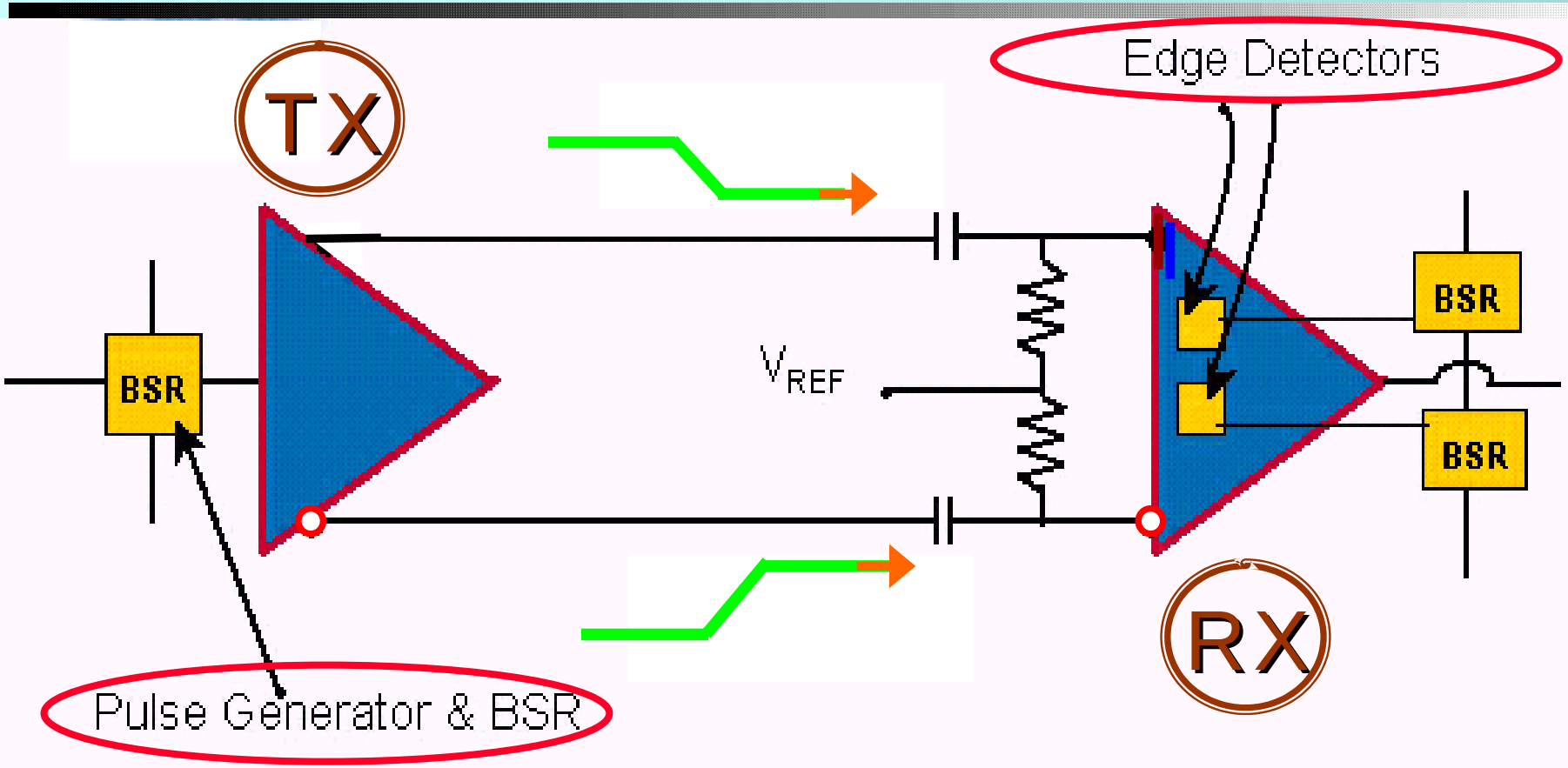
PART 4

Testing Advanced I/O (IEEE 1149.6 Std.)

