G711 Decoder

Build Procedure Document

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1. Building the Sample Application

1.1 Introduction

The document mentions the following details:

- Pre-requisites for the build: This section contains all the pre-requisites for building the test application like the files required etc.
- Usage Instructions: A step by step process of how to build and run the test application

1.2 Pre-requisites for the build

1.2.1 Files Required

1.2.1.1 Build tools configuration files

- \Makefile.prod
- \packages-production\user.bld
- \packages-production\config.bld

1.2.1.2 Algorithm library

(\packages-production\ittiam\codecs\g711_dec)

- lib_production\g711_dec_prod.a

1.2.1.3 Codec package building files

(\packages-production\ittiam\codecs\g711_dec)

- ce\G711_DEC.xdc
- ce\G711_DEC.xs
- ce\package.bld
- ce\package.xdc
- ce\package.xs
- G711_DEC.xdc
- link.xdt
- package.bld

- package.xdc
- package.xs

1.2.1.4 Hardware resource library

(\packages-production\ittiam\codecs\g711_dec\ce)

- lib\resource.a470MV

1.2.1.5 ARM application build files

(\packages-production\ittiam\app\g711_dec_app)

- g711_dec_app.cfg
- package.bld
- package.xdc
- g711_dec_app.x470MV (application executable obtained after building)

1.2.1.6 ARM application include files

(\packages-production\ittiam\app\g711_dec_app)

- g711dec_ittiam.h
- ig711dec.h
- ia_error_handler.h
- ia_error_standards.h
- ia_type_def.h

1.2.1.7 ARM application source files

(\packages-production\ittiam\app\g711_dec_app)

- ceapp.c
- app.c
- ia_g711_dec_error_handler.c

1.2.1.8 Binary files and executables

(\packages-production\ittiam\app\g711_dec_app\test)

- loadmodules.sh (script to initialize kernel modules)
- g711_dec_params.txt (input config file for the app)
- g711_dec_app.x470MV (Pre-built application, this will be updated when the package is built)

1.3 Usage Instructions

To build and run the application, follow the given steps:

1. Set the path variables in the file `Makefile.prod`. You need to change the paths of `CE_INSTALL_DIR`, `XDC_INSTALL_DIR`, `XDCPATH` appropriately. In case the directory '`(CE_INSTALL_DIR)/cetools/packages`' does not exist in your CE installation package, then you should also include the paths of xdais, framework components and cmem in `XDCPATH`.
2. Set the right ARM code generation tools path in `user.bld`
3. Set the right ARM compiler tool chain path in `user.bld`
4. Set the target platform in `user.bld`
5. Clean the workspace before building, using the command below

   ```
   make –f Makefile.prod clean
   ```
6. Build the workspace using the command below

   ```
   make –f Makefile.prod all
   ```

   This command will build codec and the application
7. Running the executable
   a. Copy the '`test`' folder (containing `g711_dec_app.x470MV`, `loadmodules.sh`, `g711_dec_params.txt`, `*.cod`) under `packages-production/ittiam/app/g711_dec_app` into your working folder on the target device's file system
   b. Go to test/ directory.
   c. Run the `./loadmodules.sh` on command line for cmem kernel module.
   d. The sample application runs using a parameter file called `g711_dec_params.txt` using which the input and output test-vector list is provided. The details to configure `g711_dec_params.txt` are provided in [1].
   e. Run `./g711_dec_app.x470MV` on command line. The output created can be compared for bit-exactness with reference output `*_ref.pcm`.
8. There is a compilation switch `ARM_PROFILE` in `packages-production/ittiam/app/g711_dec_app/app.c` to enable or disable profiling of the component's process call.
9. There is a compilation switch `USE_ITTIAM_ERROR_CODE` in `packages-production/ittiam/app/g711_dec_app/app.c` to enable or disable the usage of include files `ia_error_handler.h`, `ia_error_standards.h` and `ia_type_def.h`

2. References

[1] Getting started Guide