

# Asterisk PBX

## Disclaimer

- **TransitBridge** is only available on the same host as TetraPack Core, so the target of this document is a server administrator. Other Asterisk systems can be connected to transit Asterisk system via IAX2, SIP, etc.
- **TransitBridge** (as well as DetroitBridge) is plug-and-play, no extra configuration required.
- **TransitBridge** channel driver uses only default dialplan context. Please use Gotolf or Lua.
- **Some TETRA Systems** (at least **CTS**) don't support external numbers (PSTN on PABX) for messaging.
- **Some TETRA Systems** (at least **CTS**) don't support PABX calls (PSTN or ISSI only).

## Modules

- codec\_pack.so - TETRA codec definitions and translations, uses our own library CodecPack.so
- chan\_transit.so - TransitBridge channel driver

## Environment variables

```
CODECPACK=/<path>/CodecPack.so
```

## asterisk.conf

[options]

systemname = <numeric ID of local system>

# Dialplan

## Outbound calls

```
Dial(Transit/<Core ID>/<ISSI>[/<options>])
```

Where options are:

- s - Use simplex call with PTT control (RADIO\_KEY/RADIO\_UNKEY, see app\_rpt)
- t - Use PSTN call (source ISSI 16777184, CALERID(num) is passed as an external number)
- b - Use PBX call (source ISSI 16777186, CALERID(num) is passed as an external number)
- n<ISSI> - Use specified source ISSI and pass CALLERID(num) as an external number
- c<0-3> - Use service number 0-3 (at this moment only 0 / ACELP is supported)
- p<0-15> - Set call priority

By-default duplex individual call with ACELP (0) and normal priority (0) will be created.

Example:

```
Dial(Transit/2505/${EXTEN}/t)
```

## Inbound calls

Channel variables:

- TRANSIT\_TYPE=ISSI - Extension ID contains destination ISSI
- TRANSIT\_TYPE=Number - Extension ID contains destination external number
- TRANSIT\_FLOW=PTT - Simplex call
- TRANSIT\_ISSI=<ISSI> - Destination ISSI  
(only when TRANSIT\_TYPE=Number, should contain 16777184 for PTSN call or 16777186 for PBX call)
- TRANSIT\_PRIORITY=<0-15> - Call priority

## Outbound messages

```
MessageSend(Transit:<Link ID>[/<Destination ISSI>][,<Source ISSI>[ <External Number>]])
```

Please keep your eyes on formatting. There no spaces in <to> section, no space after comma in <from> section and only single space between source ISSI and external number.

Channel variables:

- MESSAGE(to)=<ISSI>
- MESSAGE(from)=<ISSI>
- MESSAGE(body)=<Text>
- MESSAGE\_SEND\_STATUS - Will be set to SUCCESS, when the message accepted by the basestation (TNSDS-REPORT result=0), timeout is 500 milliseconds.

Asterisk API said, it corresponds to message enqueueing, not delivery, but we have a bit more. :)

## Inbound messages

Channel variables:

- MESSAGE(to)=<ISSI/External Number>
- MESSAGE(from)=<ISSI>
- MESSAGE(body)=<Text>
- MESSAGE\_DATA(TRANSIT\_TYPE)=ISSI - Extension ID and MESSAGE(to) contain destination ISSI
- MESSAGE\_DATA(TRANSIT\_TYPE)=Number - Extension ID and MESSAGE(to) contain destination external number
- MESSAGE\_DATA(TRANSIT\_ISSI)=<ISSI> - Destination ISSI  
(only when MESSAGE\_DATA(TRANSIT\_TYPE)=Number, should contain 16777184 for PTSN call or 16777186 for PBX)

TransitBridge sends delivery report when terminal requested that. Delivery status depends on the status of dialplan proceeding.

# Technical Information

## Channel ID format

Transit/<Link ID>:<Session UUID>

- Link ID - decimal TetraPack Core instance identifier
- Session UUID - global call session UUID, used in TetraPack Core and BrandMeister Core (in lower case)

## Specific Hangup-Cause codes

Transit <TETRA disconnect-cause code>

Get TETRA disconnect-cause codes at Table 14.55 in [ETSI EN 300 392-2 V3.8.1](#). Read more about Hangup Cause [here](#).

## Dialplan example

```
exten => 9XXXXXXX,1,Dial(Transit/2505/${EXTEN:1}/t)
same => n,NoOp(Disconnect Cause: ${HANGUPCAUSE(${HANGUPCAUSE_KEYS()}),tech})
same => n,HangUp()
exten => 16777184,1,NoOp(Incoming message)
same => n,NoOp(From: ${MESSAGE(from)})
same => n,NoOp(To: ${MESSAGE(to)})
same => n,NoOp(Body: ${MESSAGE(body)})
same => n,NoOp(TRANSIT_TYPE: ${MESSAGE_DATA(TRANSIT_TYPE)})
same => n,MessageSend(Transit:2505/${MESSAGE(from)},16777184 911)
same => n,NoOp(Message send status: ${MESSAGE_SEND_STATUS})
```

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