4.1 A Dot-6 General Concept



- Supports IEEE 1149.1 Interconnect
- Edge Generation/Detection for AC coupled tests

4.2 Test Modes and Instruction Set

DC Test Mode:

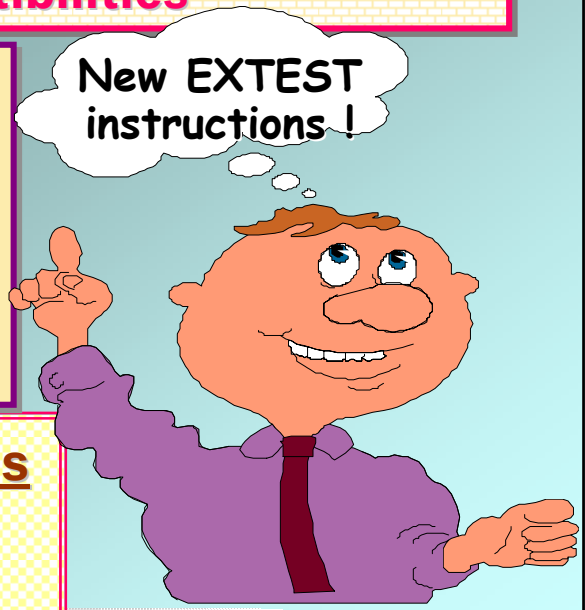
A test mode that enables traditional Boundary-Scan testing between DC pins that are DC-coupled

AC Test Mode:

A test mode that enables Boundary-Scan testing between AC pins that are AC-coupled or DC-coupled.
AC testing of DC-coupled pins may enable testing that cannot be supported in DC Test Mode due to voltage level incompatibilities

New 1149.6 AC EXTEST instruction set:

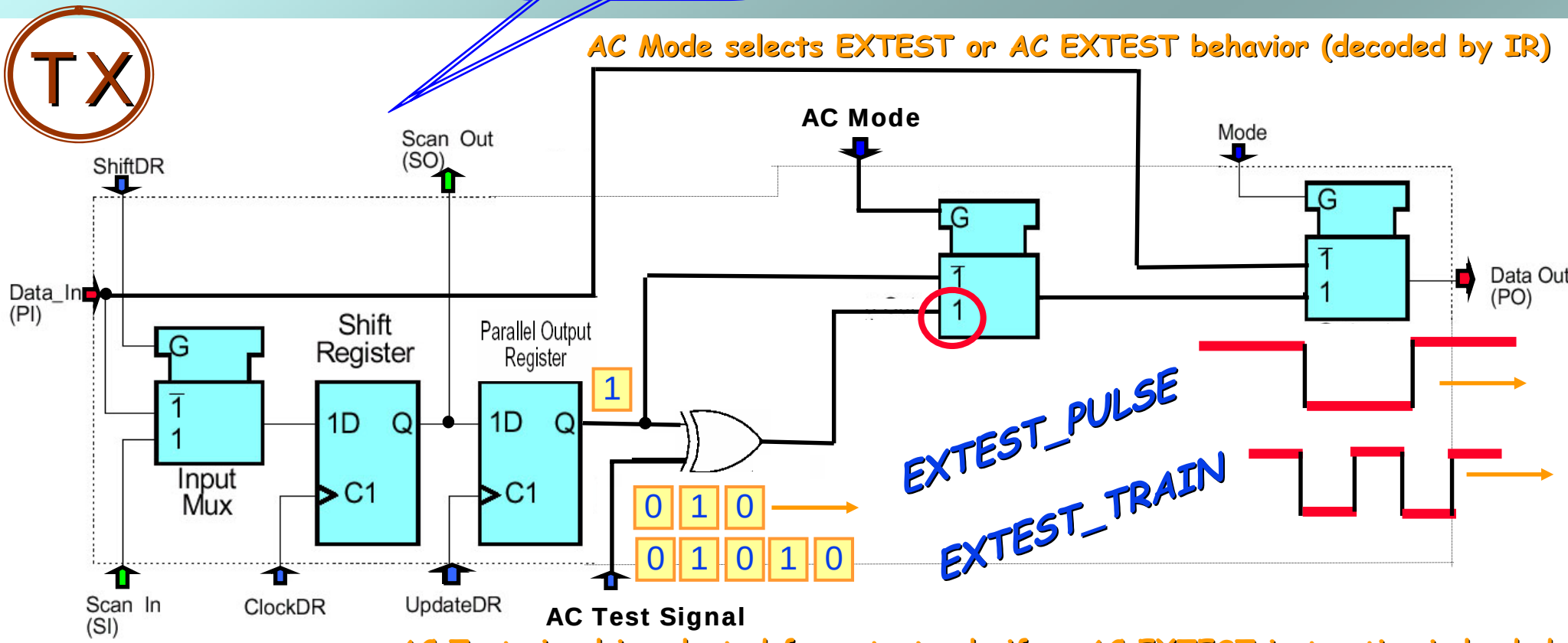
- DC pins behave as 1149.1-style ***EXTEST***
- AC pins behave according to additional ***EXTEST_PULSE*** & ***EXTEST_TRAIN***



