

P O W E R
- I N G ●
T O M O -
R R O W ●

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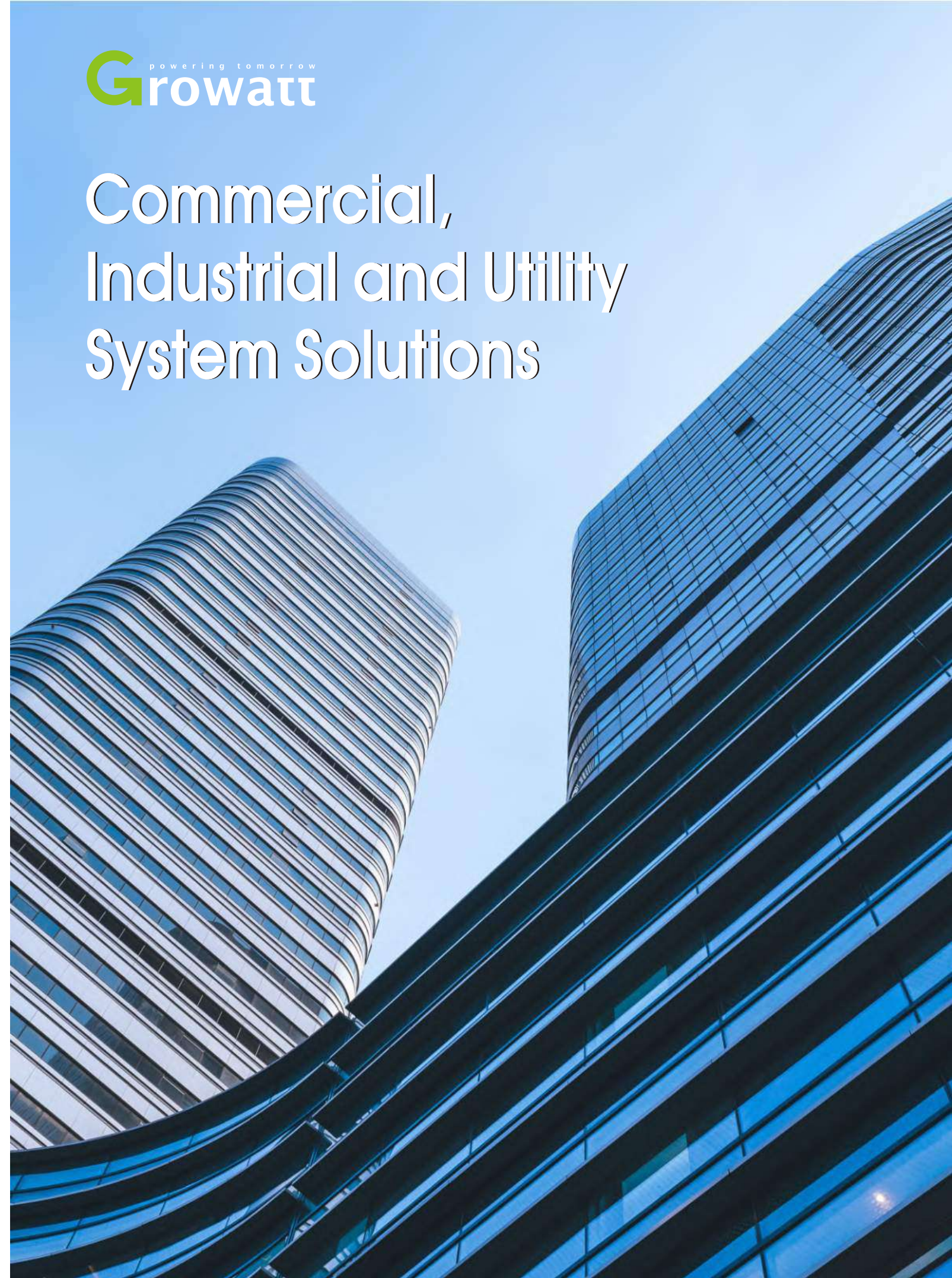
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GR-CA-023-01

Growatt
powering tomorrow

Commercial, Industrial and Utility System Solutions



About Growatt



Fast growing new energy enterprise

► Leading brand, focus on string inverter



0.75-253kW
capacity



1,700,000+
shipped totally



17GW+
total shipment capacity



business covered
100 countries and regions



11798870.9T
CO₂ emission reduction

► Continuous investment in innovation



1200 employees
20% R&D engineers



8% revenue
in R&D investment



70+ patents
and copyrights

► Offices and service centers globally



POWERING TOMORROW WITH GROWATT



MAX 185~253KTL3 HV



MAX 50~100KTL3 LV/MV



MAC 50~70KTL3-X LV/MV



MID 15~25KTL3-X



MID 30~40KTL3-X



Growatt 30000~50000TL3-S



Growatt 12000~15000TL3-S



High Yields

Max efficiency up to 99%
Multiple MPP trackers



Easy to Use

Integrated DC switch
Type II SPD on AC and DC side



Simple O&M

Online smart service (OSS)
One click diagnose



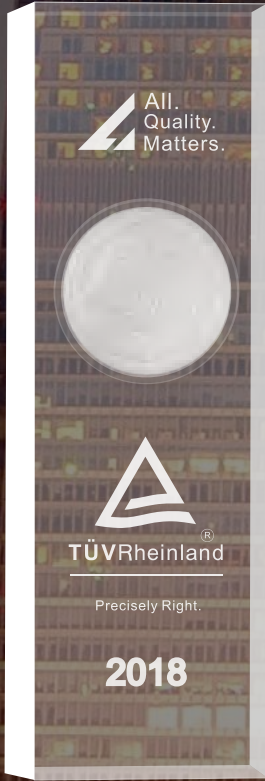
Safe & Reliable

Fuse free design
IP65 protection

INTERNATIONAL HONORS AND AWARDS



MAX 50~100KTL3 LV/MV



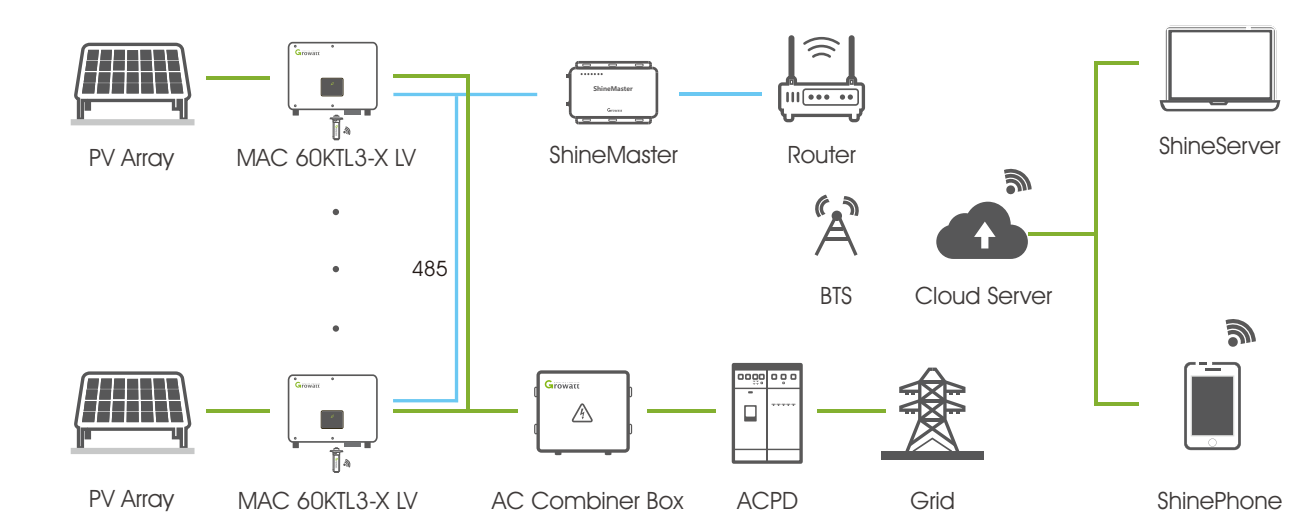
Growatt MAX series 80kW Inverter won the Award of PV Inverter for Commercial Use with excellent quality and high functionality, ranking first of commercial inverters. MAX is the only C&I inverter that has won this honor.



