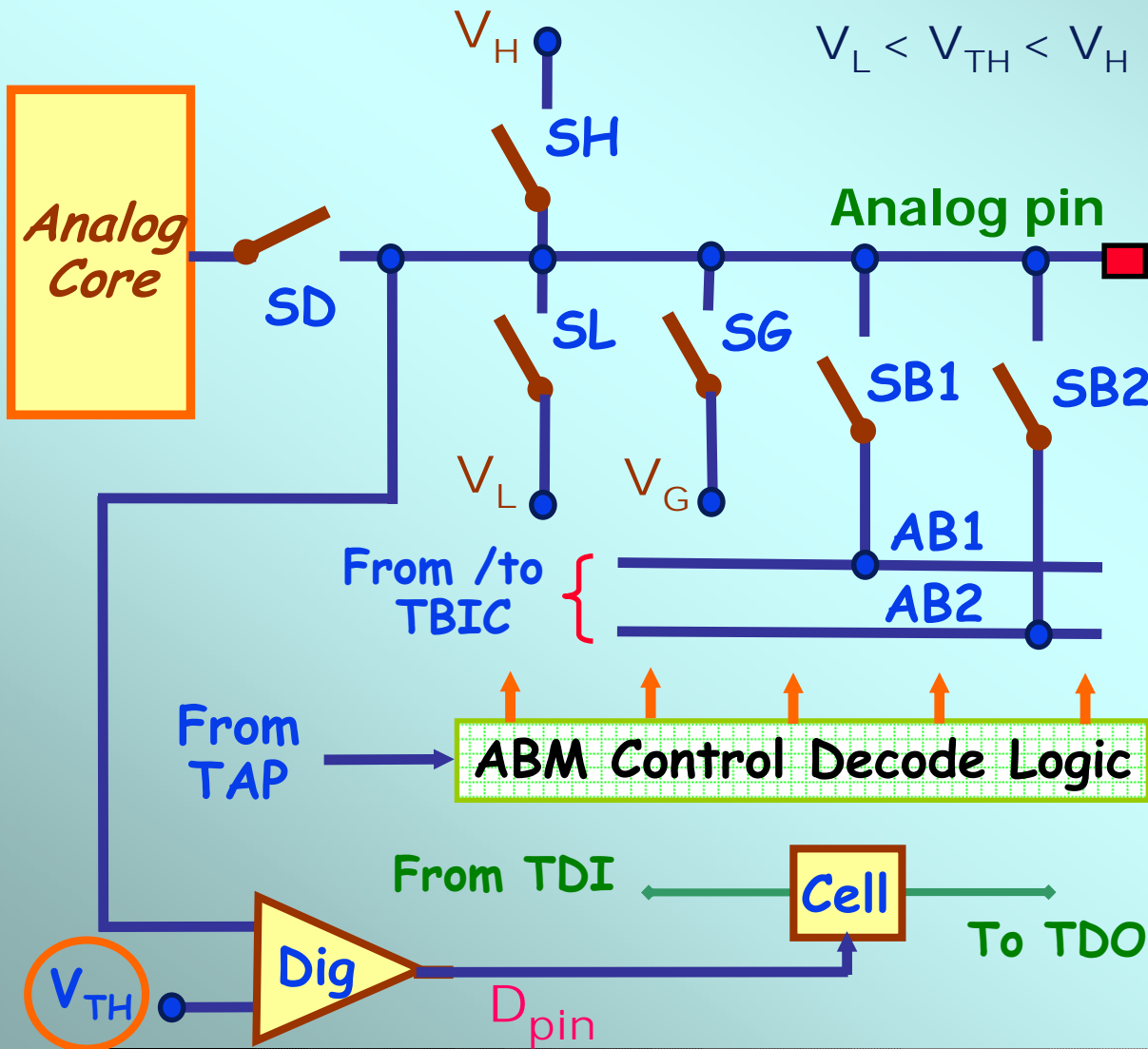
For Isolation and Characterization



5.4 Control Structure for TBIC Switches



5.5 ABM Switching Structure



One-bit digitizer that creates a digital interpretation of the voltage on the analog I/O pin and used to support 1149.1-style interconnect tests