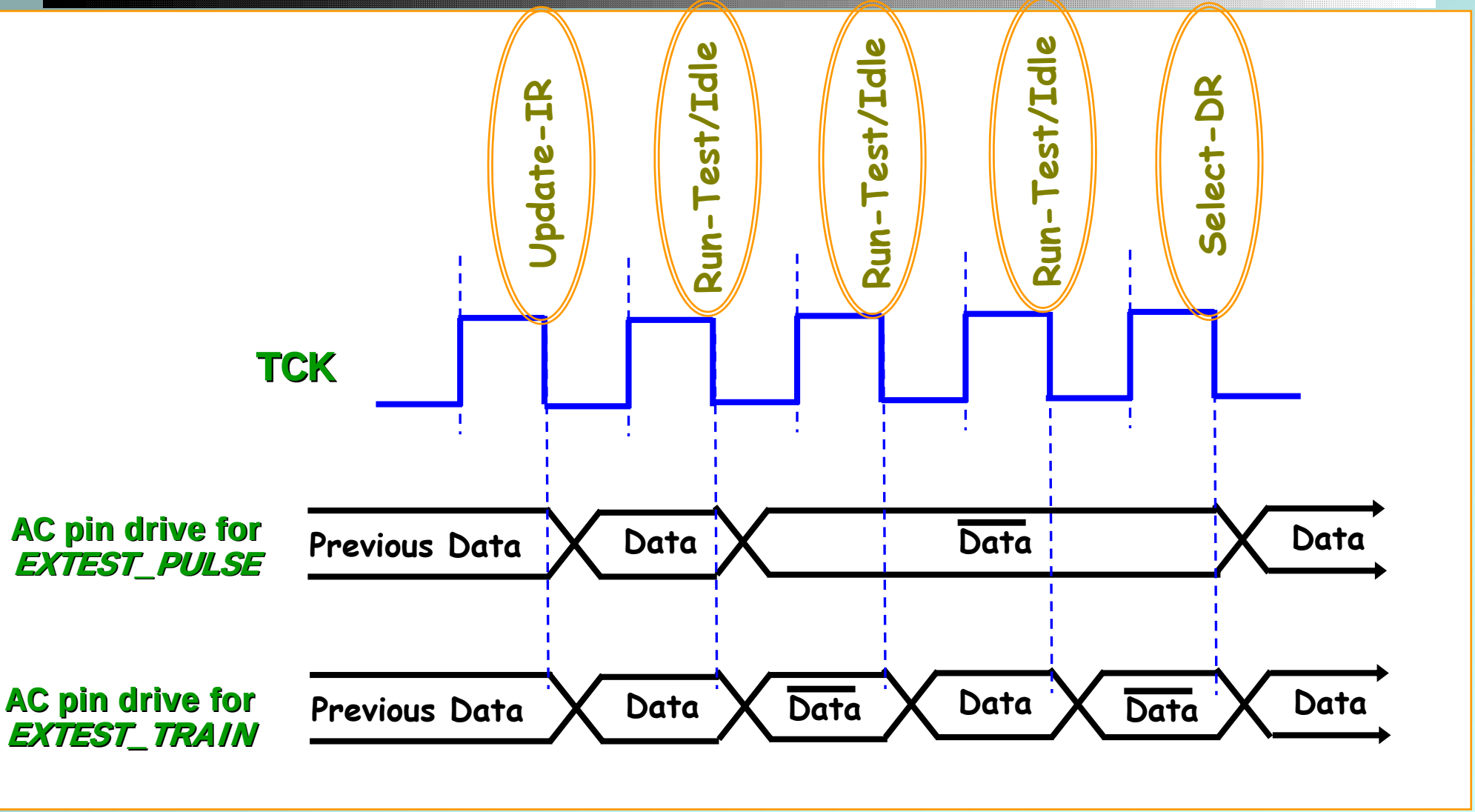
The 1149.6 does not separate digital and analog signals for the purpose of test, so differential signals are not to be ignored because they "may be analog"