2018-2020
Top brand PV inverters

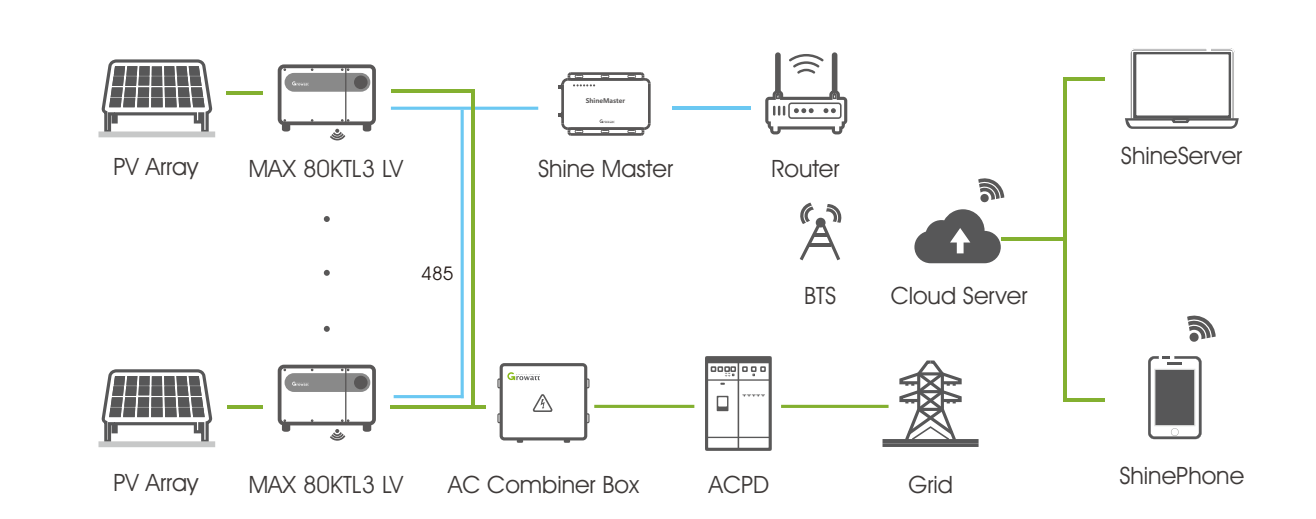


Low voltage on-grid system
flat site 300kW solution



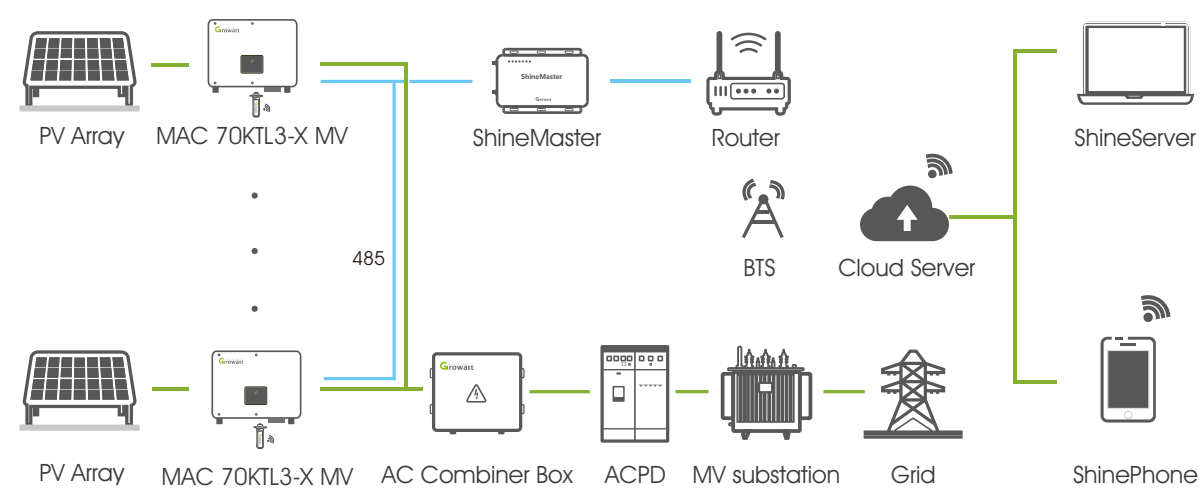
System configuration		
Inverter model	MAC 60KTL3-X LV	5units
Module spec	60 cells, monocrystal 360W	388.8KWp, 1080pcs, 18pcs/srting, 60 strings
AC combiner	6 input / 1 output	1 unit
Monitoring	GPRS/RS485	5/1
System characteristics	◆ 1.3DC AC ratio, reduce the cost per watt. ◆ up to 3 MPPTs, compatible with different angles and different modules. ◆ wire/wireless monitoring solutions, data upload via different channels, flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

Low voltage on-grid system
rugged site 300kW solution



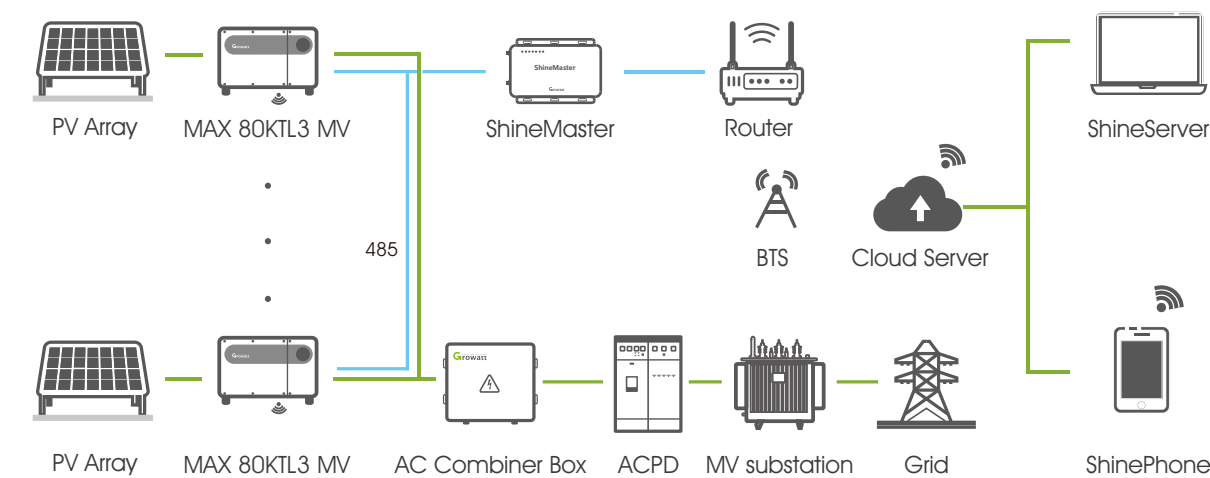
System configuration		
Inverter model	MAX 80KTL3 LV	4units
Module spec	60 cells, monocrystal 370W	414.4KWp, 1120pcs, 20pcs/srting, 56 strings
AC combiner	4 input / 1 output	1 unit
Monitoring	GPRS/RS485	4/1
System characteristics	◆ 1.3DC AC ratio, reduce the cost per watt. ◆ up to 7 MPPTs, compatible with different angles and different modules. ◆ wire/wireless monitoring solutions, inbuilt wireless module,flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

Medium voltage on-grid system
flat site 1 MW solution



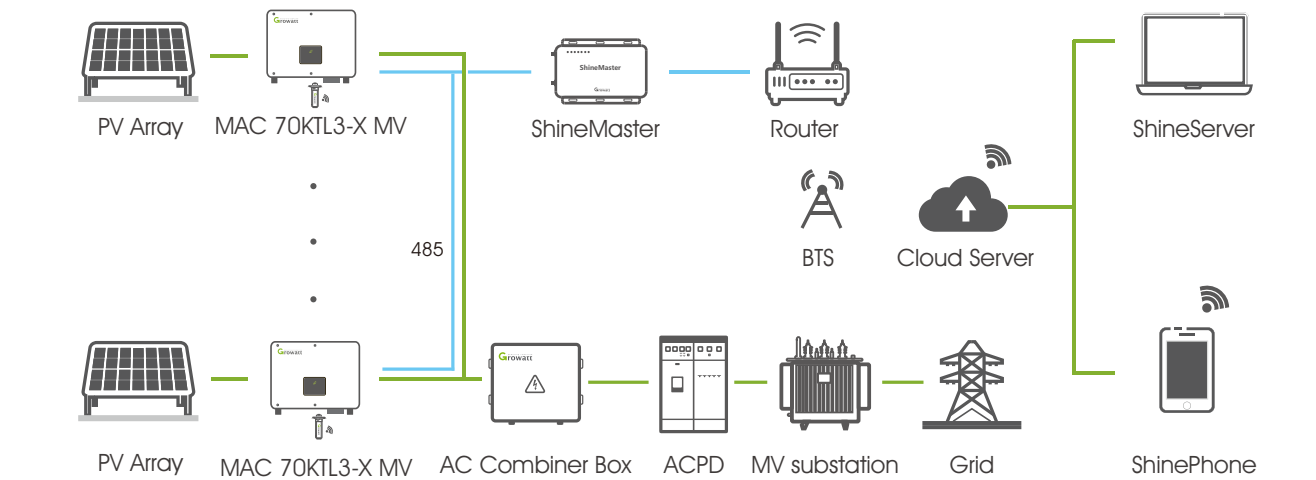
System configuration		
Inverter model	MAC 70KTL3-X MV	14 units
Module spec	60 cells, monocrystal 360W	1270KWp,3528pcs, 21 pcs/string, 168 strings
AC combiner	6 input / 1 output	3units
Step-up transformer	1000KVA, 480V/10KV	1 unit
Monitoring	GPRS/RS485	14/1
System characteristics	◆ 1.3DC AC ratio, reduce the cost per watt. ◆ up to 3 MPPTs, compatible with different angles and different modules. ◆ wire/wireless monitoring solutions, data upload via different channels, flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

