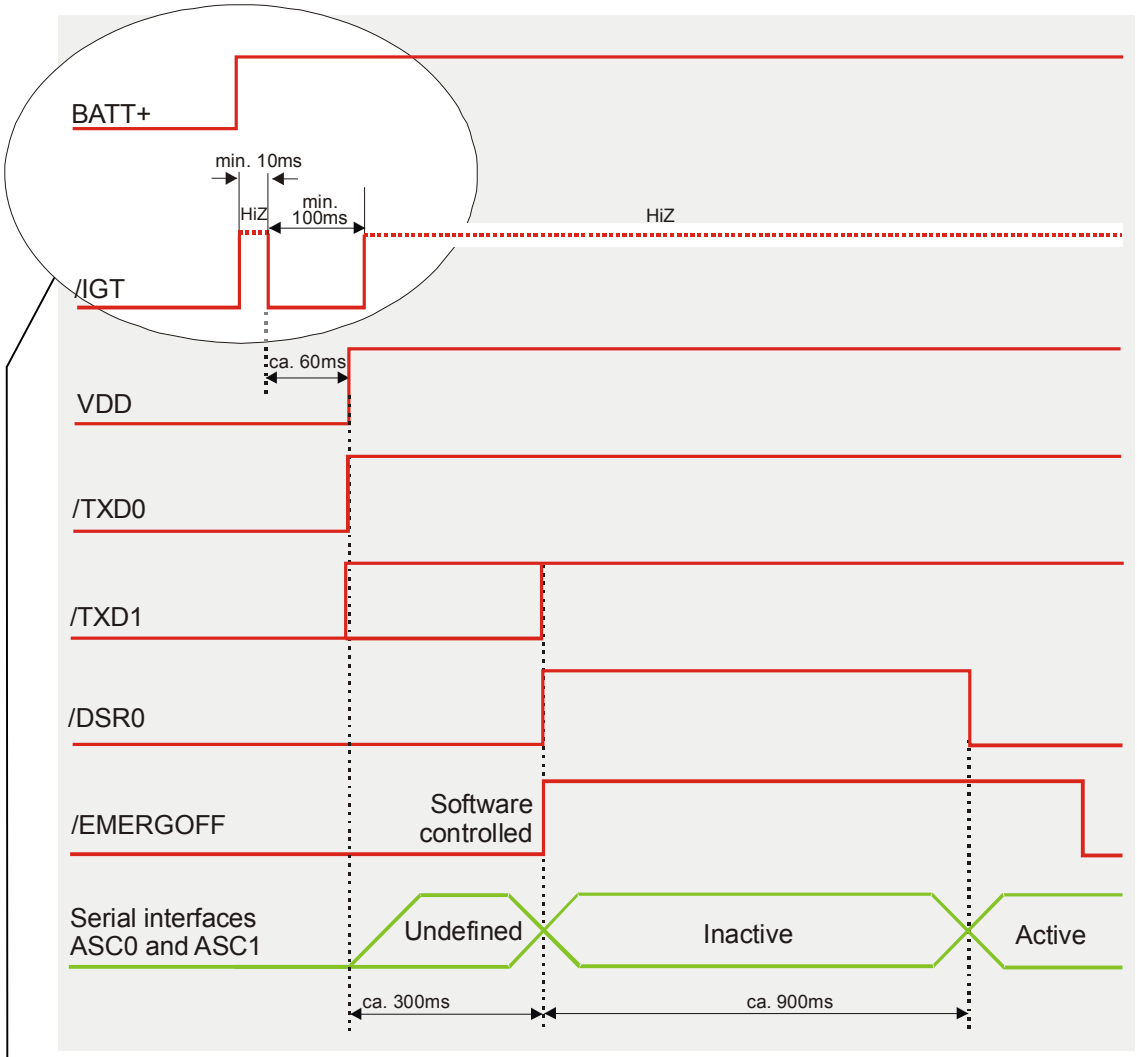
3.3.1.1 Turn on MC55/56 using the ignition line /IGT (Power on)

To switch on MC55/56 the /IGT (Ignition) signal needs to be driven to ground level for at least 100ms and not earlier than 10ms after the last falling edge of VDD. This can be accomplished using an open drain/collector driver in order to avoid current flowing into this pin.



