FLOW CHART FOR
BLE CLIENT &
SERVER

CLIENT

SERVER

Configuration

Configuration

gecko_cmd_sm_configure

gecko_cmd_sm_delete_bondings()

gecko_cmd_sm_set_bondable_mode

//to connect to a specific server address
gecko_cmd_le_gap_connect(
serveraddress)

On receiving the advertising packet

gecko_cmd_sm_configure

gecko_cmd_sm_delete_bondings

gecko_cmd_sm_set_bondable_mode

gecko_cmd_le_gap_set_adv_parameters

gecko_cmd_le_gap_set_mode

starts advertising →

← Initiates Connection

Connection Opened

Connected ↔

Connection Opened

Connection = evt->

data.**evt_le_connection_opened**.connection

//sets the connection parameters

gecko_cmd_le_connection_set_parameters

LCD prints "connected"

Connection = evt->

data.**evt_le_connection_opened**.connection

//sets the connection parameters

gecko_cmd_le_connection_set_parameters

LCD prints "connected"

Bonding

Bonding

//Increase the security of the connection, encrypts the connection and performs bonding

gecko_cmd_sm_increase_security

LCD prints the passkey and waits for the user to confirm that the passkey is the same as on the client.

If PB0 is pressed, the following command is executed to confirm bonding

gecko_cmd_sm_passkey_confirm(evt->data.evt_sm_confirm_bonding.connection,1)

LCD prints the passkey and waits for the user to confirmthat the passkey is the same as on the sever.

If PB0 is pressed, the following command is executed toconfirm bonding

gecko_cmd_sm_passkey_confirm(evt->data.evt_sm_confirm_bonding.connection,1)

Bonded ↔

Discover Services

Discover Services included in the .isc file of the server ←

//discover the health thermometer service by

gecko_cmd_gatt_discover_primary_services_by_uuid

after the service is discovered the following events are generated.

gecko_evt_gatt_service_id

gecko_evt_gatt_procedure_completed_id

Discover Characteristics

Discover the characteristics included in the .isc file ←

//discover the temperature measurement characteristic by using

cmd_gatt_discover_characteristics_by_uuid

Enable Indications

//Enable indication from from the server to get the temperature reading correctly.

gecko_cmd_gatt_set_characteristic_notification

Sending the Temperature Data

Reading the Temperature Data

//after the characteristics is discovered the following two events are triggered

gecko_evt_gatt_characteristic_id

gecko_evt_gatt_characteristic_value_id

gecko_cmd_gatt_server_send_

characteristic_notification

Indication sent from the Server →

We then have to send a confirmation on the receipt of the indication. We do this with the following command.

cmd_gatt_send_characteristic_confirmation

"The gatt_characteristic_value_event carries the att_opcode containing handle_value_indication (0x1d) which reveals that an indication has been received and this must be confirmed with this command"

Send Confirmation ←

Connection Closed

Connection Closed

LCD writes "Disconnected"

start advertising again

gecko_cmd_le_gap_set_mode

LCD writes "Disconnected"