Medium voltage on-grid system
rugged site 1 MW solution



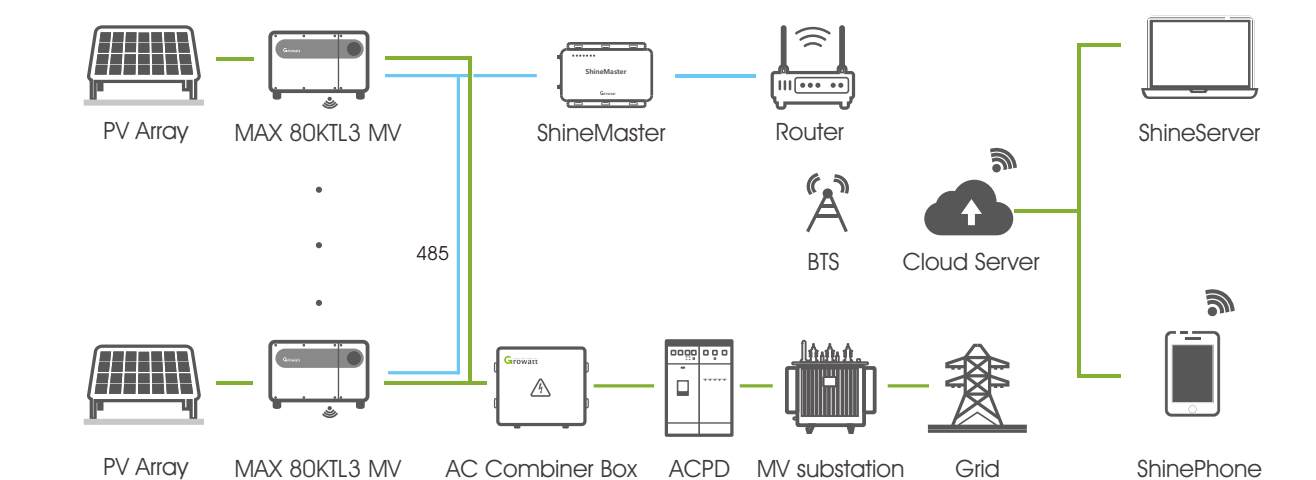
System configuration		
Inverter model	MAX 80KTL3 MV	12units
Module spec	60 cells, monocrystal 370W	1243.2KWp, 3360pcs, 20 pcs/string, 168 strings
AC combiner	6 input / 1 output	2units
Step-up transformer	1600KVA, 480V/10KV	1 unit
Monitoring	GPRS/RS485	12/1
System characteristics	◆ 1.3DC AC ratio, reduce the cost per watt. ◆ up to 7 MPPTs, compatible with different angles and different modules. ◆ wire/wireless monitoring solutions, inbuilt wireless module, flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

Medium voltage on-grid system flat site 1.6MW solution



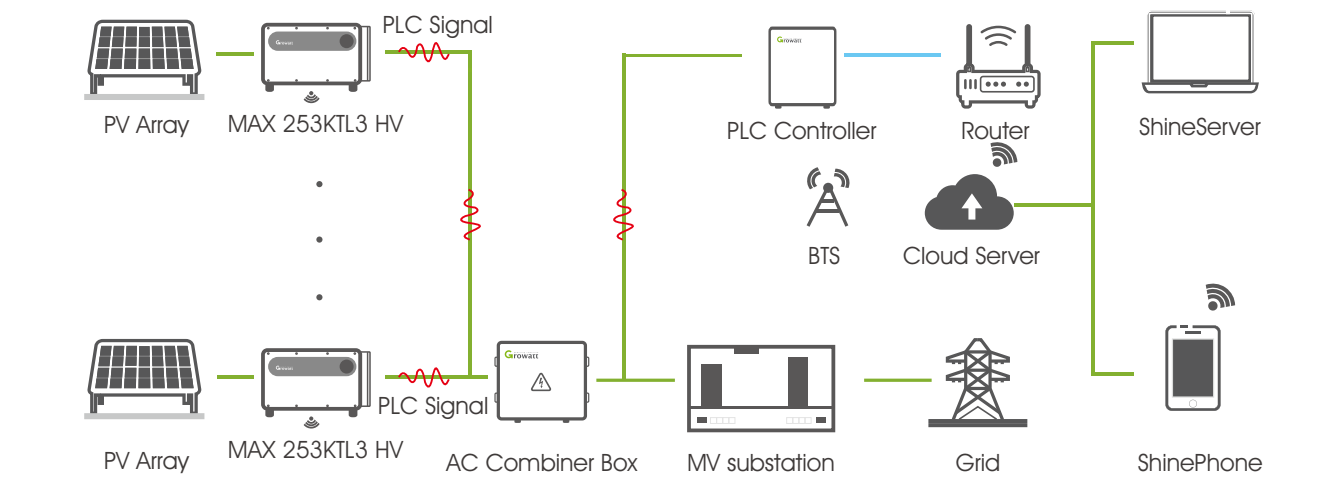
System configuration		
Inverter model	MAC 70KTL3-X MV	22units
Module spec	60 cells, monocrystal 360W	1995.8KWp, 5544pcs, 21pcs/srting, 264 strings
AC combiner	6 input / 1 output	4units
Step-up transformer	1600KVA, 480V/10KV	1 unit
Monitoring	GPRS/RS485	22/1
System characteristics	◆ 1.3DC AC ratio, reduce the cost per watt. ◆ up to 3 MPPTs, compatible with different angles and different modules. ◆ wire/wireless monitoring solutions, data upload via different channels, flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

Medium voltage on-grid system rugged site 1.6MW solution



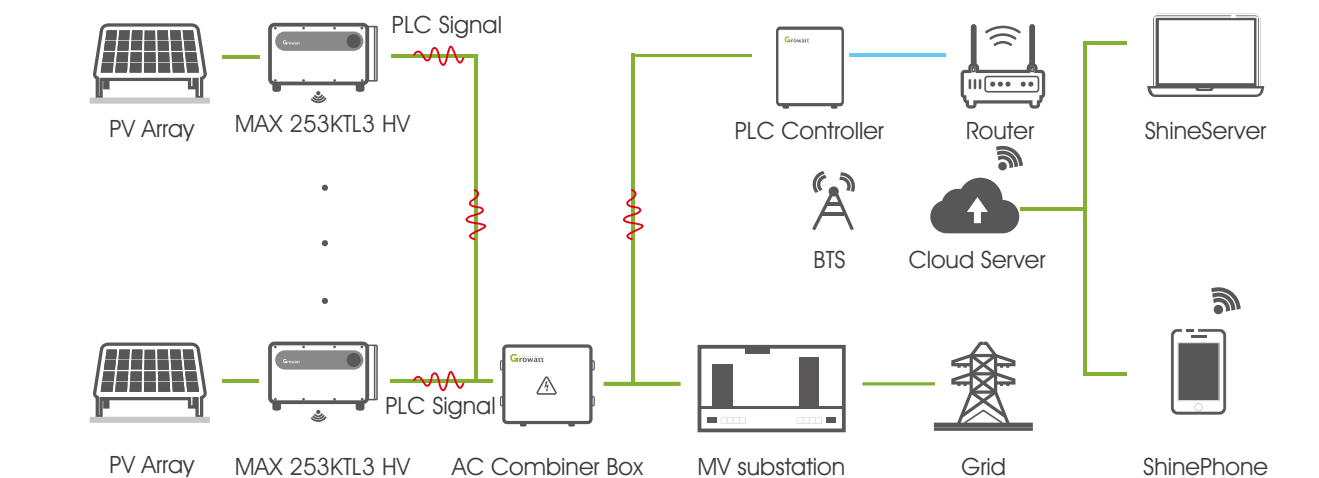
System configuration		
Inverter model	MAX 80KTL3 MV	20units
Module spec	60 cells, monocrystal 370W	2072KWp, 5600pcs, 20pcs/srting, 280 strings
AC combiner	6 input / 1 output	4units
Step-up transformer	1600KVA, 480V/10KV	1 unit
Monitoring	GPRS/RS485	20/1
System characteristics	◆ 1.3DC AC ratio, reduce the cost per watt. ◆ up to 7 MPPTs, compatible with different angles and different modules. ◆ wire/wireless monitoring solutions, inbuilt wireless module, flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