4.3 AC Pin Output Data Cell

1149.6 Std works by generating and detecting transitions on pins

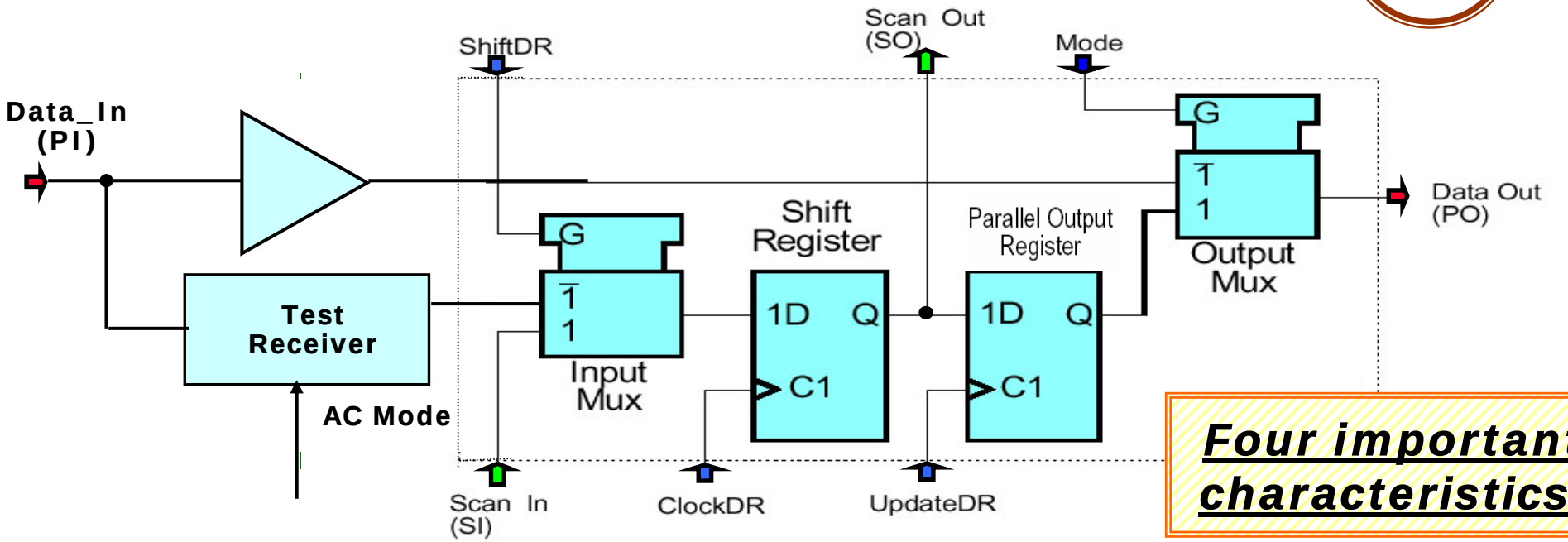


4.4 AC Pin Driver Waveforms



4.5 AC Pin Receiver Cell

The test receiver is the heart of the 1149.6 Std, but not a part of a dot-6 BSR cell !

