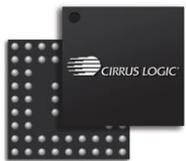


ASoC Sample Rate Domains

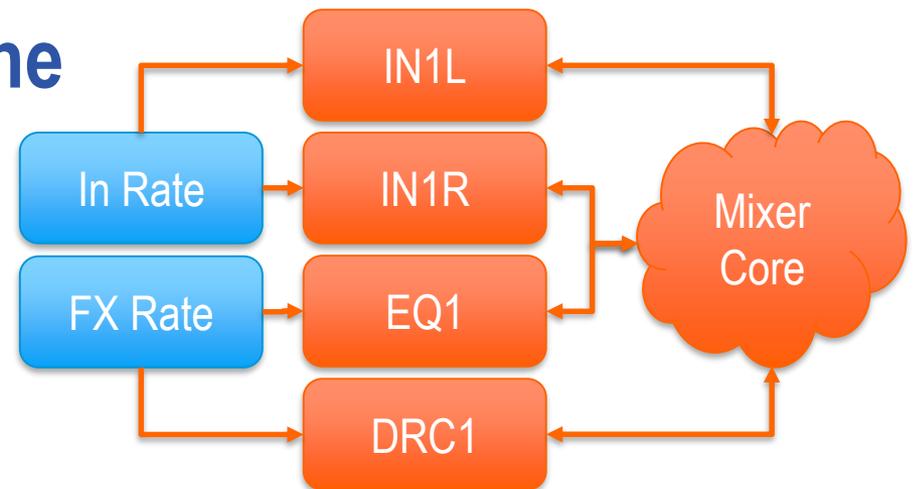
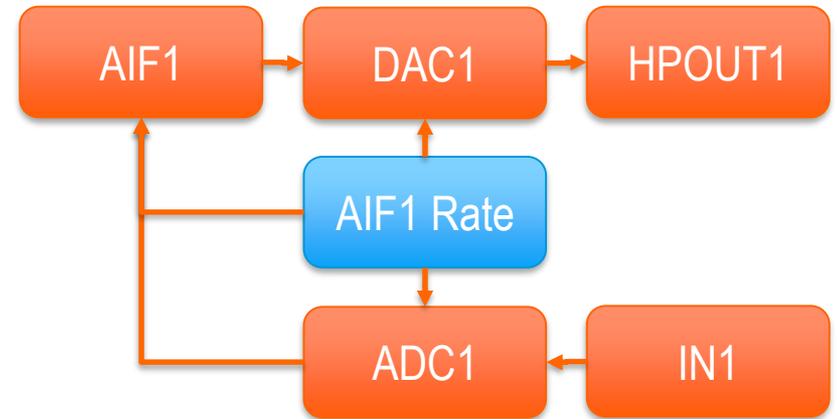
Initial Prototype



Advanced Signal Processing Components

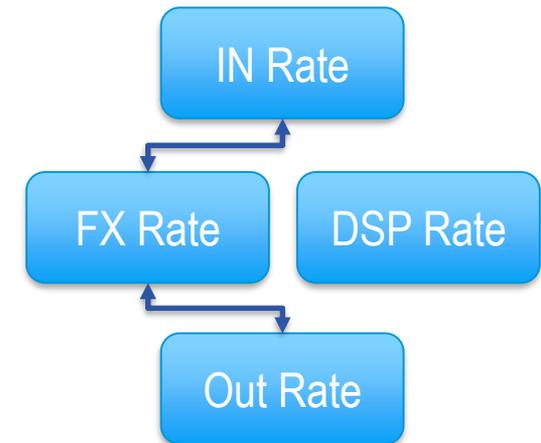
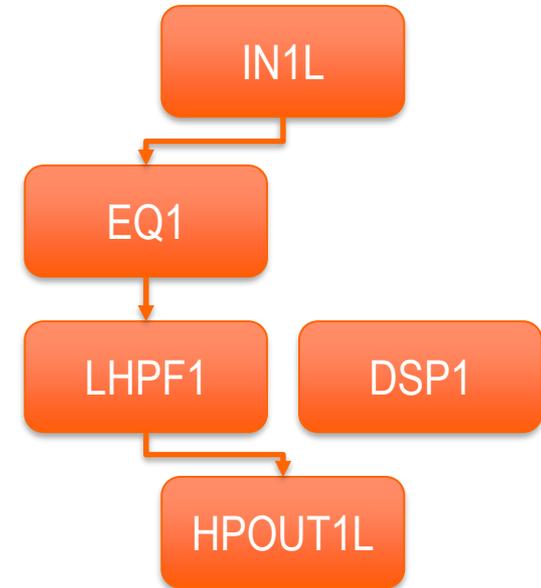
Rate Group Widgets