Medium voltage on-grid system 5MW solution



System configuration		
Inverter model	MAX 253KTL HV	20units
Module spec	72 half-cut cells, monocrystal 400W	6720KWp, 28 pcs/string, 600strings
AC combiner	10 input / 1 output	2units
Step-up transformer	5MVA, 800V/33KV	1 unit
Monitoring	PLC Controller	1 unit
System characteristics	◆ 1.33DC AC ratio, reduce the cost per watt. ◆ up to 15 MPPTs, compatible with different angles and different modules. ◆ wireless monitoring solutions, flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

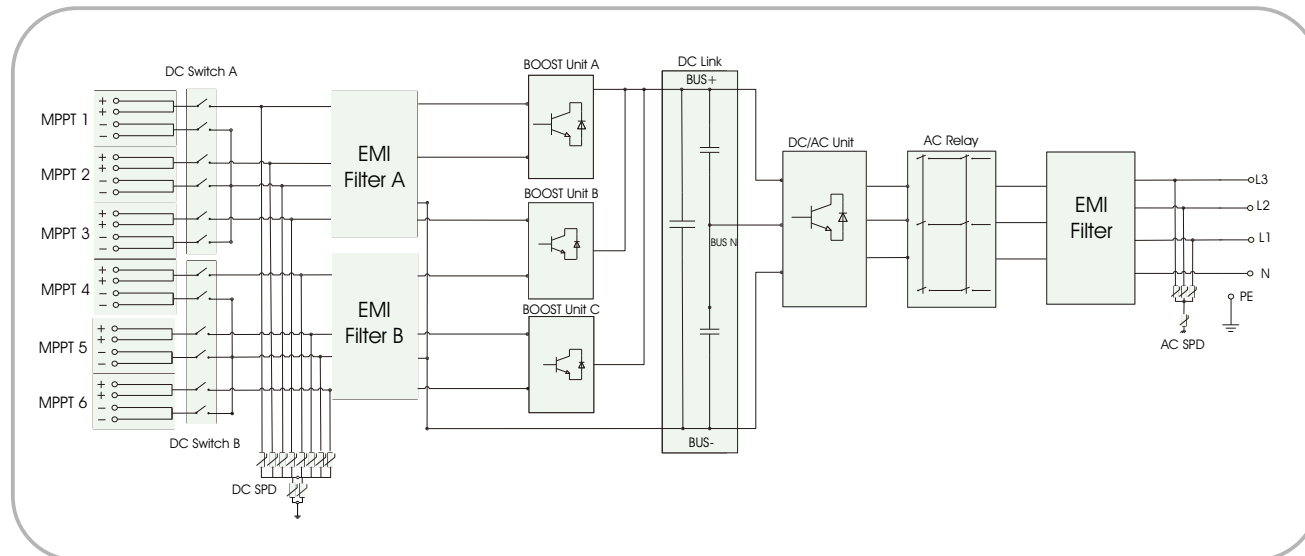
Medium voltage on-grid system 6.25MW solution



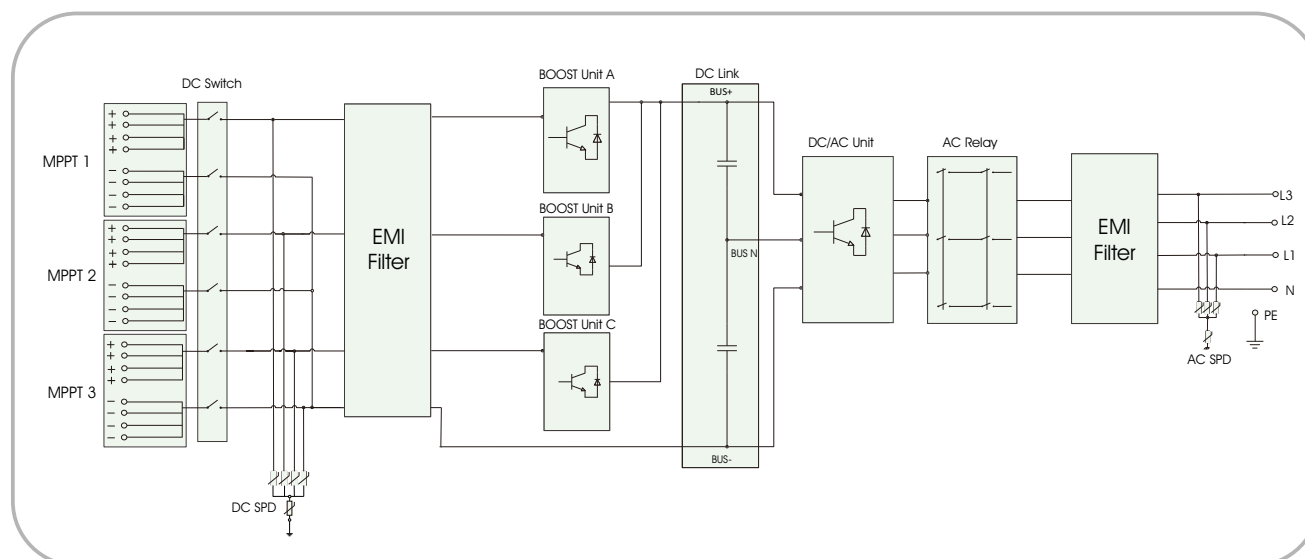
System configuration		
Inverter model	MAX 253KTL HV	24units
Module spec	72 half-cut cells, monocrystal 400W	8064KWp, 28 pcs/string, 720strings
AC combiner	10 input / 1 output	3units
Step-up transformer	6.25MVA, 800V/33KV	1 unit
Monitoring	PLC Controller	1 unit
System characteristics	◆ 1.33DC AC ratio, reduce the cost per watt. ◆ up to 15 MPPTs, compatible with different angles and different modules. ◆ wireless monitoring solutions, flexible applications. ◆ intelligent monitoring platform, easy maintenance, save investment and time.	

Typical Topology

MAX Series Inverter Circuit Topology



MAC Series Inverter Circuit Topology



Export Limitation Solution

What is Export Limitation Function?

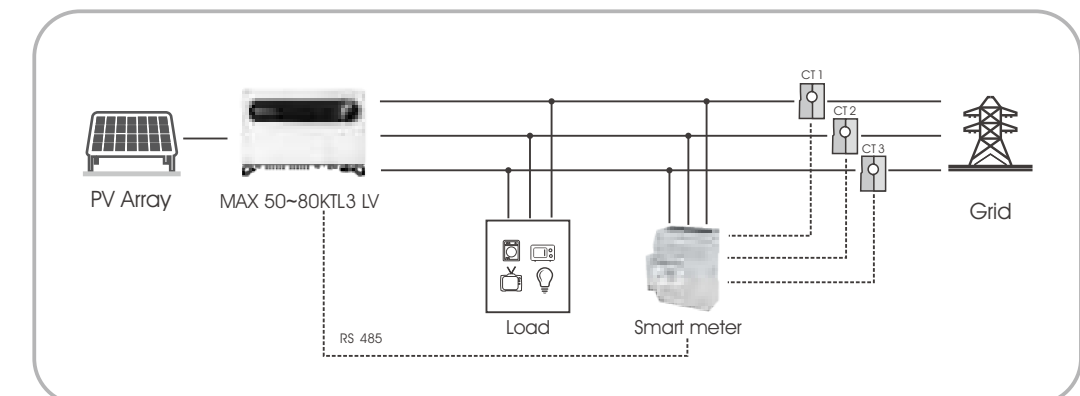
Growatt offers different export limitation solutions, all inverters firmware already support it, which can dynamically adjust inverter production.

Growatt Export Limitation Solution Benefits

- ◆ The limit power can be set according network restriction
- ◆ Fast response time
- ◆ Failsafe operation protection function

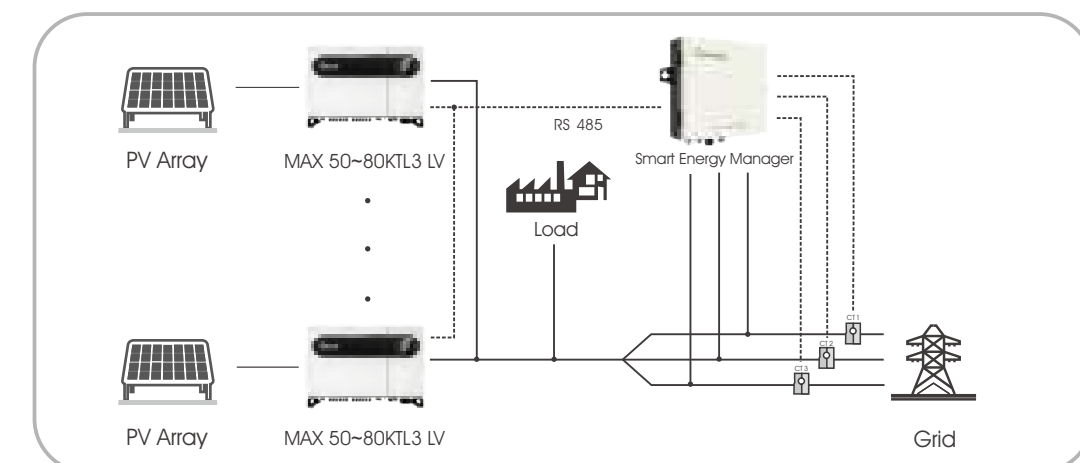
Export Limitation for Single Inverter

If the system is only one inverter, then use one three phase meter can do the export limitation, for MAX inverter, need use meter with 3CTs.