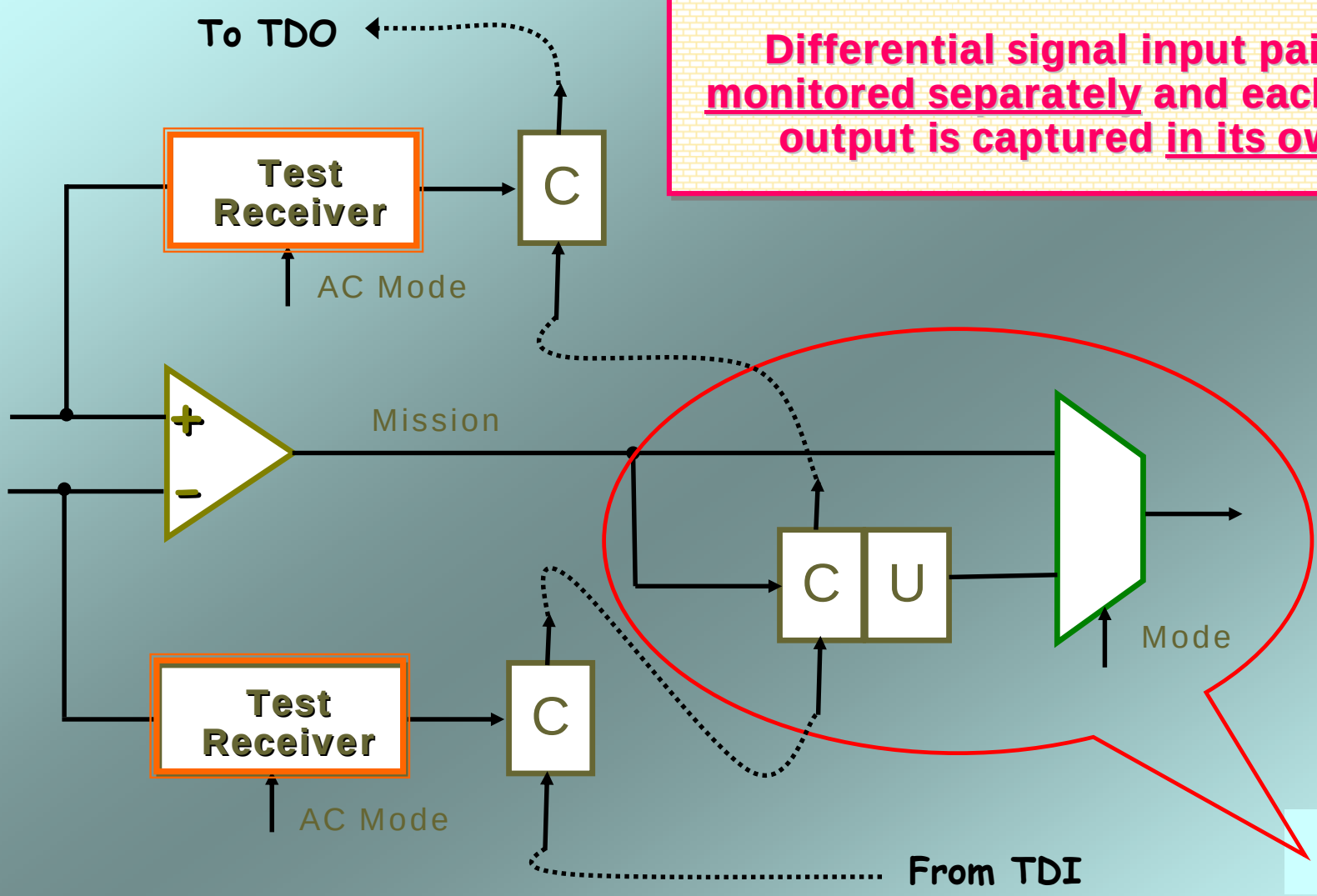


Four important characteristics:

