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ARM®

MELP

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Mixed-excitation linear prediction (MELP) is a United States Department of Defense speech coding standard, traditionally used in military applications, secure voice, and radio devices.

MELP

MIXED-EXCITATION LINEAR PREDICTION (MELP) IS A UNITED STATES DEPARTMENT OF DEFENSE SPEECH CODING STANDARD USED MAINLY IN MILITARY APPLICATIONS AND SATELLITE COMMUNICATIONS, SECURE VOICE, AND SECURE RADIO DEVICES.

FEATURES

- Functions are C-callable
- Multiple channel capable

Coding Rate: 2400

Sampling Rate: 8 kHz

| Specifications | Description | Availability |

SPECIFICATIONS

ARM®DEVICES

MELP ARM Cortex-A - ARMv7 | ARMv8

CPU UTILIZATION

MIPS	MIPS (600bps)	MIPS (1200 bps)	MIPS (2400 bps)
Encoder	46	44	27
Decoder	17	17	17

MELP ARM Cortex-M4 | Cortex-M7

CPU UTILIZATION

MIPS	MIPS (600bps)	MIPS (1200 bps)	MIPS (2400 bps)
Encoder	< 60	< 50	< 50
Decoder	< 30	< 30	<25

MEMORY REQUIREMENTS

All Memory usage is given in units of byte.

Cortex-M4	Program	Channel	Scratch	Tables	Data
Encoder	100k	6560	6984	148k	63k
Decoder		1376			

MELP ARM9e

CPU UTILIZATION

MIPS	MIPS (600bps)	MIPS (1200 bps)	MIPS (2400 bps)
Encoder	493	489	81
Decoder	27	27	27

We specify MIPS (Millions of Instructions per Second) as MCPS (Millions of Instruction Cycles per Second). Unless otherwise specified, peak MIPS are indicated.

FUNCTION

API function call summary

```
MELP_ADT_initEncode (…) Initializes the MELP encoder
MELP_ADT_initDecode (…) Initializes the MELP decoder
MELP_ADT_encode (…) Executes the MELP encoder
MELP_ADT_decode (…) Executes the MELP decoder
```