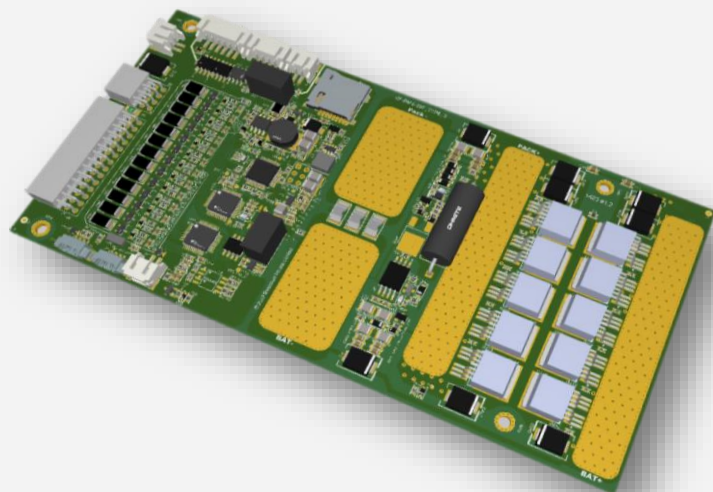




EF-26S-TYPE1

Smart Battery Management System

The EF-26S-TYPE1 BMS is a centralized BMS with battery monitoring and system management functions integrated into a single unit. Designed to monitor up to 26 cells individually, EF-26S-TYPE1 can also be connected in a parallel architecture. This makes the EF-26S-TYPE1 BMS an ideal choice for battery-swapping applications. EF-26S-TYPE1 is chemistry agnostic and compatible with all leading chemistries of lithium-ion batteries.



Design

- Compact design
- Board manages from 17 to 26 cells in series

Performance

- State of Charge (SOC) and State of Health (SOH) estimations based on advanced algorithms
- Supports paralleling of multiple battery packs
- Smart passive balancing algorithm with a configurable balancing current
- Operational temperature range of -40°C to 85°C

Communication

- CAN bus 2.0 B interface for charger control and system interfacing
- Bluetooth BLE monitoring capabilities with companion mobile application Battrack BT
- Compatible with our Telematics Control Unit to track battery deployments in real-time
- UART Communication.

Safety

- Status LEDs for error indication.
- Up to 2 onboard temperature sensors and 6 thermistors (NTC) inputs for external sensing
- Short circuit detection within 20µs

Intelligence

- Real-time monitoring and data logging
- Stores up to a lifetime of historical battery data

Application Software

- **Battrack-BT:** Companion smartphone app connects to the BMS via Bluetooth and displays live data of the battery's performance.
- **BATBOT:** Desktop software to communicate with the BMS, get historical data and configure its parameters via the USB/CAN adaptor
- **Battrack web-** Cloud-connected battery analytics platform to manage a large fleet of batteries