- Most CODECs have some inherent mapping of rates
- Annotate which DAPM widgets are mapped to the same rate
- New supply like widget



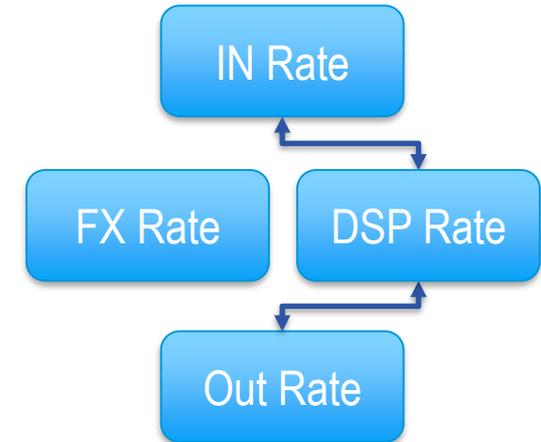
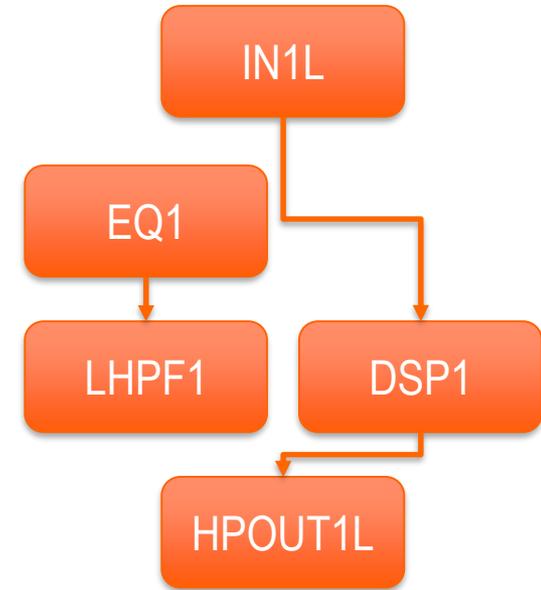
Rate Group Peering

- Connected widgets should run at the same rate
- Secondary graph linking rate groups
 - Updates with routing in DAPM
 - Significantly smaller than DAPM graph
 - Drivers can also manually link groups



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Rate Domains

- **A domain represents a slot for a sample rate**
- **Components register domains during probe**
- **When a group powers up it must be attached to a domain**
 - If a peer is already attached we should use the same domain
 - If a peer can only use some domains we should limit our choices
 - Limitations discovered through a graph walk
 - 2 step process mask then pick
- **Drivers can also manually attach a domain to a group**

API

- **snd_soc_domain_connect_widgets**
 - Peer two domain groups
 - Reference counted
- **snd_soc_domain_attach/detach**
 - Manually attach/detach a domain to a group
 - Reference counted
- **snd_soc_domain_set/get_rate**
- **snd_soc_domain_active**
 - Check if a domain is attached to any active groups

Rate Group Callbacks

- **set_domain**
 - Apply a particular domain to this group
- **mask_domains**
 - Filter a bit mask for domains that are acceptable to this group
 - Maybe hardware limitations
 - Maybe rate based limitations
 - Skipped for groups with an assigned domain
- **pick_domains**
 - Select one of the available domains (post masking) for use
 - Core provides a default implementation
 - Non-active domain if available, otherwise first available

Rate Domain Callbacks

- **set_rate**
 - Sets a domain to a specific rate
- **get_rate**
 - Returns the current rate of the domain

Future

- **Tidy up APIs**
- **Links between components**
 - Groups and domains are a single component concept
 - Bridges – represent DAI links / SRCs / general bridging between components
 - Currently DAI links handled by attaching domains in hw_params
 - Propagation of rates to CODEC to CODEC links
- **More than just rates?**
 - Currently a domain just contains a rate
 - Could be a snd_pcm_hw_params
- **Synchronous domains**
 - No concept currently of two domains being compatible