Export Limitation for Multiple Inverters

If the system with multiple inverters, then use Smart Energy Manager to do the export limitation, maximum can communicate 64 inverters. It can also monitoring system self-consumption on Growatt monitoring portal.



Growatt 12000~15000TL3-S



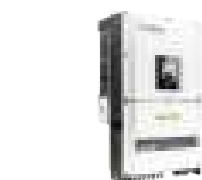
- Max. Efficiency 98.3%
 - Dual MPP trackers
- Supports export limitation
 - Integrated DC switch
- Max. DC voltage 1000VDC
 - Natural cooling

Datasheet	12000TL3-S		13000TL3-S		15000TL3-S	
Input Data						
Max. recommended PV power (for module STC)	14400W		15600W		18000W	
Max. DC voltage	1000V					
Start Voltage	160V					
MPPT voltage range	160V-1000V					
Nominal voltage	600V					
Max. input current	20A/10A					
Number of independent MPP trackers/strings per MPP tracker	2/2 + 1					
Output (AC)						
Rated AC output power	12kW		13kW		15kW	
Max. AC apparent power	13.2kVA		14.3kVA		16.5kVA	
Max. output current	19A		20.6A		23.8A	
AC nominal voltage	230V/400V 184~275V ; 320-478V					
AC grid frequency	50/60Hz, ± 5Hz					
Power factor	0.8leading - 0.8lagging					
THDi	< 3%					
AC grid connection type	3W+N+PE					
Efficiency						
Max.efficiency	98.3%					
Euro - eta	98%					
MPPT efficiency	99.5%					
Protection Devices						
DC reverse polarity protection	yes					
DC switch	yes					
Output over current protection	yes					
Output AC overvoltage Protection - Varistor	yes					
Ground fault monitoring	yes					
Grid monitoring	yes					
Integrated all-pole sensitive leakage current monitoring unit	yes					
General Data						
Dimensions (W / H / D) in mm	480/427/200					
Weight	23.5kg					
Operating temperature range	-25 °C ... +60 °C					
Self-Consumption (night)	<0.5W					
Topology	Transformerless					
Cooling concept	Natural					
Environmental Protection Rating	IP65					
Altitude	3000m					
Relative Humidity	0~100%					
Features						
DC connection	H4/MC4(opt)					
AC connection	Screw terminal					
Display	LCD					
Interfaces:RS232/RS485/RF/Ethernet/Wi-Fi	yes/yes/opt/opt/opt					
Warranty:5 years/10 years	yes/opt					

CE, IEC 62109-1/2, VDE 0126-1-1, Greece, VFR 2014, VDE-AR-N4105, G99, EN50438, CEI 0-21, AS4777, IEC 61727, IEC 62116, CQC

* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

Growatt 30000~50000TL3-S



- Max. Efficiency 99%
 - Dual MPP trackers
- Anti-PID function
 - Type II DC and AC SPDs
- String fuse and string monitoring
 - Supports Export limitation

Datasheet	30000TL3-S	33000TL3-S	40000TL3-NS	50000TL3-S
Input Data				
Max recommended PV Power (for module STC)	37500W	41250W	50000W	60000W
Max DC voltage	1000V			
Start Voltage	250V			
MPPT voltage range	200V-1000V			
Nominal voltage	580V			695V
Max. input current	34A/34A			
Max. input current per string	12A			
Number of MPP trackers / strings per MPP tracker	2/4			
Output (AC)				
Rated AC output power	30kW	33kW	40kW	48kW
Max. AC apparent power	33.3kVA	36.6kVA	44.4kVA	53.3kVA
Max. output current	48.3A	53A	64.5A	64.5A
AC nominal voltage	230V/400V			
AC grid frequency	50Hz/60Hz			
Power factor	0.8 leading - 0.8 lagging			
THDI	<3%			
AC grid connection type	3W+N+PE			3W+N+PE/3W+PE
Efficiency				
Max.efficiency	98.9%	98.9%	98.8%	99%
Euro - eta	98.4%	98.4%	98.5%	98.5%
MPPT efficiency	99.5%			
Protection Devices				
DC reverse polarity protection	yes			
DC Switch	yes			
DC Surge protection	Type II			
Ground fault monitoring	yes			
Output short circuit protection	yes			
AC Surge protection	Type II			
String Fuse protection	yes			
String fault monitoring	yes			
Anti-PID protection	yes			
General Data				
Dimensions (W / H / D) in mm	470/754/270			
Weight	48kg			
Operating temperature range	-25 °C ... +60 °C			
Altitude	4000m			
Self-consumption night	< 1W			
Topology	Transformerless			
Cooling concept	Smart cooling			
Environmental Protection Rating	IP65			
Relative humidity	0~100%			
Features				
Display	LED+LCD			
Interfaces: RS232/R485/WiFi/LAN/GPRS	yes / yes / opt / opt / opt			
Warranty:5 years / 10 years	yes / opt			

CE, IEC 62109-1/2, IEC 61727, IEC 62116, VDE 0126-1-1, Greece, VFR 2014, CEI 0-21, CEI 0-16, VDE-AR-N4105, EN50438, EN50549, G99/3, AS 4777, PEA, IEC 60529, IEC 60068, IEC 61683, DRRG, C10/11, UNE217001, UNE206007, PO12.2, MEA, PEA

* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

MID 17~25KTL3-X



- Max.efficiency 98.6%
 - 40% compact and lighter
 - Data storage up to 25 years
- Dual MPP trackers
 - Supports export control
 - DC side 2 in 1 connection enabled
- Touch key and OLED display
 - Type II SPD on AC DC side

Datasheet	MID 17KTL3-X	MID 20KTL3-X	MID 22KTL3-X	MID 25KTL3-X
Input Data (DC)				
Max. recommended PV power (for module STC)	25500W	30000W	33000W	37500W
Max. DC voltage	1100V			
Start Voltage	250V			
Nominal voltage	580V			
MPPT voltage range	160V-1000V			
No. of MPP trackers	2			
No. of PV strings per MPP tracker	2	2	2	2/3
Max. input current per MPP tracker	25A			25A/37.5A
Max. short circuit current per MPP tracker	32A			32A/48A
Output Data (AC)				
Rated AC output power	17000W	20000W	22000W	25000W
Max. AC apparent power	18800VA	22000VA	24400VA	27700VA
Nominal AC voltage(range*)	220V/380V, 230V/400V (340-440V)			
AC grid frequency,(range*)	50/60 Hz (45-55Hz/55-65 Hz)			
Max. output current	27.4A	31.9A	35.5A	40.2A
Adjustable power factor	0.8leading...0.8lagging			
THDi	<3%			
AC grid connection type	3W+N+PE			
Efficiency				
Max.efficiency	98.75%			
European efficiency	98.6%			
MPPT efficiency	99.9%			
Protection Devices				
DC reverse polarity protection	Yes			
DC Switch	Yes			
AC/DC surge protection	Type II / Type II			
Insulation resistance monitoring	Yes			
AC short-circuit protection	Yes			
Ground fault monitoring	Yes			
Grid monitoring	Yes			
Anti-islanding protection	Yes			
Residual-current monitoring unit	Yes			
String monitoring	Optional			
AFCI protection	Optional			
General Data				
Dimensions (W / H / D)	525/395/222mm			
Weight	23kg			
Operating temperature range	-25 °C ... +60 °C			
Self-Consumption (night)	<1W			
Topology	Transformerless			
Cooling	Smart air cooling			
Protection degree	IP65			
Relative Humidity	0~100%			
Altitude	4000m			
DC connection	H4/MC4(Optional)			
AC connection	Cable gland+OT terminal			
Display	OLED+LED/WIFI+APP			
Interfaces: RS485 / USB / WIFI/ GPRS / RF/ LAN	Yes/Yes /Optional/Optional/Optional/Optional			
Warranty: 5 years / 10 years	Yes /Optional			
CE, VDE0126, Greece, EN50549, C10/C11, UTE C 15-712, IEC62116,IEC61727, IEC 60068, IEC 61683, CEIO-21, N4105, TOR Erzeuger, G98/G99, G100, UNE217001, UNE206007, PO12.2, KSC8565				

* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

MID 30~40KTL3-X



- Max.efficiency 98.8%
 - 40% compact and lighter
 - Data storage up to 25 years
- Dual MPP trackers
 - Supports export control
 - DC side 2 in 1 connection enabled
- Self-consumption monitoring
 - AFCI function optional

Datasheet	MID 30KTL3-X	MID 33KTL3-X	MID 36KTL3-X	MID 40KTL3-X
Input data (DC)				
Max. recommended PV power (for module STC)	45000W	49500W	54000W	60000W
Max. DC voltage	1100V			
Start Voltage	250V			
Normal Voltage	600V			
MPPT voltage range	200-1000V			
No. of MPP trackers	3	3	4	4
No. of PV strings per MPP tracker	2			
Max.input current per MPP tracker	26A			
Max. short-circuit current per MPP tracker	32A			
Output data (AC)				
AC nominal power	30000W	33000W	36000W	40000W
Max. AC apparent power	33300VA*	36600VA	39600VA	44000VA
Nominal AC voltage (range*)	220V/380V, 230V/400V (340-440V)			
AC grid frequency (range*)	50/60 Hz (45-55Hz/55-65 Hz)			
Max. output current	50.5A	55.5A	60.0A	66.6A
Adjustable power factor	0.8leading...0.8lagging			
THDI	<3%			
AC grid connection type	3W+N+PE			
Efficiency				
Max.efficiency	98.8%			
European efficiency	98.5%			
MPPT efficiency	99.9%			
Protection Devices				
DC reverse polarity protection	Yes			
DC Switch	Yes			
AC/DC surge protection	Type II / Type II			
Insulation resistance monitoring	Yes			
AC short-circuit protection	Yes			
Ground fault monitoring	Yes			
Grid monitoring	Yes			
Anti-islanding protection	Yes			
Residual-current monitoring unit	Yes			
String monitoring	Optional			
Anti-PID function	Optional			
AFCI protection	Optional			
General data				
Dimensions (W / H / D)	575/420/225mm			
Weight	30kg			
Operating temperature range	- 35°C ... +60°C			
Nighttime power consumption	<1W			
Topology	Transformerless			
Cooling	Smart air cooling			
Protection degree	IP66			
Relative humidity	0-100%			
Altitude	4000m			
DC connection	H4/MC4(Optional)			
AC connection	Cable gland+OT terminal			
Display	OLED+LED/WIFI+APP			
Interfaces: RS485 / USB / WiFi/ GPRS / RF/ LAN	Yes/Yes /Optional/Optional/Optional/Optional			
Warranty: 5 years / 10 years	Yes /Optional			
CE, VDE0126, Greece, EN50549, C10/C11, UTE C 15-712, IEC62116,IEC61727, IEC 60068, IEC 61683, CEIO-21, CEIO-16, N4105, TOR Erzeuger, G98/G99, G100, AS/NZS 3100, AS4777, UNE217001, UNE206007, PO12.2, KSC8565				

* For Belgium C10/C11 and VDE-AR-N4105, MID 30KTL3-X max. output power is limit to 30KVA.
* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

MAC 50~70KTL3-X LV/MV



- 3 MPPTs
 - Smart diagnosis
 - Data storage up to 25 years
- High efficiency up to 98.8%
 - Local WIFI connection
 - DC side 2 in 1 connection enabled
- OLED display and touch button
 - AC&DC type II SPD

Datasheet	MAC 50KTL3-X LV	MAC 50KTL3-X MV	MAC 60KTL3-X LV	MAC 60KTL3-X MV	MAC 70KTL3-X MV
Inputu Data (DC)					
Max. recommended PV power(for module STC)	75000W	75000W	90000W	90000W	105000W
Max.DC voltage	1100V				
Start voltage	250V				
Nominal voltage	600V	700V	600V	700V	700V
MPPT voltage range	200V-1000V				
No. of MPP trackers	3				
No. of PV strings per MPP tracker	4/3/3	4/3/3	4/4/4	4/4/4	4/4/4
Max. input current per MPP tracker	50A/37.5A/37.5A	50A/37.5A/37.5A	50A/50A/50A	50A/50A/50A	50A/50A/50A
Max. short-circuit current per MPP tracker	55A				
Output Data (AC)					
Rated AC output power	50000W	50000W	60000W	60000W	70000W
Max. AC apparent power	55500VA	55500VA	66600VA	66600VA	77700VA
Nominal AC voltage （range*）	230V/400V （340-440V）	277V/480V （425-540V）	230V/400V （340-440V）	277V/480V （425-540V）	277V/480V （425-540V）
AC grid frequency （range*）	50/60 Hz (45-55Hz/55-65 Hz)				
Max. output current	80.5A	66.9A	96.6A	80.2A	93.6A
Adjustable power factor	0.8leading ...0.8lagging				
THDi	<3%				
AC grid connection type	3W+N+PE	3W+PE	3W+N+PE	3W+PE	3W+PE
Efficiency					
Max. efficiency	98.8%				
European efficiency	98.5%				
MPPT efficiency	99.9%				
Protection Devices					
DC reverse polarity protection	Yes				
DC switch	Yes				
AC/DC surge protection	Type II / Type II				
Insulation resistance monitoring	Yes				
AC short-circuit protection	Yes				
Ground fault monitoring	Yes				
Grid monitoring	Yes				
Anti-islanding protection	Yes				
Residual-current monitoring unit	Yes				
General Data					
Dimensions(W / H / D)	680/508/281mm				
Weight	52kg				
Operating temperature range	- 25°C ... +60°C				
Nighttime power consumption	<1W				
Topology	Transformerless				
Cooling	Smart air cooling				
Protection degree	IP65				
Relative humidity	0~100%				
Altitude	4000m				
DC connection	H4/MC4(Optional)				
AC connection	Cable gland+OT terminal				
Display	OLED+LED/WIFI+APP				
Interfaces: RS485 / USB /WIFI/ GPRS / RF	Yes/Yes /Optional/Optional/Optional				
Warranty: 5 years / 10 years	Yes /Optional				

CE, IEC62116, IEC61727, IEC 60068, IEC 61683, IEC60529, KSC8565

* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

MAX 50~80KTL3 LV



- 6/7 MPPTs
 - Smart diagnosis
 - Data storage up to 25 years
- High efficiency up to 99%
 - Local WIFI connection
 - DC side 2 in 1 connection enabled
- String monitoring
 - AC&DC type II SPD

Datasheet	MAX 50KTL3 LV	MAX 60KTL3 LV	MAX 70KTL3 LV	MAX 80KTL3 LV
Input Data (DC)				
Max. recommended PV power (for module STC)	75000W	90000W	105000W	120000W
Max.DC voltage	1100V			
Start voltage	250V			
Nominal voltage	585V	585V	600V	600V
MPPT voltage range	200V-1000V			
No. of MPP trackers	6	6	7	7
No. of PV strings per MPP tracker	2			
Max. input current per MPP tracker	26A			
Max. short-circuit current per MPP tracker	32A			
Output Data (AC)				
AC nominal power	50000W	60000W	70000W	80000W
Max. AC apparent power	55500VA	66600VA	77700VA	88800VA
Nominal AC voltage （range*）	220V/380V, 230V/400V （340-440V）			
AC grid frequency （range*）	50/60 Hz (45-55Hz/55-65 Hz)			
Max. output current	80.5A	96.6A	112.7A	128.8A
Adjustable power factor	0.8leading ...0.8lagging			
THDi	<3%			
AC grid connection type	3W+N+PE			
Efficiency				
Max.efficiency	98.8%	98.8%	99%	99%
European efficiency	98.4%	98.4%	98.5%	98.5%
MPPT efficiency	99.9%			
Protection Devices				
DC reverse polarity protection	Yes			
DC switch	Yes			
DC surge protection	Type II / Type II			
Insulation resistance monitoring	Yes			
AC short-circuit protection	Yes			
Ground fault monitoring	Yes			
Grid monitoring	Yes			
Anti-islanding protection	Yes			
Residual-current monitoring unit	Yes			
String monitoring	Yes			
AFCI protection	Optional			
Anti-PID function	Optional			
General Data				
Dimensions (W / H / D)	860/600/300mm			
Weight	82kg	82kg	86kg	86kg
Operating temperature range	-25°C ... +60°C			
Self-consumption	<1W			
Topology	Transformerless			
Cooling	Smart air cooling			
Protection degree	IP65			
Relative humidity	0-100%			
Altitude	4000m			
DC connection	H4/MC4(Optional)			
AC connection	Cable gland+OT terminal			
Display	LED/WIFI+APP			
Interfaces: RS485 / USB /WIFI/ RF/GPRS	Yes/Yes /Optional/Optional/Optional			
Warranty: 5 years / 10 years	Yes /Optional			