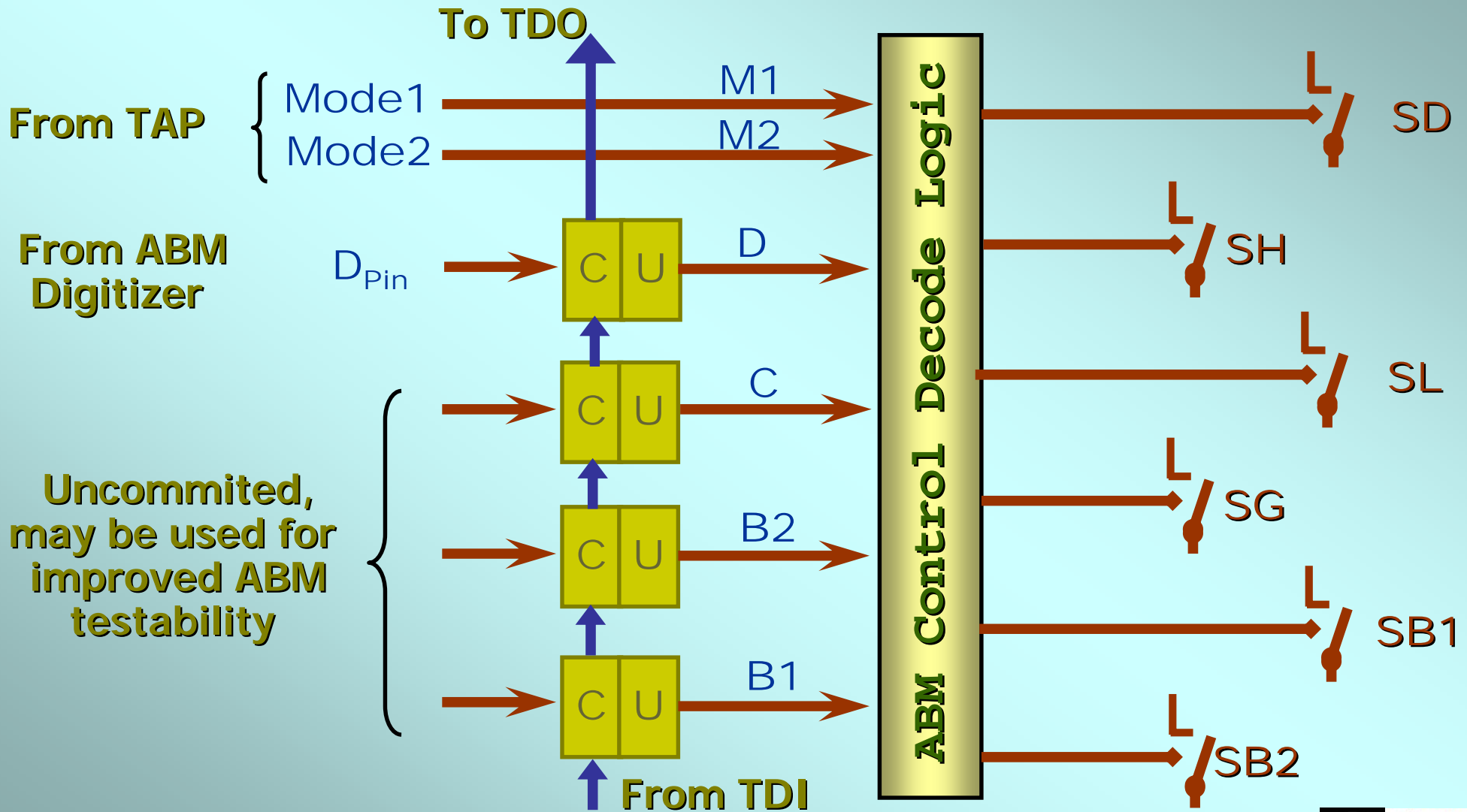
Voltages V_L and V_H are used to create digital voltage levels on the analog pin in support of 1149.1-style interconnect tests

Voltage V_G is used in support of analog metrology. It should be a *reference quality* voltage