Applications

Electric 2 & 3 Wheelers



UPS/Backup Battery Systems



Swappable Battery Systems

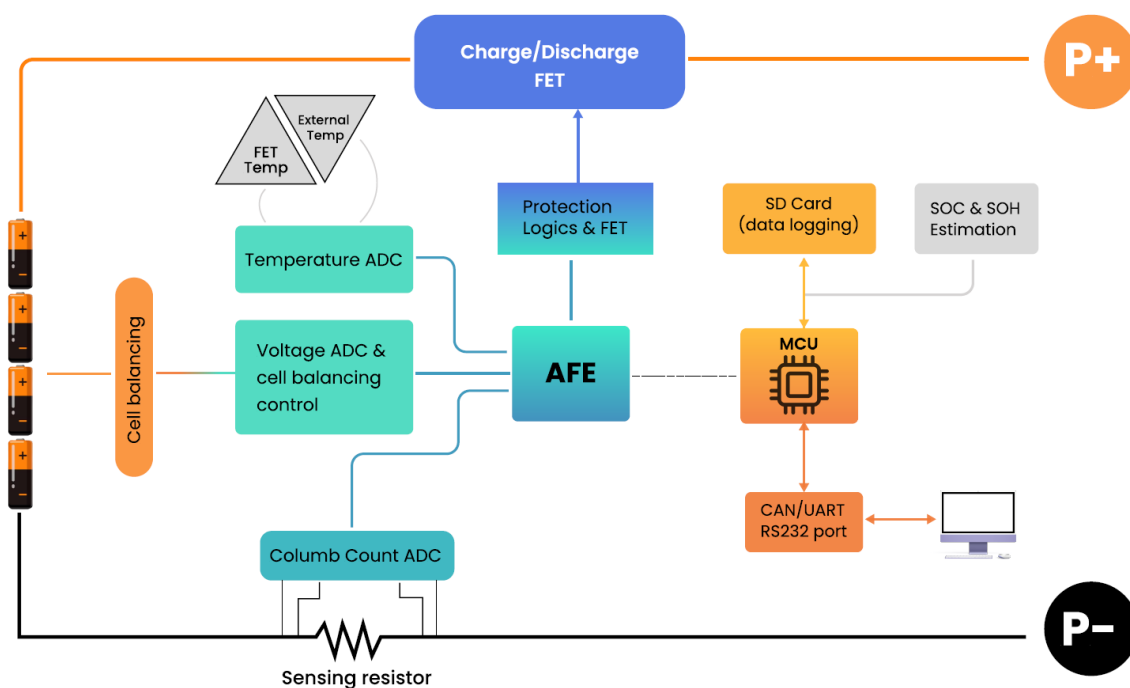




General Specifications

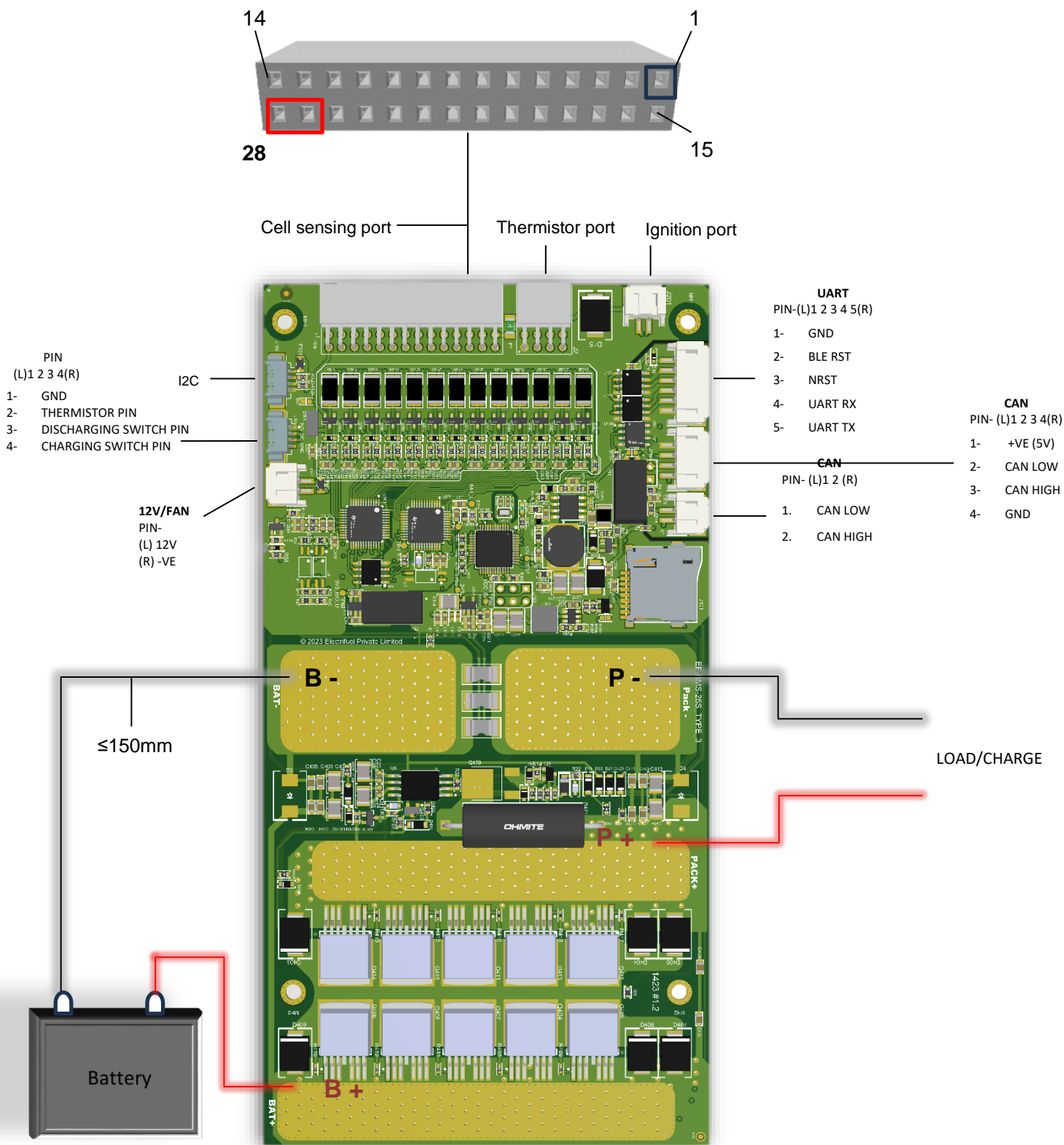
Battery voltage	71 – 110 VDC
Cell configuration	17 - 26
Capacity	1000
Balancing current per cell	250 mA @4.2V
Max cell voltage	5V
Discharging Current	100A Continuous, 150A Peak 10sec
Max Charging Current	100A
Voltage measurement accuracy	±25.00 mV -40°C to 85°C
Active current consumption	6-8mA (with 26 cells @3.6V)
Sleep current consumption	50µA (with 26 cells @3.6V)
Temperature sensors	6 externals + 2 onboard
Temperature measurement accuracy	±1.00°C -40°C to 85°C
Control IO	PDU I/O: charge, discharge, precharge control, current and temperature monitoring Charge & Discharge Mosfet switch control, ignition key, thermal management, status LED, buzzer control
Communication	CAN 2.0 B for system integration Bluetooth for Android dashboard, UART, I2C, RS232
Supported CAN speeds	125, 250, 500, 1k kbit/sec
Temperature	-40°C to 85°C
Dimensions	171*89*10
Weight	80 g