1. Single ended, it do not use another pin for reference in differential structures
2. Provided **one per pin**, so a differential signal pair would have one for each pin **(see next)**
3. **Edge sensitive** when *EXTEST_PULSE* or *EXTEST_TRAIN* are in effect. Responds to signal **edges, not levels** ! As such, it do not have defined reference voltages for LL or LH.
4. Transparent to DC levels when EXTEST is in effect

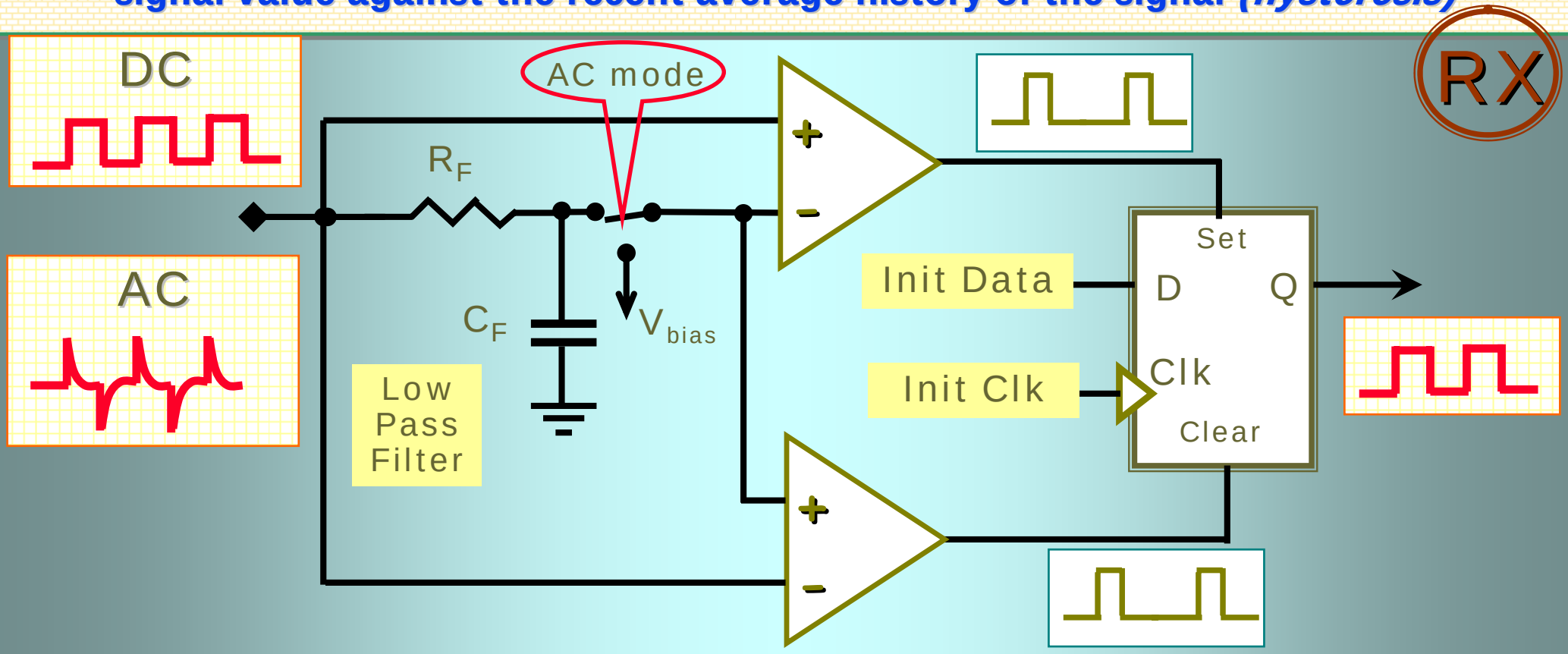
4.6 AC Pin Pair Test Receiver Cells

Differential signal input pairs are each monitored separately and each test receiver output is captured in its own BSR cell



4.7 AC Test Receiver

This is a "self-referenced" comparison scheme (edge-detector) as the comparator is not using any fixed voltage reference.
Instead, the comparator is comparing the instantaneous signal value against the recent average history of the signal *(hysteresis)*



Are you interesting to continue ?

Explanations and details ?

Please contact us now !

Click

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