TDS3UAM

Universal Application Module for
Tektronix TDS3000 Series Oscilloscopes

Newer versions of the Tektronix firmware for TDS3000 oscilloscopes provide the TDS3FFT and TDS3TRG functionality by default. There are other features available which are enabled by plug-in modules;

TDS3AAM   Provides useful waveform math functions.
TDS3VID   Video line triggering.
TDS3LIM   Limit test waveforms with user created masks.
TDS3TMT   Mask testing for some standard telecoms signals.

Each of these modules contains one 256 byte I^2C EEPROM with a null terminated string "TDS3xxx" starting at address 0x04 to enable the corresponding features. By using a 1Kbyte or larger EEPROM all features can be enabled using just one physical module. EEPROMs larger than 2Kbytes have an additional address byte and are not compatible.

```
:10000000FFFFFFFF5444533341414D00FFFFFFFF0B
:10005000FFFFFFFF76312E303000FFFFFFFFFFFF75
:10010000FFFFFFFF544453334C494D00FFFFFFFFF7
:10015000FFFFFFFF76312E303000FFFFFFFFFFFF74
:10020000FFFFFFFF54445333544D5400FFFFFFFFE3
:10025000FFFFFFFF76312E303000FFFFFFFFFFFF73
:10030000FFFFFFFF5444533356494400FFFFFFFFF4
:10035000FFFFFFFF76312E303000FFFFFFFFFFFF72
:00000001FF
```
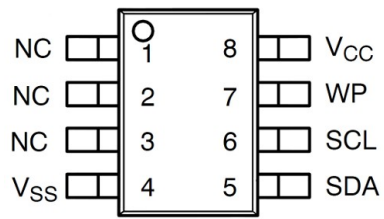
Intel Hex File "TDS3UAM.hex"

The suggested parts to make a TDS3UAM are;

Tektronix TDS3000 Dummy/Empty Module
Sim-Card Connector (e.g. Nokia 1110 type)
24C16 EEPROM SOIC8 5V
Blob of Blu-Tack

The 24C16 EEPROM has more memory than is actually required but has a useful feature – pins 1, 2 & 3 are not connected which makes soldering it to the SIM connector a little easier.

Procedure

1. Erase the EEPROM then program it with the Intel Hex file given above. To create the hex file, simply copy and paste everything inside the box above to a new text file named "TDS3UAM.hex".

2. Lay the EEPROM upside down on the solder side of the SIM connector

3. Make the connections shown in the following pictures. Only one jumper wire is needed, all other connections can be done with solder bridges. It seems to work fine without a supply de-coupling capacitor fitted.

4. Assemble the EEPROM and SIM connector into the empty module at the position shown.

5. Plug it in to the scope and check the features are enabled.

NC ▭▭ 1 O ┃ 8 ▭▭ V_CC
NC ▭▭ 2 ┃ 7 ▭▭ WP
NC ▭▭ 3 ┃ 6 ▭▭ SCL
V_SS ▭▭ 4 ┃ 5 ▭▭ SDA

24C16 TOP VIEW

SIM CONNECTOR

8   1
24C16
UPSIDE
DOWN
5   4

SCL A1
5V GND
SDA A0

QUICKMENU

UTILITY

TRIGGER ACQUIRE

LEVEL

RUN/
STOP

Tektronix TDS 3034B FOUR CHANNEL COLOR DIGITAL PHOSPHOR OSCILLOSCOPE e•Scope

Run Auto

Tektronix

TDS 3034B Digital Phosphor Oscilloscope
Version v3.41

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Application Modules Detected:
• TDS3TRG Advanced Trigger
• TDS3VID Extended Video
• TDS3FFT FFT
• TDS3AAM Advanced Analysis
• TDS3LIM Limit Test
• TDS3TMT Telecom Mask Test

Communication Modules Detected:
• None

Power–On self check PASSED.

Push MENU OFF to proceed.

Ch1 10.0 V   Ch2 10.0 V   M1.00ms A Ch4 200mV
Ch3 10.0 V   Ch4 10.0 V

50.00 %

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