CE , VDE0126, Greece, EN50438, EN50549, C10/C11, UTE C 15-712, IEC62116, IEC61727, IEC 60068, IEC 61683, CEI0-21, CEI 0-16, N4105, BDEW, DRRG, TOR Erzeuger , G98/G99, G100, AS/NZS3100, AS4777, UNE217001, UNE206007, PO12.2, NRS 097-2-1, MEA , PEA , KSC8565

* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

MAX 60~100KTL3 MV



- 6/7 MPPTs
 - Smart diagnosis
 - Data storage up to 25 years
- High efficiency up to 99%
 - Local WIFI connection
 - DC side 2 in 1 connection enabled
- String monitoring
 - AC&DC type II SPD

Datasheet	MAX 60KTL3 MV	MAX 70KTL3 MV	MAX 80KTL3 MV	MAX 90KTL3 MV	MAX 100KTL3 MV
Input Data (DC)					
Max. recommended PV power(for module STC)	90000W	105000W	120000W	130000W	130000W
Max.DC voltage	1100V				
Start voltage	250V				
Nominal voltage	700V	700V	700V	730V	730V
Nominal voltage	200V-1000V				
No. of MPPT trackers	6	7	7	7	7
No. of PV strings per MPPT tracker	2				
Max. input current per MPPT tracker	26A				
Max. short-circuit current per MPPT tracker	32A				
Output Data (AC)					
AC nominal power	60000W	70000W	80000W	90000W	100000W
Max. AC apparent power	66600VA	77700VA	88800VA	100000VA	111000VA
Nominal AC voltage (range*)	277V/480V 425-540VAC	277V/480V 425-540VAC	277V/480V 425-540VAC	288V/500V 425-540VAC	288V/500V 425-540VAC
AC grid frequency (range*)	50/60 Hz (45-55Hz/55-65 Hz)				
Max. output current	80.2A	93.6A	107.0A	115.7A	128.6A
Adjustable power factor	0.8leading ...0.8lagging				
THDi	<3%				
AC grid connection type	3W+PE				
Efficiency					
Max.efficiency	99.0%				
European efficiency	98.5%	98.5%	98.6%	98.6%	98.6%
MPPT efficiency	99.9%				
Protection Devices					
DC reverse polarity protection	Yes				
DC switch	Yes				
AC/DC surge protection	Type II / Type II				
Insulation resistance monitoring	Yes				
AC short-circuit protection	Yes				
Ground fault monitoring	Yes				
Grid monitoring	Yes				
Anti-islanding protection	Yes				
Residual-current monitoring unit	Yes				
String monitoring	Yes				
AFCI protection	Optional				
Anti-PID function	Optional				
General Data					
Dimensions (W / H / D)	860/600/300mm				
Weight	82kg	86kg	86kg	86kg	86kg
Operating temperature range	-25°C ... +60°C				
Nighttime power consumption	<1W				
Topology	Transformerless				
Cooling	Smart air cooling				
Protection degree	IP65				
Relative humidity	0-100%				
Altitude	4000m				
DC connection	H4/MC4(Optional)				
AC connection	Cable gland+OT terminal				
Display	LED/WIFI+APP				
Interfaces: RS485 / USB /WIFI/ RF/GPRS	Yes/Yes /Optional/Optional/Optional				
Warranty: 5 years / 10 years	Yes /Optional				
CE VDE0126, Greece, EN50438, UTE C 15-712, IEC62116,IEC61727, IEC 60068, IEC 61683, N4105, G98/G99, G100					

* For current models and certificates , please see www.ginverter.com.
* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

MAX 185~253KTL3-X HV



- Up to 15 MPPTs, fuse free design
 - Smart diagnosis
 - Smart I/V scan and diagnosis
- Intelligent string monitoring
 - DC side 2 in 1 connection enabled
 - Optional Anti-PID/Night SVG/AFCI function

Datasheet	MAX 185KTL3-X HV		MAX 216KTL3-X HV		MAX 250KTL3-X HV		MAX 253KTL3-X HV	
Input data (DC)								
Max. DC voltage					1500V			
Start voltage					500V			
Nominal voltage					1080V			
MPP voltage range					500V-1500V			
No. of MPP trackers	9		9		12		15	
No. of PV strings per MPP tracker					2			
Max. input current per MPP tracker					30A			
Max. short-circuit current per MPP tracker					50A			
Output data (AC)								
AC nominal power	185KW		216KW		250KW		253KW	
Max. AC apparent power	185KVA@30°C 175KVA@40°C 160KVA@50°C		216KVA@30°C 200KVA@40°C 192KVA@50°C		250KVA@30°C 230KVA@45°C 220KVA@50°C		253KVA@30°C 230KVA@45°C 220KVA@50°C	
Nominal AC voltage (range*)					800V (640-920V)			
AC grid frequency (range*)					50/60 Hz (45-55Hz/55-65 Hz)			
Max. output current	133.5A		155.9A		180.4A		182.6A	
Adjustable power factor					0.8leading ...0.8lagging			
THDi					<3%			
AC grid connection type					3W+PE			
Efficiency								
Max.efficiency					99.0%			
European efficiency	98.7%		98.7%		98.7%		98.5%	
MPPT efficiency					99.9%			
Protection devices								
DC reverse polarity protection					Yes			
DC switch					Yes			
AC/DC surge protection					Type II / Type II			
Insulation resistance monitoring					Yes			
AC short-circuit protection					Yes			
Ground fault monitoring					Yes			
Anti-islanding protection					Yes			
Residual-current monitoring unit					Yes			
String monitoring					Yes			
AFCI protection					Optional			
Anti-PID function					Optional			
Night SVG					Optional			
General data								
Dimensions (W / H / D)					1070/670/340mm			
Weight	95kg		95kg		99kg		109kg	
Operating temperature range					-30°C ... +60°C			
Nighttime power consumption					< 1W			
Topology					Transformerless			
Cooling					Smart air cooling			
Protection degree					IP66			
Relative humidity					0-100%			
Altitude					4000m			
DC connection					Staubli MC4/Amphenol UTX			
AC connection					OT Terminal connectors (Max. 300mm²)			
Display					LED/WIFI+APP			
Interfaces: RS485 / USB /PLC					Yes/Yes /Optional			
Warranty: 5 years / 10 years					Yes /Optional			
CE, IEC62116/61727, IEC60068/61683, IEC60529, PEA, MEA, VDE0126, Greece, NRS097-2-1:2017, CEA2019								

* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

Smart Energy Manager



- System self-consumption monitoring
- Export limitation for commercial projects
- Support online monitoring and online service
- Flexible CTs for different project size

Datasheet	Smart Energy Manager				
System Size	100KW	300KW	600KW	1MW	2MW
Meter data					
Normal voltage	230/400Vac				
Voltage range(L-L)	180-540Vac				
Grid connection	3W/N/PE				
Normal frequency	50/60 Hz				
Frequency range	45~55Hz/55-65 Hz				
CT data					
Max. input current (CT sencond side)	5A				
Max.current (CT detection)	250A	600A	1200A	2000A	4000A
Accuracy (@ rated CT current)	0.5				
Communication					
RS485	Yes				
Ethernet	Yes				
Max.inverter number	64				
Communication distance	Rs485: 500m Internet cable: 100m				
General Data					
Dimensions (W/H/D) in mm	350/330/107				
Weight	6kg				
Operation temperature range	-25°C ... +60°C				
Cooling concept	Natural Cooling				
Environmental Protection Rating	IP65				
Relative humidity	0~100%				
Altitude	2000m				
CE					

Growatt ShineMaster



- Local webserver for easy configuration
- Supports export control with meters
- Up to 64 inverters connection
- Multi-function and high performance

Datasheet	ShineMaster
Hardware Parameter	
Power adapter	Input: 100-240V, 50/60Hz AC Output 5V(+/-5%), 1A DC
Power consumption	2.5W
Application Parameters	
Max. communication range	500m
Communication with inverters	RS485 (Modbus RTU protocol)
Communication with server	TCP(Modbus TCP protocol)
Support network	WLAN
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
Supported servers	ShineServer
General Data	
Dimensions(W/H/D)	130/84/25mm
Weight	180g
Language	English
Mounting options	Wall-mounted
Ambient temperature range	-40°C ~ +60°C
Degree of protection	IP30
CE	

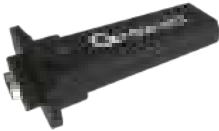


ShineWiFi-X

- Cable free, easy installation
- Build-in storage, 1 month data
- USB communication port
- Online monitoring and maintenance