For details please see Chapter 3.3.1.2

Figure 3: Power-on by ignition signal

In a battery operated MC55/56 application, the duration of the /IGT signal must be 1s minimum when the charger is connected and you may want to go from Charge only mode to Normal mode.

Assertion of CTS indicates that the module is ready to receive data from the host application. In addition, if configured to a fixed bit rate (AT+IPR≠0), the module will send the URC "^SYSSTART" which notifies the host application that the first AT command can be sent to the module. The duration until this URC is output varies with the SIM card and may take a couple of seconds, particularly if the request for the SIM PIN is deactivated on the SIM card.

Please note that no "^SYSSTART" URC will be generated if autobauding (AT+IPR=0) is enabled.

To allow the application to detect the ready state of the module we recommend using hardware flow control which can be set with AT\Q or AT+ICF (see [1] for details). The default setting of MC55/56 is AT\Q0 (no flow control) which shall be altered to AT\Q3 (RTS/CTS handshake). If the application design does not integrate RTS/CTS lines the host application shall wait at least for the "^SYSSTART" URC. However, if the URCs are neither used (due to autobauding) then the only way of checking the module's ready state is polling. To do so, try to send characters (e.g. "at") until the module is responding. However, as shown in Figure 3 there should be an ample time period between ignition and before polling and sending any AT commands. AT commands received while the interface's state is undefined may retrigger the boot loader and the module's startup sequence.

3.3.1.2 Timing of the ignition process

When designing your application platform take into account that powering up MC55/56 requires the following steps.

- The ignition line cannot be operated until V_{BATT+} passes the level of 3.0V.
- The ignition line shall not be operated earlier than 10ms after the last falling edge of VDD.
- 10ms after V_{BATT+} has reached 3.0V the ignition line can be switched low. The duration of the falling edge must not exceed 1ms.
- Another 100ms are required to power up the module.
- Ensure that V_{BATT+} does not fall below 3.0V while the ignition line is driven. Otherwise the module cannot be activated.
- If the VDDLP line is fed from an external power supply as explained in Chapter 3.8, the /IGT line is HiZ before the rising edge of BATT+.

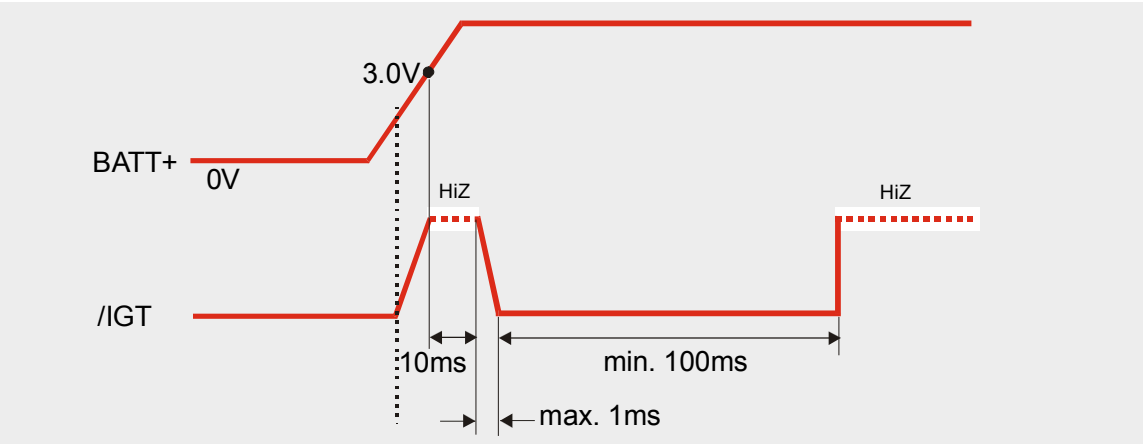


Figure 4: Timing of power-on process if VDDLP is not used