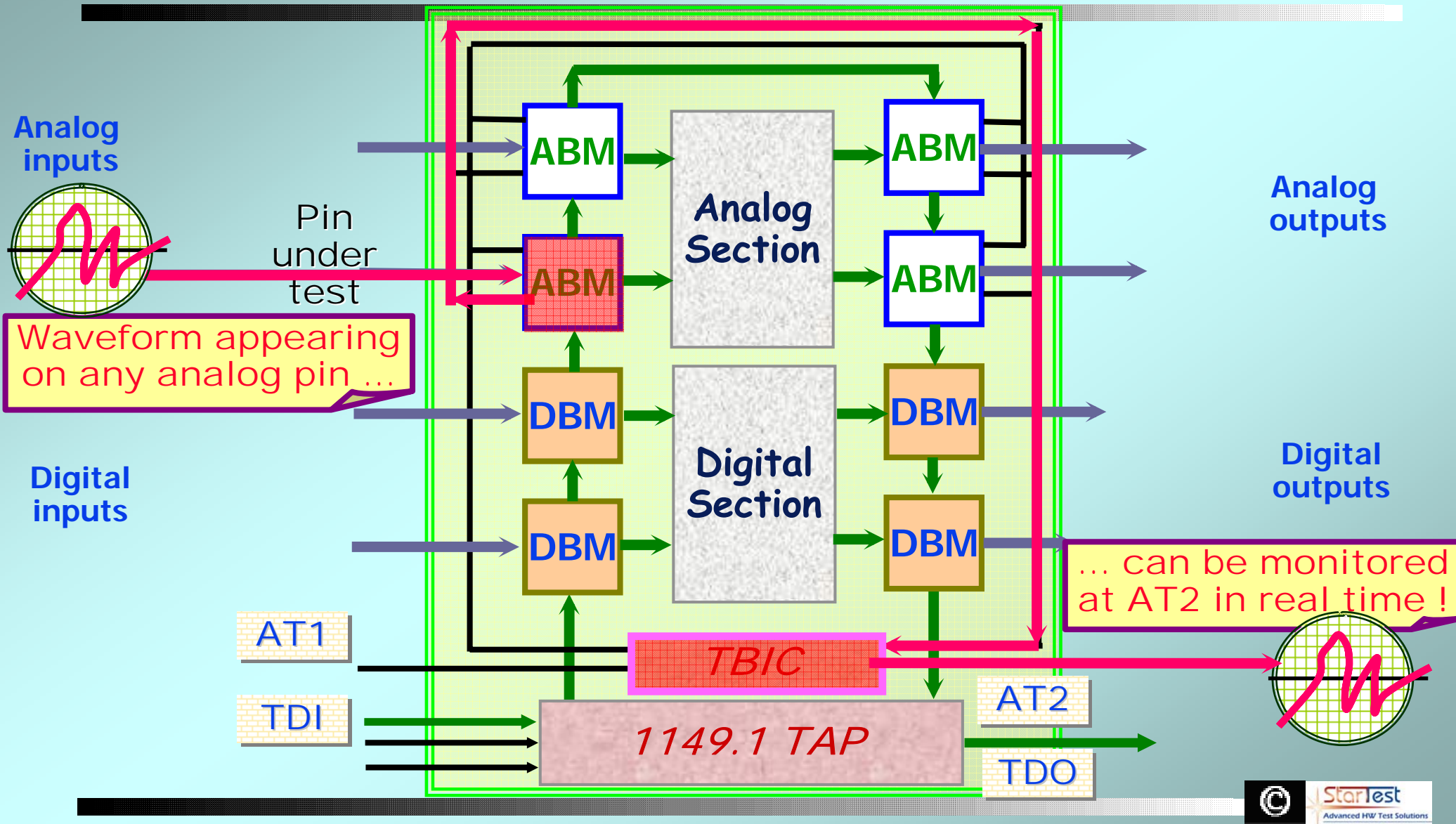
Internal measurement bus wires **AB1** and **AB2**: it's required that **AB1** be able to provide a current to the pin, and that **AB2** be able to monitor the pin voltage