EF-26S-TYPE1 Block diagram

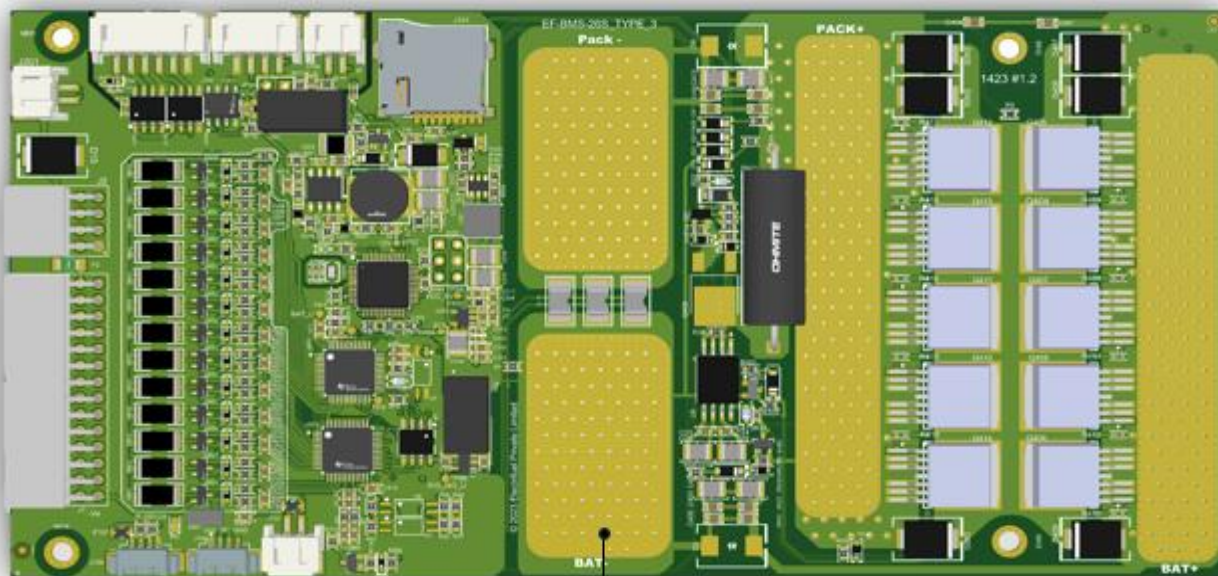




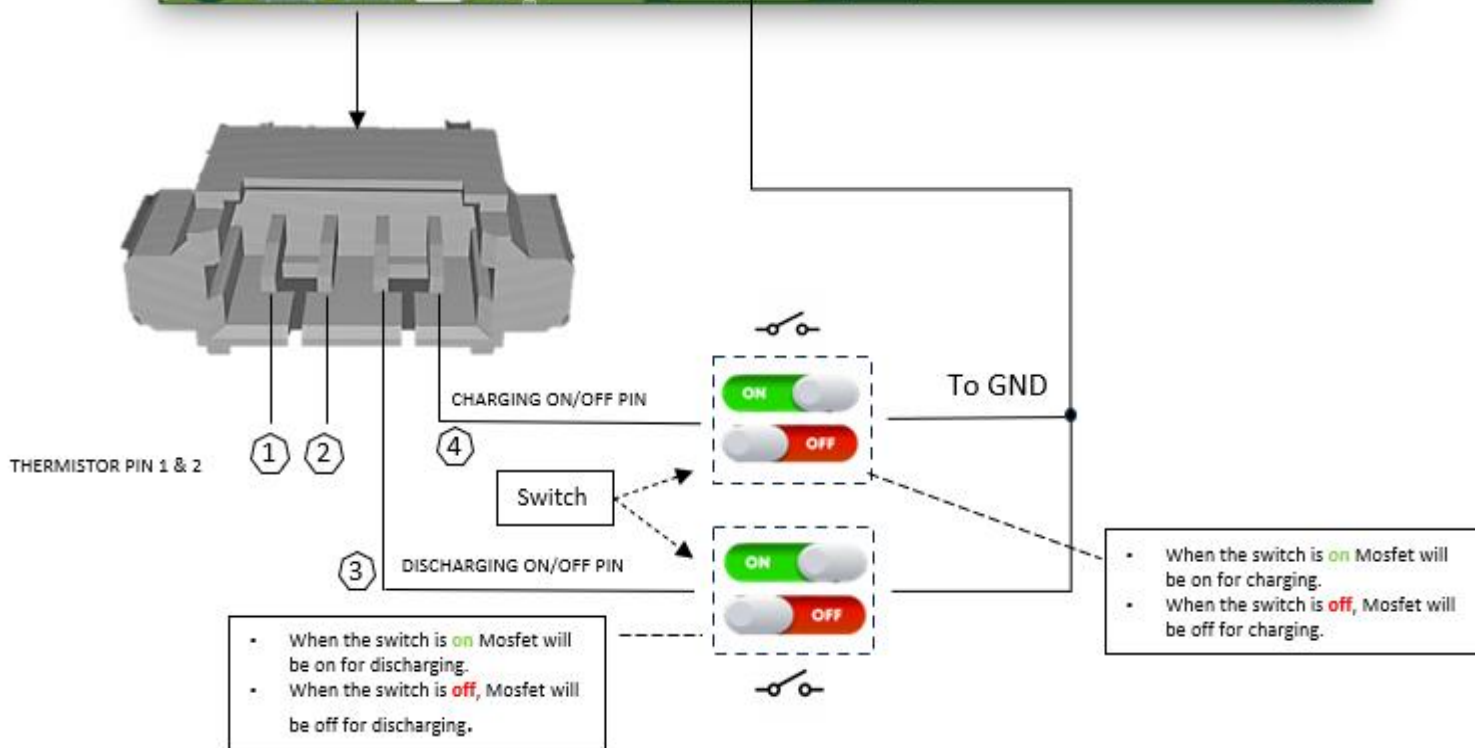
Mechanical Specifications



Mosfet Control Mode

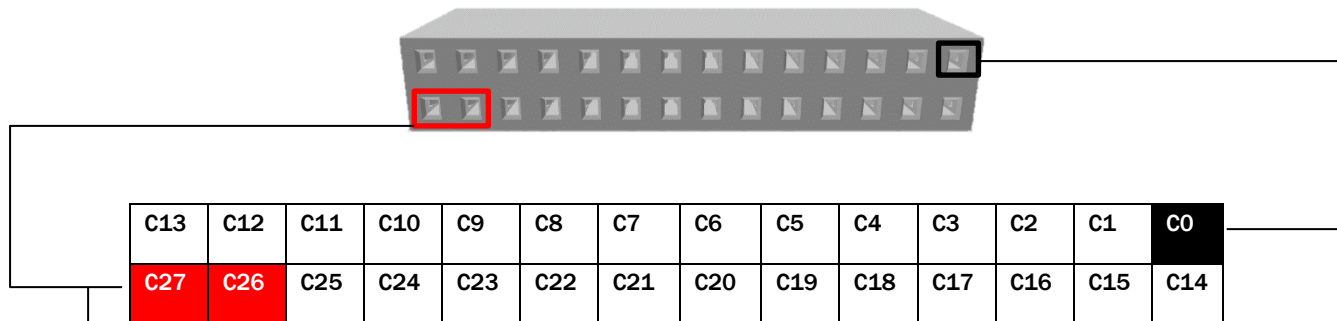


BMS FRONT VIEW





Cell connections -



Always short

Cell Count	C0 C1	C1-C2	C2-C3	C3-C4	C4-C5	C5-C6	C6-C7	C7-C8	C8 C8-C9	C9 C9-C10	C10 C10-C11	C11 C11-C12	C12 C12-C13	C13-C14	C14-C15	C15-C16	C16-C17	C17-C18	C18-C19	C19-C20	C20-C21	C21-C22	C22 C22-C23	C23 C23-C24	C24 C24-C25	C25 C25-C26
17	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Short	Short	Short	Short	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Short	Short	Short	Short
18	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Short	Short	Short	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Short	Short	Short	Short
19	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Short	Short	Short	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Short	Short	Short
20	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Cell-10	Short	Short	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Short	Short	Short
21	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Cell-10	Short	Short	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Cell-24	Short	Short
22	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Cell-10	Cell-11	Short	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Cell-24	Short	Short
23	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Cell-10	Cell-11	Short	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Cell-24	Cell-25	Short
24	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Cell-10	Cell-11	Cell-12	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Cell-24	Cell-25	Short
25	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Cell-10	Cell-11	Cell-12	Short	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Cell-24	Cell-25	Cell-26
26	Cell-1	Cell-2	Cell-3	Cell-4	Cell-5	Cell-6	Cell-7	Cell-8	Cell-9	Cell-10	Cell-11	Cell-12	Cell-13	Cell-14	Cell-15	Cell-16	Cell-17	Cell-18	Cell-19	Cell-20	Cell-21	Cell-22	Cell-23	Cell-24	Cell-25	Cell-26