Datasheet	ShineWiFi-X
Wireless Parameters	
Wireless standard	802.11 b/g/n
Frequency range	2.4G~2.5G (2412M~2484M)
Transmit power	802.11b: 16±2 dBm (@11Mbps)
	802.11g: 14±2 dBm (@54Mbps)
	802.11n: 13±2 dBm (@HT20, MCS7)
Receiver sensitivity	CCK, 1 Mbps : -90dBm
	CCK, 11 Mbps: -85dBm
	6 Mbps (1/2 BPSK): -88dBm
	54 Mbps (3/4 64-QAM): -70dBm
	HT20, MCS7 (65 Mbps, 72.2 Mbps): -67dBm
Hardware Parameters	
Data interface	USB
Operation voltage	5V(+/-5%)
Rated power	1.2W
Display	LED
Application Parameters	
Supported servers	ShineServer
Inverter communication	USB (Modbus RTU protocol)
Server communication	TCP (Modbus TCP protocol)
Support network	2.4G WiFi
Max. communication range	50m
Configure type	APP configure
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
General Data	
Dimensions(L/W/H)	135/79/29 mm
Weight	60g
Operation temperature	English, Chinese
CE	

Datasheet	ShineGPRS
General Data	
Dimensions(L/H/W)mm	135/29/79 mm
Weight	70g
Language	English, Chinese
Wireless Parameters	
Certificate and approvals	CE
Network type	2G GSM(GPRS)
GSM/EGSM/DCS/PCS frequency range	850/900/1800/1900MHZ
UMTS/HSDPA frequency range	NA
Antenna gain	3dB
Speed	GPRS
	Max.85.6Kbps(DL), Max.85.6Kbps(UL)
Hardware Parameters	
Serial port speed	9600bps
Operating voltage	9V(+/-5%)
Rated power	3.6W
Operating temperature	-30°C ... +65°C
Storage temperature	-40°C ... +70°C
Application Parameters	
Servers	ShineServer
Communication with inverter	RS232(Modbus RTU protocol)
Communication with server	TCP(Modbus TCP protocol)
Network supported	2G GSM(GPRS)
Configuration interface	APP
SIM type	regular SIM card
Uploading interval	5 Mins(1-15 adjustable)
Default server IP	server.growatt.com
Others	
Warranty	2 years
CE	



ShineGPRS

- No strings attached, easy to use
- Universal mobile networks supported
- Mobile network, long range
- Online monitoring and maintenance

Datasheet	Shine4G-X
Wireless Parameters	
Wireless type	4G
System and frequency band	LTE-FDD: B1/B3/B5/B7/B8/B20
	LTE-TDD: B38/B40/B41
	WCDMA: B1/B5/B8
	GSM: 900/1800MHz
Hardware Parameters	
Data interface	USB
Operation voltage	5V(+/-5%)
Rated power	2W
Display	LED
Application Parameters	
Supported servers	ShineServer
Inverter communication	USB (Modbus RTU protocol)
Server communication	TCP (Modbus TCP protocol)
Support network	2G/3G/4G
SIM card type	Standard SIM card
Configure type	APP configure
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
General Data	
Dimensions(L/W/H)	122/47/32mm
Weight	60g
Operation temperature	-30°C ~ +65°C
CE	



Shine4G-X

- Cable free, plug-and-play
- USB communication port
- Build-in storage, 1 month data
- Online monitoring and maintenance



ShineGPRS-X

- No strings attached, easy to use
- Universal mobile networks supported
- Mobile network, long range
- Online monitoring and maintenance

Datasheet	ShineGPRS-X
General data	
Dimensions(L/H/W)mm	122/32/47
Weight	70g
Language	English,Chinese
Wireless parameters	
Certificate and approvals	CE,RoHs
Network type	GSM/GPRS
GSM/GPRS/EDGE frequency range	850/900/1800/1900MHZ
Hardware parameters	
Serial port speed	9600bps/115200bps
Operating voltage	5V(+/-5%)
Rated power	3W
Operating temperature	-30°C ... +65°C
Storage temperature	-40°C ... +70°C
Ingress protection	IP65
Application parameters	
Servers	ShineServer
Communication with Inverter	USB(Modbus RTU protocol)
Communication with server	TCP(Modbus TCP protocol)
Network supported	2G GSM
Configuration interface	APP
SIM type	regular SIM card
Uploading interval	5 Mins(1-15 adjustable)
Default server IP	server.growatt.com
CE	



Growatt ShineLink

- Cable free, easy installation
- Multiple inverters supported, up to 8
- Build-in storage, 1 month data
- Online monitoring and maintenance
- Automatic IP addressing, plug and play
- 120 meters long range, wide coverage

Datasheet	ShineLink
Communication Interface	
Rf433	Yes
Rf433(in free-field conditions)	Up to 120 m
Rf433(two walls blocking)	20 m
Power Supply	
Power consumption	<2W standby, <5W peak
AC power supply input voltage	100V~240V(±10%)
AC power supply input frequency	50/60Hz
General Specifications	
Dimensions(L/H/W)mm	105/85/26mm
Weight	< 1 kg
Mounting options	Tabletop/wall-mount
Degree of protection	IP30
Status display	LED
Ambient temperature range	-20 to 65 °C
Humidity	0-95% (non condensing)
Features	
Graphical user interface	Android/iOS APP
Remote firmware upgrades	Yes
Max. number of devices to monitor	8(RF433)
Warranty	2 years
CE	

EXCEPT THE STRENGTHS OF PRODUCT WITH GROWATT, YOU CAN ALSO ENJOY

Powerful Monitoring Platform

ShineServer and ShinePhone are the new generation monitoring systems developed by Growatt and freely open to our users.



ShineServer



ShinePhone



Powerful cloud server

- User data security
- Up to 10 years user data storage
- Continues data upload even local network outage

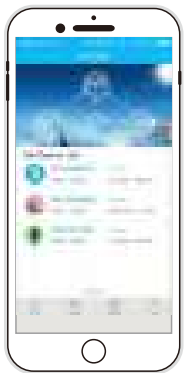
Managing wherever you are and whatever you want

- Mobile APP platform
- Working mode adjustable
- Inverter parameters are adjustable

Smart Online Service System (OSS)



OSS platform



APP platform

Growatt Online Smart Service (OSS in short) system is a smart customer service platform, which can offer a quick support for service, lowering service costs for both Growatt installers and distributors. With the help of Growatt OSS, service engineers almost can handle 60%+ problems by remote configuration and FW updating without on-site service.

Datasheet	ShineLink-X
Communication Interface	
Rf433	Yes
Rf433(in free-field conditions)	Up to 100 m
Rf433(two walls blocking)	20 m
Power Supply	
Power consumption	<2W standby, <5W peak
AC power supply input voltage	100V~240V(±10%)
AC power supply input frequency	50/60Hz
General Specifications	
Dimensions(L/H/W)mm	105/85/26mm
Weight	< 1 kg
Mounting options	Tabletop/wall-mount
Degree of protection	IP30
Status display	LED
Ambient temperature range	-20 to 65 °C
Humidity	0-95% (non condensing)
Features	
Graphical user interface	Android/iOS APP
Remote firmware upgrades	Yes
Max. number of devices to monitor	8(RF433)
Warranty	2 years
CE	



Growatt ShineLink-X

- Cable free, easy installation
- Automatic IP addressing, plug and play
- 120 meters long range, wide coverage
- Multiple inverters supported, up to 8
- Build-in storage, 1 month data
- Online monitoring and maintenance

- ShineWIFI/ShineGPRS/ShineLink compatible with TL3-S product.
- ShineWIFI-X/ShineGPRS-X/4G-X/ShineLink-X compatible with TL3-X and MAX product.

THAILAND 134MW SOLAR PLANT

► 134MW ► Phitsanulok, Thailand ► MAX 80KTL3 LV



NANYANG 100MW HILL PLANT

► 100MW

► Henan, China

► Growatt 40000TL3-S



NETHERLANDS POWER 1.5MW SOLAR PLANT

► 1.5MW ► Netherlands ► MAX 80KTL3 LV





NINGQIANG 7.4MW PROJECT

► 7.4MW ► Ningqiang, China ► MAX 60KTL3 L V



GANSU 9.65MW PROJECT

► 9.65MW ► Gansu, China ► MAX 70KTL3 MV

WEIYUAN 2.2MW PROJECT

► 2.2MW ► Weiyuan, Gansu ► MAX 60KTL3 MV





Nin Thuan 3MW PROJECT

► 3MW

► Vietnam

► MAX 80KTL3 LV



Hong Kong 600KW PROJECT

► 600KW

► HongKong, China

► Growatt 40000TL3-NS





FOSHAN 1.3MW PROJECT

► 1.3MW ► Foshan, Guangdong ► MAX 60KTL3 LV

DEZHOU 1.29MW SOLAR PLANT

► 1.29MW ► Dezhou, China ► Growatt 40000TL3-NSE



NETHERLAND 600KW SOLAR SYSTEM

- ▶ 600KW
- ▶ Netherlands
- ▶ Growatt 40000TL3-NS



ANHUI 350KW SOLAR PLANT

- ▶ 350KW
- ▶ Anhui, China
- ▶ Growatt 40000TL3-NS