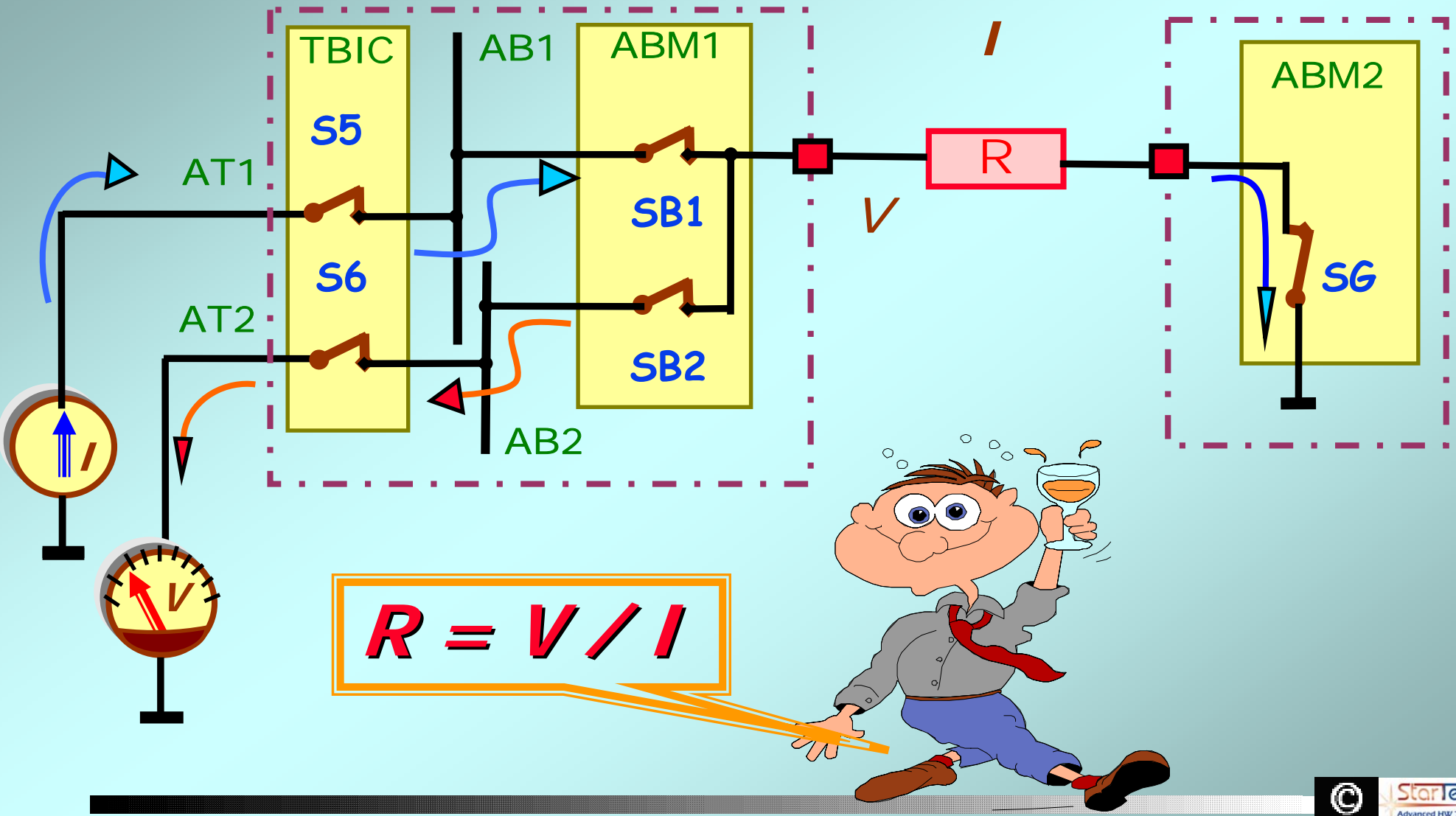
5.6 Control Structure for ABM Switches



5.7 PROBE Instruction



5.8 DC Measurements



*Are you interesting to continue ?
Explanations and details ?
Please contact us now !*

Click

<http://www.Start-Test.com/University/CoursesSeminars.aspx>